The 13th Pacific Rim Conference of Ceramic Societies (PACRIM13)

Oct. 27, 2019 -- Nov. 1, 2019 at Okinawa Convention Center, Japan Program

■October 28 (Mon) (Room B3) ■

01:Crystalline and Amorphous Transparent Optical Materials and Photonic Technologies

Session Chairs: WU, Yiquan, Alfred University

13:30

(28-B3-S01-01) Innovation in Optical Isolator (Invited)

IKESUE, Akio[*1]
1. World-Lab Co., Ltd., Japan

14:00

(28-B3-S01-02) Synthesis and optical properties of near-infrared persistent nanophosphors and ceramics (Invited)

DAI, Zhengfa[1]; BOIKO, Vitalii[1]; SALADINO, Maria Luisa[2]; LI, Jiang[3]; HRENIAK, Dariusz[*1]
1. Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Poland
2. Department of Biological, Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), University of Palermo, Viale delle Scienze, Bld. 17, I-90128 Palermo, Italy
3. Key Laboratory of Transparent and Opto-Functional Inorganic Materials, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

14:30

(28-B3-S01-03) Transparent Ceramic Persistent Phosphors (Invited)

TANABE, Setsuhisa[*1]; XU, Jian[1]; UEDA, Jumpei[1]
1. Kyoto University, Japan

15:00

(28-B3-S01-04) Transparent Ceramics Spark Optics Advances--Lasers, Scintillations and Infrared ceramics (Invited)

ZHANG, Long[1]; JIANG, Benxue[*2]; FENG, Tao[3]
1. Shanghai Institute of Optics and Fine Mechanics, China
2. Shanghai Institute of Optics and Fine Mechanics, China
3. Shanghai Institute of Optics and Fine Mechanics, China

(15:15) Coffee Break

Session Chairs: WU, Yiquan, Alfred University

15:30

(28-B3-S01-05) Managing the 5d-4f and 4f-4f Pr^{3+} luminescent transitions by compositional variations for wide-range accurate temperature reading (Invited)

ZYCH, Eugeniusz[*1]; CARLOS, Luis D.[2]; SOJKA, Malgorzata[1]; BRITES, Carlos D. S.[2]; RAMALHO, Joao F. C. B.[2]
1. Faculty of Chemistry, University of Wroclaw, Poland
2. Physics Department, CICECO-Aveiro Institute of Materials University of Aveiro, Portugal

15:45

(28-B3-S01-06) Chalcogenide glass on two-dimensional materials photonics (Invited)

LIN, Hongtao[*1]; SONG, Yi[3]; HUANG, Yizhong[2,4]; DEREK KITA, Derek Kita[2]; WANG, Kaiqi[2]; LI, Lan[2]; LI, Junying[2,5]; ZHENG, Hanyu[2]; SKYLAR DECKOFF-JONES, Skylar Deckoff-Jones[2]; LUO, Zhengqian[2,4]; WANG, Haozhe[3]; ANUPAMA YADAV, Anupama Yadav[5]; CHUNG-CHE HUANG, Chung-Che Huang[7]; GU, Tian[2]; DANIEL HEWAK, Daniel Hewak[7]; KATHLEEN RICHARDSON, Kathleen Richardson[6]; KONG, Jing[3]; HU, Juejun[2]
1. College of Information Science and Electronic Engineering, Zhejiang University, China
2. Department of Materials Science & Engineering, Massachusetts Institute of Technology, USA
3. Department of Electrical Engineering & Computer Science, Massachusetts Institute of Technology, USA
4. Department of Electronic Engineering, Xiamen University, China
5. Key Laboratory of Optoelectronic Technology & System, Education Ministry of China, Chongqing University, China
6. The College of Optics & Photonics, University of Central Florida, USA
7. Optoelectronics Research Centre, University of Southampton, UK

16:00

(28-B3-S01-07) A Novel Approach for Ce:LSO Scintillation Ceramics by Crystallization from Glass (Invited)

SHI, Ying[*1]; FAN, Lingcong[1]; XIE, Jianjun[1]; WANG, Lifeng[1]
1. School of Materials Science and Engineering, Shanghai University, China

16:30

(28-B3-S01-08) Fluoride transparent optical materials (Invited)

CHEN, Xianqiang[1]; WU, Yiquan[*1]
1. Kazuo Inamori School of Engineering, New York State College of Ceramics, Alfred University, USA

16:45

(28-B3-S01-09) Dielectric Metasurface with a near-unity transmission and deep modulation in its hybrid structure with graphene (Invited)

LIU, Chuanbao[1,2,3]; BAI, Yang[*1,2]; ZHOU, Ji[3]; ZHAO, Qian[4]; QIAO, Lijie[1,2]
1. Beijing Advanced Innovation Center for Materials Genome Engineering, University of Science and Technology Beijing, China
2. Insitutue for Advanced Materials and Technology, University of Science and Technology Beijing, China
3. State Key Laboratory of New Ceramics and Fine Processing, School of Materials Science and Engineering, Tsinghua University, China
4. State Kay Laboratory of Tribology, Department of Mechanical Engineering, Tsinghua University, China

Session Chairs: TANG, Dingyuan, Nanyang Technological University

17:00

(28-B3-S01-10) Mechanically Flexible and Multi-functional Photonics Based on Amorphous Glass Materials (Invited)

LI, Lan[*1,2]; LIN, Hongtao[3]; QIAO, Shutao[4]; HUANG, Yizhong[5]; LI, Junying[6]; MICHON, Jerome[7]; ALONSO-RAMOS, Carlos[8]; VIVIEN, Laurent[8]; YADAV, Aupama[9]; RICHARDSON, Kathleen[9]; LU, Nanshu[4]; GU, Tian[7]; HU, Juejun[7]
1. Key Laboratory of 3D Micro/Nano Fabrication and Characterization of Zhejiang Province, School of Engineering, Westlake University, China.
2. Institute of Advanced Technology, Westlake Institute for Advanced Study, China.
3. College of Information Science & Electronic Engineering, Zhejiang University, China

4. Centre for Mechanics of Solids, Structures and Materials, Department of Aerospace Engineering and Engineering Mechanics, University of Texas at Austin, USA
5. University of Chicago, USA
6. University of Shanghai for Science and Technology, China
7. Department of Materials Science & Engineering, Massachusetts Institute of Technology, USA
8. Institut d'Electronique Fondamentale (IEF) , France
9. CREOL, The College of Optics and Photonics, University of Central Florida, USA

17:15

(28-B3-S01-11) High quality powder synthesis and facile forming technology development for transparent AlON ceramics (Invited)

QI, Jianqi[*1,2]; FENG, Zhao[1,2]; HUANG, Xu[1,3]; CHENG, Gang[1,3]; LU, Tiecheng[1,2,3]
1. College of Physics, Sichuan University, China
2. Key Laboratory of Radiation Physics and Technology of Ministry of Education, Sichuan University, China
3. Key Laboratory of High Energy Density Physics of Ministry of Education, Sichuan University, China

■October 28 (Mon) (Room B5) ■

02:Solid Oxide Fuel Cells and Hydrogen Technologies

Cooperation ; Fuel Cell Development Information Center, National Institute of Advanced Industrial Science and Technology (AIST)

SOFC plenary

Session Chairs: AWANO, Masanobu, AIST

10:45

(28-B5-S02-01) Overview of NEDO Fuel Cell and Hydrogen R&D Program in JAPAN (Invited)

HARA, Daishu[*1]
1. New Energy and Industrial Technology Development Organization (NEDO), Japan

SOFC electrolyte and cell

Session Chairs: DOGAN, Fatih, Missouri University of Science and Technology

11:15

(28-B5-S02-02) Improvement in sinterability of ceria/lanthanum silicate bi-layer electrolytes

TAKAHASHI, Susumu[*1]; SUMI, Hirofumi[1]; FUJISHIRO, Yoshinobu[1]
1. National Institute of Advanced Industrial Science and Technology, Japan

11:30

(28-B5-S02-03) Total Scattering Study on Local Structures of $Na_{0.5}Bi_{0.5}TiO_3$-Based Oxide-Ion Conductors

KITAMURA, Naoto[*1]; ISHIKAWA, Kazuya[1]; HAYASHI, Naoya[1]; ISHIDA, Naoya[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

11:45

(28-B5-S02-04) Promising cermets of TiN-Ni for intermediate temperature solid oxide fuel cell interconnects application

LIU, Yan[*1]; GAI, Linlin[1]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

SOFC electrode I

Session Chairs: ISHIHARA, Tatsumi, Kyushu University

13:30

(28-B5-S02-05) Designing Planar-type SOFC: Modeling Approaches on different Scales (Invited)

IVERS-TIFFEE, Ellen[*1]; DIERICKX, Sebastian[1]; GEISLER, Helge[1]; WEBER, Andre[1]
1. Institute of Applied Materials, Karlsruhe Institute of Technology, Germany

14:00

(28-B5-S02-06) Single Chamber Solid Oxide Fuel Cells and Nanostructured Electrodes (Invited)

DOGAN, Fatih[*1]
1. Missouri University of Science and Technology, USA

14:30

(28-B5-S02-07) Development of Microtubular Solid Oxide Fuel Cells for Mobile Applications (Invited)

SUMI, Hirofumi[*1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Session Chairs: IVERS-TIFFEE, Ellen, Institute of Applied Materials, Karlsruhe Institute of Technology

14:45

(28-B5-S02-08) A Highly Active and Redox Stable Novel Ceramic Anode with In- situ Exsolution of Nanocatalysts (Invited)

LEE, Kang Taek[*1]
1. DGIST, Korea

15:15

(28-B5-S02-09) A Electrode Kinetics of One-step Infiltration Induced Multi-cation Oxide Nano-catalyst Cathode for SOFC (Invited)

HONG, Jaewoon[1]; NAMGUNG, Yeon[1]; SONG, Sun-Ju[*1]
1. Chonnam National University, Korea

(15:45) Coffee Break

SOFC electrode II

Session Chairs: SINGH, Prabhakar, University of Connecticut

16:00

(28-B5-S02-10) Strain effects on oxygen dissociation activity of Pr_2NiO_4 for low temperature solid oxide fuel cells (Invited)

ISHIHARA, Tatsumi[*1,2]; KIM, Sunjae[1]; TAKAGAKI, Atsushi[1,2]
1. Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan
2. International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan

16:30

(28-B5-S02-11) Mixed conductive properties of Ca doped $LaFeO_3$ for SOFC cathodes (Invited)

KAGOMIYA, Isao[*1]; MURAYAMA, Tomoki[1]; TSUNEKAWA, Kyosuke[1]; KAKIMOTO, Ken-ichi[1]; SASAMATA, Yuichi[2]; OGURA, Yusuke[2]; YAMAGUCHI, Yuki[3]
1. Nagoya Institute of Technology, Japan
2. Toho Gas Co., Ltd., Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Session Chairs: SUMI, Hirofumi, AIST

17:00

(28-B5-S02-12) High Performance Solid Oxide Fuel Cell with Colloidal Processing Derived Nanostructured $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$/$Gd_{0.2}Ce_{0.8}O_{1.9}$ Cathode

SATO, Kazuyoshi[*1]; IWATA, Chizuru[1]; KANNARI, Naokatsu[1]; ABE, Hiroya[2]
1. Graduate School of Science and Engineering, Gunma University, Japan
2. Joining and Welding Research Institute, Osaka University, Japan

17:15

(28-B5-S02-13) Enhancement of oxygen reduction reaction activity of double-doped bismuth oxide-based cathodes for high performance IT-SOFCs

YUN, Byung-Hyun[*1]; JOH, Dong Woo[1]; KIM, Kyeong Jun[1]; LEE, Jong Joon[1]; CHAE, Munseok S.[1]; KIM, Dae-Won[1]; KANG, Seokbeom[1]; CHOI, Doyoung[1]; HONG, Seung-Tae[1]; LEE, Kang Taek[1]
1. DGIST, Korea

17:30

(28-B5-S02-14) Nucleation and Growth Kinetics of Ex-solution Particles (Invited)

JUNG, WooChul[*1]
1. Dept. MSE, KAIST, South Korea

■October 28 (Mon) (Room A3) ■

03:Advanced Structural Ceramics for Extreme Environments

New methods for joining and machining

Session Chairs: DEMIRSKYI, Dmytro, Tohoku University

16:00

(28-A3-S03-01) Joining of UHTC Composite using Metallic Interlayer (Invited)

SAITO, Noritaka[*1]; NISHIOKA, Nobuo[2]; NAKASHIMA, Kunihiko[1]
1. Department of Materials Science and Engineering, Kyushu University, Japan
2. Shoei Chemical Inc., Japan

16:30

(28-A3-S03-02) Joining and fusion welding of structural ceramics (Invited)

WATTS, Jeremy[*1]; HILMAS, Greg[1]; FAHRENHOLTZ, William[1]
1. Missouri University of Science and Technology, USA

17:00

(28-A3-S03-03) Indentation-based micromechanical characterization of metastable tetragonal zirconia

MASUDA, Hiroshi[*1]; MORITA, Koji[1]; WATANABE, Makoto[1]; OHMURA, Takahito[1]
1. National Institute for Materials Science, Japan

17:15

(28-A3-S03-04) In-situ formed h-BN platelet reinforced boron carbide composites sintered via SPS

ZHANG, Fan[*1]; FU, Zhengyi[2]
1. Wuhan University of Technology, China
2. Wuhan University of Technology, China

17:30

(28-A3-S03-05) Synthesis and Thermal Stability of $Ti_{3-x}Zr_xSiC_2$ MAX Phase Solid Solutions

GUBAREVICH, Anna V.[*1]; MALETASKIC, Jelena[1,2]; YOSHIDA, Katsumi[1]
1. Tokyo Institute of Technology, Japan
2. Institute for Nuclear Sciences, University of Belgrade, Serbia

■October 28 (Mon) (Room A2) ■

04:Symposium on Multiferroic Materials

Session Chairs: CHEN, Xiang Ming, Zhejiang University

11:15

(28-A2-S04-01) Magnetoelectric effects in topological magnets (Keynote)

TOKURA, Yoshinori[*1,2]
1. RIKEN Center for Emergent Matter Science, Japan
2. Tokyo College and Department of Applied Physics, University of Tokyo, Japan

Session Chairs: LIU, Jun-Ming, Nanjing University

13:30

(28-A2-S04-02) Dynamical Properties of Multiferroics (Invited)

BELLAICHE, Laurent[*1]; SAYEDAGHAEE, S. Omid[1,2]; PAILLARD, Charles[1,3]; XU, Bin[1,4]; PROSANDEEV, Sergey[1]
1. Physics Department and Institute for Nanoscience and Engineering, University of Arkansas, USA
2. Microelectronics-Photonics Program, University of Arkansas, USA
3. Laboratoire Structures, Propriétés et Modélisation des Solides, CentraleSupélec, CNRS UMR 8580, Université Paris-Saclay, France
4. School of Physical Science and Technology, Soochow University, Suzhou 215006, China

14:00

(28-A2-S04-03) Topology and functionality in complex oxides (Invited)

INIGUEZ, Jorge[*1,2]
1. Luxembourg Institute of Science and Technology, Luxembourg
2. University of Luxembourg, Luxembourg

14:30

(28-A2-S04-04) Dynamic magnetoelectric control of Cr_2O_3 domain (Invited)

SHIRATSUCHI, Yu[*1]
1. Department of Materials Science and Engineering, Osaka University, Japan

15:00

(28-A2-S04-05) Theoretical Design of Low Dimensional Polar Materials (Invited)

DONG, Shuai[*1]
1. School of Physics, Southeast University, China

15:30

(28-A2-S04-06) Classification theory of magnetoelectric multipole and candidate materials (Invited)

WATANABE, Hikaru[1]; SHITADE, Atsuo[1,2]; DAIDO, Akito[1]; YANASE, Youichi[*1]
1. Department of Physics, Kyoto University, Japan
2. RIKEN, Center for Emergent Matter Science, Japan

16:00

(28-A2-S04-07) Electric-Field Control of Magnetization, Jahn-Teller Distortion, and Orbital Ordering in Ferroelectric Ferromagnets (Invited)

YANG, Yurong[*1,2]; CHEN, Lan[1,2]; XU, Changsong[1]; TIAN, Hao[2]; XIANG, Hongjun[3]; INIGUEZ, Jorge[4]; BELLAICHE, Laurent[1]
1. University of Arkansas, USA
2. Nanjing University, China
3. Fudan University, China
4. Luxembourg Institute of Science and Technology, Luxembourg

(16:15) Coffee Break

Session Chairs: BELLAICHE, Laurent, University of Arkansas

17:00

(28-A2-S04-08) Multiferroic Hexaferrites: from Fundamental Physics to Memory Device (Invited)

SUN, Young[*1]; ZHAI, Kun[1]; SHEN, Shipeng[1]; CHAI, Yisheng[1]
1. Institute of Physics, Chinese Academy of Sciences, China

17:30

(28-A2-S04-09) Symmetry modulation and electric field-controlled magnetism in $Bi_{1-x}Nd_xFeO_3$ ceramics

CHEN, Jing[*1]; XU, Bin[2,3]; LIU, Xiao Qiang[1]; GAO, Ting Ting[1]; BELLAICHE, Laurent[3]; CHEN, Xiang Ming[1]
1. ZheJiang University, China
2. Soochow University, China
3. University of Arkansas, USA

17:45

(28-A2-S04-10) Insights into the Coupled Domains in Conical Spin-driven Multiferroics

FISCHER, Jonas K. H.[*1]; MISAWA, Ryusuke[1]; KIMURA, Kenta[1]; KIMURA, Tsuyoshi[1]
1. University of Tokyo, Department of Advanced Materials Science, Japan

■October 28 (Mon) (Room Theater) ■

07:Dielectric, Piezoelectric, and Ferroelectric Materials: Advances for Emerging Applications

Energy Strage

Session Chairs: YOSHIMURA, Takeshi, Osaka Prefecture University

10:45

(28-Theater-S07-01) $AgNbO_3$-based Lead-free Antiferroelectrics for Energy Storage Applications (Invited)

LI, Jing-Feng[*1]; GAO, Jing[1]; ZHAO, Lei[1]; ZHANG, Yichi[1]; LIU, Qing[1]; ZHANG, Shujun[2]
1. School of Materials Science and Engineering, Tsinghua University, China
2. Institute for Superconducting and Electronic Materials, Australian Institute of Innovative Materials, University of Wollongong, Australia

11:15

(28-Theater-S07-02) Polymer Dielectric Composites with Hierarchical Design for High Energy Density Capacitors (Invited)

WANG, Hong[*1,2]
1. Xi'an Jiaotong University, China
2. Southern University of Science and Technology, China

11:45

(28-Theater-S07-03) Dielectric Interface for Li Ion Battery with Ultrahigh Rate Capability

TERANISHI, Takashi[*1]; YASUHARA, Sou[2]; YASUI, Shintaro[2]; KOZAI, Kaisei[1]; YAMANAKA, Ryoji[1]; ITOH, Mitsuru[2]; KISHIMOTO, Akira[1]
1. Okayama University, Japan
2. Tokyo Institute of Technology, Japan

Energy Conversion

Session Chairs: WANG, Hong, Xi'an Jiaotong University

13:30

(28-Theater-S07-04) Ferroic Perovskite Oxides for Caloric Cooling Applications (Invited)

MALIC, Barbara[*1,2]; URSIC, Hana[1]; FULANOVIC, Lovro[1]; BOBNAR, Vid[2,3]; DRNOVSEK, Silvo[1]; PRAH, Uros[1,2]; BRADESKO, Andraz[1,2]; ROJAC, Tadej[1,2]; JAZBEC, Anze[4]; SNOJ, Luka[4,5]
1. Electronic Ceramics Department, Jožef Stefan Institute, Slovenia
2. Jožef Stefan International Postgraduate School, Slovenia
3. Condensed Matter Physics Department, Jožef Stefan Institute, Slovenia
4. Reactor Physics Department, Jožef Stefan Institute, Slovenia
5. Faculty of Mathematics and Physics, University of Ljubljana, Slovenia

14:00

(28-Theater-S07-05) Positive and Negative Electrocaloric Effects in (Pb,La)(Zr,Ti)O_3 Ceramics

MAIWA, Hiroshi[*1]
1. Shonan Institute of Technology, Japan

14:15

(28-Theater-S07-06) Energy Harvesting from Electric Power Lines Using Piezoelectric Effect

YOSHIMURA, Takeshi[*1]; UENO, Yuya[2]; MINAMI, Toshio[2]; MURAKAMI, Shuichi[3]; FUJIMURA, Norifumi[1]
1. Osaka Prefecture University, Japan
2. Daihen Corporation, Japan
3. Osaka Research Institute of Industrial Science and Technology, Japan

14:30

(28-Theater-S07-07) Ferroelectric Behavior of $MAPbX_3$ Perovskites and Ferroelectric Semiconductor Solar Cells

ZHANG, Wenxiong[1]; LI, Shen[1]; IMAI, Yasuo[1]; KODERA, Kei[1]; FENG, Qi[*1]
1. Faculty of Engineering and Design, Kagawa University, Japan

Novel Polar Materials

Session Chairs: LI, Jing-Feng, Tsinghua University

14:45

(28-Theater-S07-08) Cation order/disorder behavior of spinel-structured $LiGaTiO_4$ microwave dielectric ceramics

KAN, Akinori[*1]; OKAZAKI, Hiroto[1]; OGAWA, Hirotaka[1]
1. Meijo University, Japan

15:00

(28-Theater-S07-09) Structural Phase Transition of $Ca_8[AlO_2]_{12}(SO_4)_2$ Ferroelectric

NAKAHIRA, Yuki[*1]; KAWAMURA, Genta[1]; WAKAMATSU, Toru[2]; MORIYOSHI, Chikako[1]; KUROIWA, Yoshihiro[1]; TERASAKI, Ichiro[2]; TANIGUCHI, Hiroki[2]
1. Hiroshima University, Japan
2. Nagoya University, Japan

15:15

(28-Theater-S07-10) Development of Hybrid Improper Ferroelectric Layered Perovskites

YOSHIDA, Suguru[*1]; AKAMATSU, Hirofumi[2]; TSUJI, Ryosuke[1]; HERNANDEZ, Olivier[3]; PADMANABHAN, Haricharan[4]; GIBBS, Alexandra S.[5]; MIBU, Ko[6]; MURAI, Shunsuke[1]; GOPALAN, Venkatraman[4]; TANAKA, Katsuhisa[1]; FUJITA, Koji[1]
1. Kyoto University, Japan
2. Kyushu University, Japan
3. Universite de Rennes, France
4. Pennsylvania State University, USA
5. Rutherford Appleton Laboratory, U.K.
6. Nagoya Institute of Technology, Japan

(15:30) Coffee Break

Session Chairs: YONEDA, Yasuhiro, Japan Atomic Energy Agency

15:45

(28-Theater-S07-11) Weak Ferroelectricity in $n = 2$ Pseudo Ruddlesden-Popper-type Niobate $Li_2SrNb_2O_7$

TANIGUCHI, Hiroki[*1,4]; NAGAI, Takayuki[4]; SHIRAKUNI, Hirokazu[1]; NAKANO, Akitoshi[1]; SAWA, Hiroshi[2]; MORIWAKE, Hiroki[3]; TERASAKI, Ichiro[1]
1. Department of Physics, Nagoya University, Japan
2. Department of Applied Physics, Nagoya University, Japan
3. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
4. Materials Research Center for Element Strategy, Tokyo Institute of Technology, Japan

16:00

(28-Theater-S07-12) Structural analyses in Ruddlesden－Popper-type Li2SrNb2O7 using synchrotron X-ray diffraction experiments

NAKANO, Akitoshi[*1]; NAGAI, Takayuki[2]; SAWA, Hiroshi[3]; TERASAKI, Ichiro[1]; TANIGUCHI, Hiroki[1]
1. Department of Physics, Nagoya University, Japan
2. Materials Research Center for Element Strategy, Tokyo Institute of Technology, Japan
3. Department of Applied Physics, Nagoya University, Japan

16:15

(28-Theater-S07-13) Microstructures and their relevance to photoluminescence in Eu^{2+}-doped $Sr_{1-x}Ca_xAl_2O_4$

MORI, Shigeo[*1]; TSUKASAKI, Hirofumi[1]; HIRANO, Hayato[1]; KAWAGUCHI, Shogo[2]; ISHII, Yui[1]; TAKEDA, Hiroaki[3]
1. Department of Materials Science, Osaka Prefecture University, Japan
2. Japan Synchrotron Radiation Research Institute (JASRI/SPring-8), Japan
3. School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan

HfO2-based Ferroelectrics

Session Chairs: YASUI, Shintaro, Tokyo Institute of Technology

16:30

(28-Theater-S07-14) Nonlinear Polarization Response of HfO_2-based Thin Films Fabricated by Chemical Solution Deposition (Invited)

YONEDA, Shingo[*1]
1. Murata Manufacturing Co., Ltd, Japan

17:00

(28-Theater-S07-15) The phase stability and

epitaxial growth of HfO_2-based ferroelectric materials (Invited)
SHIMIZU, Takao[*1]; MIMURA, Takanori[1]; FUNAKUBO, Hiroshi[1]
1. Tokyo Institute of Technology, Japan

17:30
(28-Theater-S07-16) Ferroelectric phase formation in hafnia based thin films (Invited)
PARK, Min Hyuk[*1]; LEE, Yougn Hwan[2]; MIKOLAJICK, Thomas[3,4]; SCHROEDER, Uwe[3]; HWANG, Cheol Seong[2]
1. School of Materials Science and Engineering, Pusan National University, Korea
2. Department of Materials Science and Engineering & Inter-University Research Center College of Engineering, Korea
3. NaMLab gGmbH, Germany
4. Chair of Nanoelectronic Materials, Germany

■October 28 (Mon) (Room B1C)■

11:Advanced Powder Processing and Manufacturing Technologies

Synthesis I

Session Chairs: TATAMI, Junichi, Yokohama National University

10:45
(28-B1C-S11-01) Direct formation of photocatalytic anatase-TiO_2 on titanium-metal and its application (Invited)
ISHIKAWA, Toshihiro[*1]; TSUJIKURA, Keiko[1]
1. Tokyo University of Science, Yamaguchi (Sanyo-Onoda City University), Japan

11:15
(28-B1C-S11-02) Synthesis of transition metal-doped zinc chalcogenide powders (Invited)
YU, Shengquan[1]; YI, Yiyu[1]; MILISAVLJEVIC, Iva[1]; WU, Yiquan[*1]
1. Kazuo Inamori School of Engineering, New York State College of Ceramics Alfred University, USA

11:45
(28-B1C-S11-03) Formation Mechanism of Octahedral Molybdenum Cluster Film by Electrophoretic Deposition
NGUYEN, Thi Kim Ngan[1,2]; UCHIKOSHI, Tetsuo[*1,2]; GRASSET, Fabien[1]; CORDIER, Stephane[3]
1. Research Center for Functional Materials, National Institute for Materials Science, Japan
2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
3. Institute of Chemical Sciences of Rennes, UMR 6226 CNRS-University of Rennes 1, France

Synthesis II

Session Chairs: ISHIKAWA, Toshihiro, Tokyo University of Science, Yamaguchi (Sanyo-Onoda City University)

13:30
(28-B1C-S11-04) Synthesis and High Throughput Screening of Ceramic Phosphors for Wide Applications (Invited)
LIU, Qian[*1]; WAN, Jieqiong[1,2]; ZHANG, Kong[1,2]; WEI, Qinhua[1,2]; ZHOU, Zhenzhen[1,2]; XU, Xiaoke[1]; ZHANG, Ying[1]; LI, Ru[1]; ZHOU, Yao[1]
1. The State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, China

14:00
(28-B1C-S11-05) Liquid Phase Synthesis of Functional Nanoparticles Controlled in Size and Shape for Printed Electronics Technology (Invited)
KANIE, Kiyoshi[*1]
1. Tohoku University, Japan

Session Chairs: TAKAI, Chika, Gifu University

14:30
(28-B1C-S11-06) Particle Synthesis with Controlled Morphology by Wet Planetary Ball Milling
KOZAWA, Takahiro[*1]; FUKUYAMA, Kayo[1]; KONDO, Akira[1]; NAITO, Makio[1]
1. Joining and Welding Research Institute, Osaka University, Japan

14:45
(28-B1C-S11-07) Fabrication of c-axis oriented bulk hydroxyapatite in rotating high magnetic field using UV curable binder
BABA, Shoko[*1]; TANAKA, Satoshi[2]
1. Department of Science of Technology Innovation, Nagaoka University of Technology, Japan
2. Department of Materials Science and Technology, Nagaoka University of Technology, Japan

(15:00) Coffee Break

Interface

Session Chairs: UCHIKOSHI, Tetsuo, NIMS

15:30
(28-B1C-S11-09) Non-reactive and reactive wetting of ceramics by liquid metals and alloys (Invited)
HODAJ, Fiqiri[*1]
1. Grenoble Institute of Technology, France

16:00
(28-B1C-S11-10) NMR as a tool to characterize the aggregation structure of silica nanoparticles in a liquid
TAKAI-YAMASHITA, Chika[*1]; SATO, Emiko[2]; FUJI, Masayoshi[2]
1. Gifu University, Japan
2. Nagoya Institute of Technology, Japan

16:15
(28-B1C-S11-11) Surface modification of hexagonal boron nitride by π-π interaction
TOMINAGA, Yuichi[*1]; HOTTA, Yuji[1]; IMAI, Yusuke[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Synthesis III

Session Chairs: TOMINAGA, Yuichi, AIST

16:30
(28-B1C-S11-12) Effective Preventions of Thermal- and Moisture-Induced Degradations for $Sr_2Si_5N_8:Eu^{2+}$ Phosphor via Thermal Treatment in Nitrogen-Hydrogen
ZHANG, Chenning[*1]; UCHIKOSHI, Tetsuo[1]; XIE, Rong-Jun[2]; LIU, Lihong[1]; CHO, Yujin[3]; HIROSAKI, Naoto[3]
1. National Institute for Materials Science, Japan
2. College of Materials, Xiamen University, China
3. National Institute for Materials Science, Japan

16:45
(28-B1C-S11-13) Development of Novel Oxygen Combustion Burner for Forehearth Heating : *"Innova-Jet F.H."*
SAITO, Takeshi[*1]; YAMAMOTO, Yasuyuki[1]; HAGIHARA, Yoshiyuki[1]
1. Combustion Technology Div., Taiyo Nippon Sanso Corp., Japan

17:00
(28-B1C-S11-14) Nanostructured Powder Design and Synthesis for Sustainable Development
KONSTANDOPOULOS, Athanasios[*1]; ZACHAROPOULOU, Vassiliki[1]; SAKELLARIOU, Kyriaki[1]; GANAS, George[1]
1. Centre for Research and Technology-Hellas (CERTH), Greece

■October 28 (Mon) (Room T1) ■

12:Novel Nanocrystal Technologies for Advanced Ceramic Materials & Devices

Nanocube assembly

Session Chairs: SATO, K., Gunma University

10:45

(28-T1-S12-01) Nanocubes and Self-Assembly Toward Dielectrics in The Smart Society (Invited)

KATO, Kazumi[*1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:15

(28-T1-S12-02) Solvothermal Synthesis of Barium Titanate Nanocubes and Their Assembly (Invited)

UENO, Shintarou[1]; HATAKEYAMA, Sakuya[1]; WATANABE, Mutsuki[1]; FUKASAWA, Kazuki[1]; CHIKATA, Tsukasa[1]; FUJII, Ichiro[1]; WADA, Satoshi[*1]

1. University of Yamanashi, Japan

11:45

(28-T1-S12-03) Ferroelectric properties and domain structures of $BaTiO_3$ nanocube self-assembled monolayers

ITASAKA, Hiroki[*1]; MIMURA, Ken-ichi[1]; KATO, Kazumi[2]

1. Inorganic Functional Materials Research Institute, National Institute of Advanced Industrial Science and Technology, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan

Session Chairs: UENO, S., University of Yamanashi

13:30

(28-T1-S12-04) Design of Ordered Microarrays by Nanoscale Brickworks of Rectangular Building Blocks (Invited)

IMAI, Hiroaki[*1]

1. Keio University, Japan

Characterization

Session Chairs: UENO, S., University of Yamanashi

14:00

(28-T1-S12-05) Observation of metal oxide nanocrystals and nanoclusers using ultra high resolution scanning electron microscope (Invited)

ASANO, Natsuko[1]; ASAHINA, Shunsuke[*1]; TAKAMI, Seiichi[2]

1. EP business unit, EP application department, SEM team, JEOL Ltd., Japan
2. Graduate School of Engineering, Nagoya University, Japan

14:30

(28-T1-S12-06) Electron microscopy of surface reconstruction of a $SrTiO_3$ photocatalyst

NAKASHIMA, Kouichi[*1]; YAMAZAKI, Reina[1]; OKOUCHI, Naoya[1]; KOBAYASHI, Yoshio[1]; KAKIHANA, Masato[2]; HIGASHI, Masanobu[3]; ABE, Ryu[4]

1. Graduate School of Science and Engineering, Ibaraki University, Japan
2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
3. Advanced Research Institute for Natural Science and Technology, Osaka City University, Japan
4. Graduate School of Engineering, Kyoto University, Japan

14:45

(28-T1-S12-07) Surface Reactivity of Metal Oxide Nanocrystals as Evaluated by Optical Characterization

FUJIHARA, Shinobu[*1]; TAKAHASHI, Hideaki[1]; UMEHARA, Takashi[1]; HAGIWARA, Manabu[1]

1. Keio University, Japan

(15:00) Coffee Break

Crystal growth

Session Chairs: NAKASHIMA, K., Ibaraki Ubiversity

15:15

(28-T1-S12-08) Solvothermal Synthesis of Tungsten and Vanadium Based Oxides for Infrared Light Shielding (Invited)

RIAPANITRA, Anung[1]; ASAKURA, Yusuke[1]; YIN, Shu[*1]

1. IMRAM, Tohoku University, Japan

15:45

(28-T1-S12-09) Growth of $La_{0.75}Sr_{0.25}Cr_{0.5}Mn_{0.5}O_{3-\delta}$/$Gd_{0.2}Ce_{0.8}O_{1.9}$ Nanocomposite as Alternative Anode Material of Solid Oxide Fuel Cells

SATO, Kazuyoshi[*1]; INABA, Yoshiki[1]; KANNARI, Naokatsu[1]; ABE, Hiroya[2]; SCIAZKO, Anna[3]; SHIKAZONO, Naoki[3]; OKABE, Takao[4]; TANIGUCHI, Jun[4]

1. Graduate School of Science and Engineering, Gunma University, Japan
2. Joining and Welding Research Institute, Osaka University, Japan
3. Institute of Industrial Science, The University of Tokyo, Japan
4. Faculty of Industrial Science and Technology, Tokyo University of Science, Japan

16:00

(28-T1-S12-10) Accelerated Oxygen Reduction Reaction in LSM-YSZ Cathode by nanostructurization and composition control

TAMURA, Kana[*1]; NANTHANA, Pouy[1]; SATO, Kazuyoshi[1]; KANNARI, Naokatsu[1]; ABE, Hiroya[2]

1. Gunma University, Japan
2. Osaka University, Japan

16:15

(28-T1-S12-11) Synthesis of morphology-controlled hydroxyapatite and its application as carrier for photocatalyst (Invited)

GOTO, Tomoyo[*1]; CHO, Sung Hun[1]; OHTSUKI, Chikara[2]; SEKINO, Tohru[1]

1. The Institute of Scientific and Industrial Research, Osaka University, Japan
2. Graduate School of Engineering, Nagoya University, Japan

Titania nanocrystals

Session Chairs: TANIGUCHI, T., NIMS

16:45

(28-T1-S12-13) Anatase and Brookite TiO_2 Nanocrystals for Electron-Transport Layer of Perovskite Solar Cells (Invited)

TOMITA, Koji[*1]; SHAHIDUZZAMAN, Md.[2]; VISAL, Sem[3]; KASUYA, Kohei[1]; ISOMURA, Masao[3]

1. Graduate School of Science and Technology, Tokai University, Japan
2. Nanomaterials Research Institute, Kanazawa University, Japan
3. Graduate School of Engineering, Tokai University, Japan

■October 28 (Mon) (Room C1) ■

15:Advanced Nanocharacterization and Atomic-Scale Modeling of Grain Boundaries and Interfaces in Ceramics: Structures, Dynamics and Properties

Grain boundary structure, segregation and dynamics

Session Chairs: SHIBATA, Naoya, University of Tokyo

10:45

(28-C1-S15-01) Alternation of Grain Boundary Core Structures by Externally Applied Electric Fields (Keynote)

HUGHES, Lauren[1]; RUSSELL, Sean[1]; VAN BENTHEM, Klaus[*1]

1. University of California,Davis, USA

11:15

(28-C1-S15-02) Disconnections and the Kinetics of Grain Growth (Invited)

MOSHE, Ruth[1]; MARDER, Rachel[1]; STERNLICHT, Hadas[1]; KAPLAN, Wayne D.[*1]

1. Department of Materials Science and Engineering, Technion - Israel Institute of Technology, Israel

Session Chairs: BENTHEM, Klaus van, UC Davis

11:45

(28-C1-S15-03) Direct imaging of atomistic grain boundary migration

WEI, Jiake[*1]; FENG, Bin[1]; ISHIKAWA, Ryo[1,2]; YOKOI, Tatsuya[3]; MATSUNAGA, Katsuyuki[3]; SHIBATA, Naoya[1,4]; IKUHARA, Yuichi[1,4]

1. Institute of Engineering Innovation, The University of Tokyo, Japan
2. Japan Science and Technology Agency, PRESTO, Japan
3. Department of Materials Physics, Nagoya University, Japan
4. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

13:30

(28-C1-S15-04) Superplastic forming of oxide ceramics enhanced by strong electric field (Invited)

YOSHIDA, Hidehiro[*1]; SASAKI, Yamato[2]; YAMAMOTO, Takahisa[3]
1. Department of Materials Science, The University of Tokyo, Japan
2. Department of Materials Science and Technology, Tokyo University of Science, Japan
3. Materials Design Innovation Engineering, Nagoya University, Japan

14:00

(28-C1-S15-05) Segregation behaviors of single and multiple dopants in Al_2O_3 Σ7{4-510} grain boundary

YANG, Chuchu[*1]; FENG, Bin[1]; TOCHIGI, Eita[1]; WEI, Jiake[1]; SHIBATA, Naoya[1,2]; IKUHARA, Yuichi[1,2]
1. Institute of Engineering Innovation, The University of Tokyo, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

14:15

(28-C1-S15-06) Roles of Hetero-Interfaces and Grain Boundaries in Nucleation and Subsequent Grain Growth of δ-γ Massive-like Transformation of Carbon Steel

KUROTSU, Keita[*1]; YOSHIYA, Masato[1,2]; YASUDA, Hideyuki[3]
1. Department of Adaptive Machine Systems, Osaka University, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
3. Department of Materials and Engineering, Kyoto University, Japan

14:30

(28-C1-S15-07) The easy paths for fracture and for shear flow at the atomic scale: Ceramics versus glasses (Invited)

ROUXEL, Tanguy[*1]
1. University of Rennes 1, France

(15:00) Coffee Break

Advanced theory for ceramic materials

Session Chairs: YOSHIYA, Masato(1) ; SHIBATA, Naoya (2), (1) Osaka University; (2)University of Tokyo

15:15

(28-C1-S15-08) Electronic and Atomic Structures of Interfacial Defect Cores in Structural Ceramics (Keynote)

MATSUNAGA, Katsuyuki[*1,2]
1. Nagoya University, Japan
2. Japan Fine Ceramics Center, Japan

15:45

(28-C1-S15-09) Characterizing, Predicting, and Utilizing Interfacial Phase-like Transformations (Invited)

LUO, Jian[*1]
1. University of California, USA

16:15

(28-C1-S15-10) Comprehension of interfacial structure and property relationship via machine learning

OTANI, Ryuken[1]; KIYOHARA, Shin[1]; SHIBATA, Kiyou[1]; MIZOGUCHI, Teruyasu[*1]
1. Institute of Industrial Science, The University of Tokyo, Japan

16:30

(28-C1-S15-11) Interpretation of Thermal Conduction Mechanism near Grain Boundaries by Structural Descriptors and Machine Learning

FUJII, Susumu[*1,2,3]; YOKOI, Tatsuya[3,4]; YOSHIYA, Masato[1,3]
1. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
2. Center for Materials Research by Information Integration, National Institute for Materials Science, Japan
3. Department of Adaptive Machine Systems, Osaka University, Japan
4. Department of Materials Physics, Nagoya University, Japan

16:45

(28-C1-S15-12) Nanoscopic Thermal Conduction across Ceramic Interfaces (Keynote)

YOSHIYA, Masato[*1,2]; WATANABE, Naoki[1]; FUNAI, Kohei[1]; FUJII, Susumu[1,2]; YOKOI, Tatsuya[3]
1. Department of Adaptive Machine Systems, Osaka University, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
3. Department of Materials Physics, Nagoya University, Japan

17:15

(28-C1-S15-13) Investigating the effects of local chemistry on diffusion in Spinels; simulating cooperative diffusion in MgAl2O4

WARD, Robyn Elizabeth[*1]; NAKAYAMA, Masanobu[1,2,3]
1. National Institute of Materials Science, Japan
2. Nagoya Institute of Technology, Japan
3. ESICB, Kyoto University, Japan

17:30

(28-C1-S15-14) Local Thermal Transport across Nano-Interfaces of Si/SiO2 Heterostructures

WATANABE, Naoki[*1]; FUNAI, Kohei[1]; FUJII, Susumu[1,2]; YOSHIYA, Masato[1,2]; NAKAMURA, Yoshiaki[3]
1. Department of Adaptive Machine Systems, Osaka University, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan.
3. Graduate School of Engineering Science, Osaka University, Japan.

17:45

(28-C1-S15-15) Role of doped Pt^{2+} or Rh^{3+} for promotion of the oxygen vacancy formation and diffusion on ZrO_2 (111) surface: A first-principles study

TONG, Ke[*1,2]; MORI, Toshiyuki[1]; YE, Fei[3]
1. Center for Green Research on Energy and Environmental Materials, National Institute for Materials Science, Japan
2. School of Materials Science and Engineering, Dalian University of Technology, China
3. Department of Materials Science and Engineering, Southern University of Science and Technology, China

■October 28 (Mon) (Room B6) ■

16:Single Crystals, Thin Films and Microstructures in Rechargeable Battery Systems

Cathode oxide materials

Session Chairs: ISHIKAWA, Ryo, University of Tokyo, Japan

10:45

(28-B6-S16-01) Structural Transitions in Layered Oxides Positive Electrode Materials induced by Electrochemical Intercalation (Invited)

DELMAS, Claude[*1]
1. ICMCB - CNRS, France

11:15

(28-B6-S16-02) Lattice Oxygen Redox Activities in Novel Oxides for Next Generation Rechargeable Batteries (Invited)

ZHANG, Minghao[1]; MENG, Y. Shirley[*1]
1. University of California San Diego, USA

11:45

(28-B6-S16-03) Characterization of the Biphasic Interface in Olivine-Type Lithium Iron Phosphate using Scanning Transmission Electron Microscopy

KOBAYASHI, Shunsuke[*1]; KUWABARA, Akihide[1]; FISHER, Craig A. J.[1]; UKYO, Yoshio[1]; IKUHARA, Yuichi[1,2]
1. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
2. Institute of Engineering Innovation, The University of Tokyo, Japan

Session Chairs: CHUNG, Sung-Yoon, Korea Advanced Institute of Science and Technology

13:45

(28-B6-S16-04) Factors Affecting Reversibility of Anionic Redox for Li-excess Metal Oxides as Positive Electrode Materials of Lithium Batteries (Invited)

YABUUCHI, Naoaki[*1]
1. Yokohama National University, Japan

14:15

(28-B6-S16-05) Structure and electronic structure of functional materials under symmetric breaking (Invited)

GU, Lin[*1]
1. The Insitute of Physics, Chinese Academy of Sciences, China

14:45

(28-B6-S16-06) STEM observation of the interfacial structure between delithiated and pristine in Li_2MnO_3

NAKAYAMA, Kei[*1]; ISHIKAWA, Ryo[1,2]; KOBAYASHI, Shunsuke[3]; SHIBATA, Naoya[1,3]; IKUHARA, Yuichi[1,3]
1. The University of Tokyo, Japan, Japan
2. PRESTO, Japan
3. Japan Fine Ceramics Center, Japan

15:00

(28-B6-S16-07) Atomic Structure of Li-excess Cathode Thin Films with High Charge-Discharge Capacity

SUGAWARA, Yoshihiro[*1]; HIKIMA, Kazuhiro[2]; KUWABARA, Akihide[1]; UKYO, Yoshio[1]; HIRAYAMA, Masaaki[2]; KANNO, Ryoji[2]; IKUHARA, Yuichi[1,3]
1. Japan Fine Ceramics Center, Japan
2. Tokyo Institute of Technology, Japan
3. The University of Tokyo, Japan

15:15

(28-B6-S16-08) Effect of Co doping on surface structure reconstruction and electron-beam damage behavior of $LiCo_{0.5}Mn_{1.5}O_4$ nanoparticles

HUANG, Rong[*1,2]; IKUHARA, Yumi H.[2]; XU, Wangqiong[1]; KUWABARA, Akihide[2]; FISHER, Craig A. J.[2]; MORIWAKE, Hiroki[2]; HIRAYAMA, Tsukasa[2]; IKUHARA, Yuichi[2,3]
1. Key Laboratory of Polar Materials and Devices (MOE), Department of optoelectronics, East China Normal University, China
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
3. Institute of Engineering Innovation, the University of Tokyo, Japan

(15:30) Coffee Break

Characterization of battery materials

Session Chairs: GU, Lin, The Institute of Physics, China

15:45

(28-B6-S16-09) Nanoscale Observations of Ion Dynamics in Battery Materials (Invited)

IKUHARA, Yuichi[*1,2]; KOBAYASHI, Sunsuke[1]; SASAKI, Yuki[1]; KAWASAKI, Tadahiro[1]; KUWABARA, Akihide[1]; UKYO, Yoshio[1]; FISHER, Craig[1]
1. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
2. Institute of Engineering Innovation, The University of Tokyo, Japan

16:15

(28-B6-S16-10) Elucidating Interfacial Stability of Solid Electrolytes *via in situ* and functional Electron Microscopy (Invited)

CHI, Miaofang[*1]; SAKAMOTO, Jeff[2]; DUDNEY, Nancy[3]
1. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, United States
2. Mechanical Engineering, University of Michigan, United States
3. Chemical Sciences Division, Oak Ridge National Laboratory, United States

16:45

(28-B6-S16-11) Direct STEM Observation of Atomic-Scale Defects in Intercalation Cathode Materials (Invited)

CHUNG, Sung-Yoon[*1]
1. Korea Advanced Institute of Science and Technology, Korea

17:15

(28-B6-S16-12) Three-Dimensional SWCNT and MWCNT Hybrid Networks for Extremely High-loading and High Rate Cathode Materials

ZETTSU, Nobuyuki[*1,2]; KIM, Dae-wook[1]; TESHIMA, Katsuya[1,2]
1. Department of Materials Chemistry, Faculty of Engineering, Shinshu University, Japan
2. Research Initiative for Supra-Materials (RISM), Japan

17:30

(28-B6-S16-13) Structural transition characterization in chalcogenide storage materials

CHENG, Yan[*1,2]; ZHENG, Yonghui[2]; XIN, Tianjiao[2]; LV, Shilong[2]; HUANG, Rong[1]; SONG, Zhitang[2]; FENG, Songlin[2]
1. Key Laboratory of Polar Materials and Devices (MOE), Department of Optoelectronics, East China Normal University, China
2. State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

17:45

(28-B6-S16-14) Aerosol Deposition Method: A new way to fabricate conductive solid electrolytes for next generation Li ion batteries

NAZARENUS, Tobias[*1]; HANFT, Dominik[1]; MOOS, Ralf[1]
1. University of Bayreuth, Department of Functional Materials, Germany

■October 28 (Mon) (Room A1) ■

17:Green Processing and Green Energy Materials for Sustainable Society

Session Chairs: WAKIYA, Naoki, Shizuoka Univ.

10:45

(28-A1-S17-01) Engineering Better Ceramic Membranes for Water and Wastewater Treatment (Keynote)

WANG, John[*1]
1. National University of Singapore, Singapore

Session Chairs: MASUMOTO, Hiroshi, Tohoku Univ.

11:15

(28-A1-S17-02) Hydrothermal deposition of epitaxial (K,Na,Li)(Nb,Ta)O_3 films

SHIRAISHI, Takahisa[*1]; ITO, Yoshiharu[2]; TATEYAMA, Akinori[2]; KIGUCHI, Takanori[1]; UCHIDA, Hiroshi[3]; FUNAKUBO, Hiroshi[2]; KONNO, Toyohiko J.[1]
1. Tohoku University, Japan
2. Tokyo Institute of Technology, Japan
3. Sophia University, Japan

11:30

(28-A1-S17-03) Effect of steric hindrance on preparation of precursor solution for $(K_{0.5}Na_{0.5})NbO_3$ thin films

ARAI, Takashi*1; NAKAYAMA, Kaho1; SUZUKI, Maya1; OHNO, Tomoya2; SAKAMOTO, Naonori3; WAKIYA, Naoki3; SUZUKI, Hisao3
1. National Institute of Technology, Numazu college, Japan
2. Kitami Institute of Technology, Japan
3. Shizuoka University, Japan

11:45

(28-A1-S17-04) Low temperature fabrication of flexible Li-ion conductive solid electrolyte composite film

SAKAMOTO, Naonori*1,2; SHIMA, Munehiko1; SUGIYAMA, Kazuhiro1; PADARTI, Jeevan Kumar2; KAWAGUCHI, Takahiko1; WAKIYA, Naoki1,2; SUZUKI, Hisao1,2
1. Graduate School of Engineering, Shizuoka University, Japan
2. Research Institute of Electronics, Shizuoka University, Japan

Session Chairs: KIGUCHI, Takanori, Tohoku Univ.

13:30

(28-A1-S17-05) Epitaxial growth of anti-perovskite Mn_3CuN thin films by Dynamic Aurora PLD (Invited)

KAWAGUCHI, Takahiko*1; SUZUKI, Jumpei1; SHIRAI, Tomoharu1; SAKAMOTO, Naonori1,2; SUZUKI, Hisao1,2; WAKIYA, Naoki1,2
1. Graduate School of Integrated Science and Technology, Shizuoka University, Japan
2. Research Institute of Electronics, Shizuoka University, Japan

14:00

(28-A1-S17-06) Room-temperature epitaxy and optoelectronic properties of heavily doped NiO thin films

MATSUDA, Akifumi*1; SEO, Okkyun2; SAKATA, Osami2; KANEKO, Satoru3,1; YOSHIMOTO, Mamoru1
1. Tokyo Institute of Technology, Japan
2. National Institute for Materials Science, Japan
3. Kanagawa Institute of Industrial Science and Technology, Japan

Session Chairs: SHIRAISHI, Takahisa, Tohoku Univ.

14:15

(28-A1-S17-07) Spontaneous Phase Separation in Composite Thin Films of Strontium Titanate and Ferrites by Dynamic Aurora PLD

TAKASHIMA, Keisuke*1; SAKAMOTO, Naonori1; KIGUCHI, Takanori2; KAWAGUCHI, Takahiko1; SHINOZAKI, Kazuo3; SUZUKI, Hisao1; WAKIYA, Naoki1
1. Department of Electronics and Materials Science, Shizuoka U., Japan
2. Institute for Materials and Research, Tohoku U., Japan
3. School of Materials and Chemical Technology, Tokyo Tech., Japan

14:30

(28-A1-S17-08) Structure and Magneto-dielectric Properties in Co-F-C Nanocomposites

CAO, Yang*1; KOBAYASHI, Nobukiyo2; OHNUMA, Shigehiro1,2; MASUMOTO, Hiroshi1
1. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan
2. Research Institute for Electromagnetic Materials, Japan

14:45

(28-A1-S17-09) Fabrication of Crystalline Ceria Films at 60° C by Gas-assisted Liquid Phase Deposition and Their Resistive Switching Behavior

KUBOTA, Yuta*1; FURUKAWA, Tetsuya1; MATSUSHITA, Nobuhiro1
1. Tokyo Institute of Technology, Japan

(15:00) Coffee Break

Session Chairs: YAMAGUCHI, Syuhei, Ehime Univ.

15:15

(28-A1-S17-10) α-Fe2O3 and CuO nanosheets fabricated by ionic-layer-epitaxy

HAYASHI, Masaki*1; KUBOTA, Yuta1; MATSUSHITA, Nobuhiro1
1. Tokyo Institute of Technology, Japan

15:30

(28-A1-S17-11) Nanosheets accumulated CuO films fabricated by one-step solution process at high seed

NITTA, Ryosuke*1; KUBOTA, Yuta1; MATSUSHITA, Nobuhiro1
1. Tokyo Institute of Technology, Japan

Session Chairs: ARAI, Takashi, National Institute of Technology, Numazu college

15:45

(28-A1-S17-12) Ruthenium perovskite at the metal-insulator boundary as an oxygen evolution catalyst

HIRAI, Shigeto*1; OHNO, Tomoya1; UEMURA, Ren1; MARUYAMA, Takahiro1; FURUNAKA, Masaya1; FUKUNAGA, Ryo2; SUZUKI, Hisao3; MATSUDA, Takeshi1; YAGI, Shunsuke2
1. Kitami Institute of Technology, Japan
2. Institute of Industrial Science, The University of Tokyo, Japan
3. Research Institute of Electronics, Shizuoka University, Japan

16:00

(28-A1-S17-13) Hydrogen adsorption and desorption characteristics of calcium carbonate derived from pearl oyster

LI, Heng*1; KOMATSU, Keiji1; NAKAMURA, Atsushi1,2; ITO, Osamu2; NAMBU, Keiki3; SAITOH, Hidetoshi1
1. Department of Materials Science and Technology, Nagaoka Univ. Tech., Japan
2. Chubu Chelest Co., Ltd., Japan
3. ACCHE Corporation, Japan

16:15

(28-A1-S17-14) Local Analysis of high Li ion Conductive Solid Electrolyte Composite Film using Atomic Force Microscopy

NAKATA, Daisuke*1; HOSHINO, Yuki1; PADARTI, Jeevan Kumar2; KAWAGUCHI, Takahiko1; WAKIYA, Naoki2; SUZUKI, Hisao2; SAKAMOTO, Naonori2
1. Graduate School of Engineering, Shizuoka University, Japan
2. Research Institute of Electronics, Shizuoka University, Japan

(16:30) Coffee Break

Session Chairs: SAKAMOTO, Naonori, Shizuoka Univ.

16:45

(28-A1-S17-15) Processing of superconducting joint for $GdBa_2Cu_3O_y$ coated conductors (Invited)

TERANISHI, Ryo*1; MIYAJIMA, Tomohiro1; YASUYAMA, Syotaro1; SATO, Yukio1; KANEKO, Kenji1; PETRYKIN, Valery2; LEE, Sergey2; AWAJI, Satoshi3; MATSUMOTO, Akiyoshi4; INOUE, Masayoshi5
1. Kyushu University, Japan
2. SuperOx Japan LLC, Japan
3. Tohoku University, Japan
4. National Institute for Materials Science, Japan
5. Fukuoka Institute of Technology, Japan

Session Chairs: MATSUDA, Akifumi, Tokyo Institute of Technology

17:15

(28-A1-S17-16) Epitaxial Growth of Nd Stabilized Zirconia Thin Films on Si Substrate

JHANSI LAKSHMI, SREERAMA*1; HAMADA, EIJI2; KAWAGUCHI, TAKAHIKO2; SAKAMATO, NAONORI2,3; SHINOZAKI, KAZUO4; SUZUKI, HISAO1,2,3; WAKIYA, NAOKI1,2,3
1. Graduate School of Science and Technology, Shizuoka University, Japan
2. Department of Electronics and Materials Science, Shizuoka University, Japan
3. Research Institute of Electronics, Shizuoka University, Japan
4. School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan

17:30

(28-A1-S17-17) RHEED Observation on Phase Separation in Sr-Ti-O Epitaxial Thin Film by Dynamic Aurora PLD

YOSHIDA, Mayu*1; KAWAGUCHI, Takahiko1; SAKAMOTO, Naonori1; SHINOZAKI, Kazuo2; SUZUKI, Hisao1; WAKIYA, Naoki1

1. Shizuoka U., Japan
2. Tokyo Tech., Japan

17:45

(28-A1-S17-18) Nanodomain Structure of Ferroelectric HfO_2-Based Epitaxial Thin Films

KIGUCHI, Takanori[*1]; SHIRAISHI, Takahisa[1]; MIMURA, Takanori[2]; SHIMIZU, Takao[2]; FUNAKUBO, Hiroshi[2]; KONNO, Toyohiko J.[1]
1. Tohoku University, Japan
2. Tokyo Institute of Technology, Japan

■October 28 (Mon) (Room B4) ■

19:Mixed Anion Compounds for Novel Functionalities

Mixed oxyfluorides

Session Chairs: POEPPELMEIER, Kenneth, Northwerstern University

10:45

(28-B4-S19-01) Structure and Property Tuning of Fluoride Oxyhydrides (Keynote)

KAGEYAMA, Hiroshi[*1]
1. Kyoto University, Japan

11:15

(28-B4-S19-02) Negative thermal expansion in electron doped $PbVO_{3-x}F_x$ (Invited)

OGATA, Takahiro[1]; AZUMA, Masaki[*1,2]; YAMAMOTO, Hajime[3]; OKA, Kengo[4]; SAKAI, Yuki[2]
1. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan
3. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
4. Department of Applied Chemistry, Faculty of Science and Engineering, Kindai University, Japan

11:45

(28-B4-S19-03) Fabrication and electronic states of $Sr2IrO_{4-x}F_{2x}$ thin films by topotactic fluorination

MARUYAMA, Takahiro[*1]; CHIKAMATSU, Akira[1]; KATAYAMA, Tsukasa[1]; KURAMOCHI, Kenta[2,3]; OGINO, Hiraku[3]; KITAMURA, Miho[4]; HORIBA, Koji[4]; KUMIGASHIRA, Hiroshi[4,5]; HASEGAWA, Tetsuya[1]
1. Department of Chemistry, The University of Tokyo, Japan
2. Department of Physics, Tokyo University of Science, Japan
3. National Institute of Advanced Industrial Science and Technology, Japan
4. Institute of Materials Structure Science, KEK, Japan
5. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

Mixed anion perovskites

Session Chairs: NEILSON, James, Colorado State University

13:30

(28-B4-S19-04) Influence of polyanions on the magneto-dieletric properties of iron perovskite type oxides

BREARD, Yohann[*1]; GONANO, Bruno[1]; MARIK, Sourav[1]; VEILLON, Fabien[1]
1. Crismat Laboratory - University of Caen Normandy, France

13:45

(28-B4-S19-05) Spark Plasma Sintering of Dielectric $BaTaO_2N$ Using Molten $BaCN_2$ Additive

HOSONO, Akira[*1]; INOGUCHI, Masashi[2]; MASUBUCHI, Yuji[3]; MURAYAMA, Koji[2]; IHA, Michiaki[2]; HIGUCHI, Mikio[3]; KIKKAWA, Shinichi[3]
1. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
2. Murata Manufacturing Co., Ltd., Japan
3. Faculty of Engineering, Hokkaido University, Japan

14:00

(28-B4-S19-06) Preparation and dielectric characterization of $Sr_{1+x}TaO_{2+y}N_{1-z}$ polycrystalline thin film

YAMAZAKI, Kumiko[*1]; SHIBAHARA, Takeshi[1]; UMEDA, Yuji[1]
1. Technology & Intellectual Property HQ, TDK Corporation, Japan

Session Chairs: YAMAMOTO, Takafumi, Tokyo Institute of Techonology

14:15

(28-B4-S19-07) Synthesis and Physical Properties of Carrier-doped Layered Perovskite $Ca_3Ti_2O_7$

KISHIMOTO, Kazuhisa[*1]; AKAMATSU, Hirofumi[1]; HASEGAWA, George[1]; HAYASHI, Katsuro[1]
1. Kyushu University, Japan

14:30

(28-B4-S19-08) Anion-Lattice Engineering in Chromium Oxide Perovskites

TSUJIMOTO, Yoshihiro[*1]
1. National Institute for Materials Science, Japan

(14:45) Coffee Break

Novel synthetic strategy

Session Chairs: KAGEYAMA, Hiroshi, Kyoto University

15:00

(28-B4-S19-09) Toward "Chemical GPS": Using Computers to Learn from Dark Reactions (Keynote)

POEPPELMEIER, Kenneth[*1]; NISBET, Matthew[1]; PENDLETON, Ian[2]; NORQUIST, Alex[2]; NOLIS, Gene[3]; CABANA, Jordi[3]
1. Northwestern University, USA
2. Haverford College, USA
3. University of Illinois at Chicago, USA

15:30

(28-B4-S19-10) Enabling Prescriptive Synthesis of Metastable Ternary Oxides with Mixed Anions (Invited)

NEILSON, James[*1]
1. Colorado State University, USA

16:00

(28-B4-S19-11) Topochemical Synthesis and Structural Analysis of Lithium Niobate-Type Fluorides

KITAKADO, Masahiro[*1]; AKAMATSU, Hirofumi[1]; HASEGAWA, George[1]; HAYASHI, Katsuro[1]
1. Department of Applied Chemistry, Graduate School of Engineering, Kyushu University, Japan

(16:15) Coffee Break

Electrides and hydrides

Session Chairs: AZUMA, Masaki, Tokyo Institute of Technology

16:30

(28-B4-S19-12) Discovery of diverse two-dimensional electrides and their physical and chemical properties for emergent applications (Invited)

KIM, SungWng[*1]
1. Department of Energy Science, Sungkyunkwan University, Korea

17:00

(28-B4-S19-13) $^1H/^2H$ NMR of Hydride Ions in Oxyhydrides

NODA, Yasuto[*1]; YAMAMOTO, Takafumi[2,5]; KOBAYASHI, Genki[3]; HAYASHI, Katsuro[4]; KAGEYAMA, Hiroshi[5]
1. Division of Chemistry, Kyoto University, Japan
2. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan
3. Research Center of Integrative Molecular Systems, Institute for Molecular Science, Japan
4. Department of Applied Chemistry, Kyushu University, Japan
5. Department of Energy and Hydrocarbon Chemistry, Kyoto University, Japan

17:15

(28-B4-S19-14) Controlling the local structure of transition metal oxyhydrides

YAMAMOTO, Takafumi[*1]; KAGEYAMA, Hiroshi[2]
1. Tokyo Institute of Technology, Japan
2. Kyoto University, Japan

Session Chairs: KIM, Sung-Wng, Sungkyunkwan University

17:30

(28-B4-S19-15) Site Selectivity of Hydride Ions in Hexagonal $BaVO_{3-x}H_x$: A First-Principles Analysis

SHITARA, Kazuki[*1,2,3]; YAMAMOTO, Takafumi[4]; KAGEYAMA, Hiroshi[5]; MORIWAKE, Hiroki[2,3]; KUWABARA, Akihide[2,3]
1. Joining and Welding Research Institute, Osaka University, Japan
2. Research and Service Division of Materials Data and Integrated System, National Institute for Materials Science, Japan
3. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
4. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan
5. Graduate School of Engineering, Kyoto University, Japan

17:45

(28-B4-S19-16) First Principles Calculations of Anion Configurations in Oxyhydride Ba_2ScHO_3

KUWABARA, Akihide[*1]; TAKEIRI, Fumitaka[2,3]; WATANABE, Akihiro[2,4]; NAWAZ, Haq[2,3]; AYU, Nur Ika Puji[5]; YONEMURA, Masao[5]; KANNO, Ryoji[6]; KOBAYASHI, Genki[2,3]
1. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
2. Department of Materials Molecular Science, Institute for Molecular Science, Japan
3. SOKENDAI (The Graduate University for Advanced Studies), Japan
4. Department of Electronic Chemistry, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Japan
5. Neutron Science Laboratory (KENS), Institute of Materials Structure Science, High Energy Accelerator Research Organization (KEK), Japan
6. All-Solid-State Battery Unit, Institute of Innovative Research, Tokyo Institute of Technology

■October 28 (Mon) (Room C2) ■

22:Layered Double Hydroxides: Science and Design of Binding Field with Charged Layers

Opening

Session Chairs: TERAMURA, Kentaro, Kyoto University

11:15

(28-C2-S22-01) Layered Double Hydroxides: Science and Design of Binding Field with Charged Layers (Keynote)

TADANAGA, Kiyoharu[*1]
1. Hokkaido University, Japan

11:30

(28-C2-S22-02) Ion Conducting and Electrocatalytic Properties of LDH Nanosheets (Invited)

SUN, Pengzhan[1,2]; CHEN, Fashen[1,3]; MA, Wei[1,3]; ZHOU, Wei[1,4]; MA, Renzhi[*1]; SASAKI, Takayoshi[1]
1. National Institute for Materials Science, Japan
2. University of Manchester, UK
3. Central South University, China
4. Tianjin University, China

Basic properties and applications

Session Chairs: TADANAGA, Kiyoharu, Hokkaido University

13:30

(28-C2-S22-03) Layered Double Hydroxide Nanocluster for the Development of High-Resolution X-ray μ-CT imaging (Invited)

TOKUDOME, Yasuaki[*1]
1. Osaka Prefecture University, Japan

14:00

(28-C2-S22-04) Nitrate Selectivity of Layered Double Hydroxide Consisting of Ni and Al

SASAI, Ryo[*1]; SATO, Hiroaki[1]; NII, Eisaku[1]; SUGATA, Mako[1]; NAKAYASHIKI, Yu-to[1]; FUJIMURA, Takuya[1]; OITA, Naoto[2]; FUJII, Yasuhiro[3]; KAWAGUCHI, Shogo[4]; MATSUOKA, Yoshiki[5]; HOASHI, Hirokazu[5]; MORIYOSHI, Chikako[5]
1. Shimane University, Japan
2. Aoyama Gakuin University, Japan
3. Ritsumeikan University, Japan
4. JASRI, Japan
5. Hiroshima University, Japan

14:15

(28-C2-S22-05) Studies on electrochromism of NiAl layered double hydroxide thin films (Invited)

PREVOT, Vanessa[*1]; KOILRAJ, Paulmanickam[1]; MOUSTY, Christine[1]; TAKEMOTO, Masanori[2]; TAKAHASHI, Masahide[2]; TOKUDOME, Yasuaki[2]
1. Université Clermont Auvergne, CNRS, Sigma-Clermont, Institut de Chimie de Clermont-Ferrand (ICCF), France
2. Department of Materials Science, Graduate School of Engineering, Osaka Prefecture University, Japan

14:45

(28-C2-S22-06) Study on application of Mg-based layered hydroxide to chemical heat storage material

YAMASHITA, Seiji[*1]; WADA, Kazusa[1]; KUBOTA, Mitsuhiro[2]; KITA, Hideki[2]
1. Nagoya University, Graduate School of Engineering, Department of Materials Process Engineering, Japan
2. Nagoya University, Graduate School of Engineering, Department of Chemical System Engineering, Japan

15:00

(28-C2-S22-07) Control on the characteristics of hydrotalcite (Invited)

IWAMOTO, Yoshihito[*1]
1. Kyowa Chemical Industry Co., Ltd., Japan

(15:15) Coffee Break

Catalytic Application

Session Chairs: OH, Jae-Min, Dongguk University-Seoul

15:30

(28-C2-S22-08) Enhancement of CO Evolution by Layered Double Hydroxide CO_2 Capture and Storage Materials for Photocatalytic Conversion of CO_2 by H_2O as an Electron Donor

TERAMURA, Kentaro[*1,2]; HASEGAWA, Yudai[1]; IGUCHI, Shoji[1]; ASAKURA, Hiroyuki[1,2]; HOSOKAWA, Saburo[1,2]; TANAKA, Tsunehiro[1,2]
1. Department of Molecular Engineering, Graduate School of Engineering, Kyoto University, Japan
2. Element Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University, Japan

15:45

(28-C2-S22-09) Hybridization of Metal Nanoparticle (Ag, Au, Pt, Pd) into ZnAl LDH and its Surface Plasmon Effect toward Photocatalyst Phenol Degradation

RIZKA LESTARI, Putri[*1]; TAKEI, Takahiro[1]; SAYAKA, Yanagida[1]; KUMADA, Nobuhiro[1]
1. Center for Crystal Science and Technology, University of Yamanashi, Japan

16:00

(28-C2-S22-10) Nanocomposite of octahedral molybdenum cluster-intercalated layer double hydroxide for catalyst application

NGUYEN, Thi Kim Ngan[*1,2]; MATSUI, Yoshio[1,2]; SHIRAHATA, Naoto[4]; DUMAIT, Noee[3]; CORDIER, Stephane[3]; GRASSET, Fabien[1,2]; UCHIKOSHI, Tetsuo[1,2]
1. Research Center for Functional Materials, NIMS, Japan
2. CNRS-Saint-Gobain-NIMS, UMI3629, NIMS, Japan
3. University of Rennes, Centre National de la Recherche Scientifique (CNRS, France), Institut des Sciences Chimiques de Rennes (ISCR), France

4. Research Center for Materials Nanoarchitectonics (MANA), NIMS, Japan

16:15

(28-C2-S22-11) Creation of Active Cu(0) Species Derived from Cu-Al Layered Double Hydroxides for Catalytic Transfer Hydrogenation of Furfural to Furfuryl Alcohol

KURNIAWAN, Enggah[*1]; HARA, Takayoshi[1]; PERMANA, Yessi[2]; ICHIKUNI, Nobuyuki[1]; SHIMAZU, Shogo[1]
1. Department of Applied Chemistry and Biotechnology, Graduate School of Science and Engineering, Chiba University, Japan
2. Faculty of Mathematics and Natural Science, Bandung Institute of Technology Bandung, Indonesia

Biological application

Session Chairs: TOKUDOME, Yasuaki, Osaka Prefecture University

16:30

(28-C2-S22-12) Positively charged layered double hydroxide in its biological behavior (Invited)

OH, Jae-Min[*1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Republic of Korea

17:00

(28-C2-S22-13) Bio-medical application of layered double hydroxide monolith synthesized by low temperature spark plasma sintering method

KIM, Hyoung-Jun[*1]; JEUNG, Do-Gak[1]; CAZALBOU, Sophie[2]; DROUET, Christophe[3]; OH, Jae-Min[1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Korea
2. Université de Toulouse, INPT, Laboratoire de Génie Chimique, France
3. CIRIMAT Institute, University of Toulouse, France

17:15

(28-C2-S22-14) Encapsulation of soybean extract into layered double hydroxide: loading and release behavior depending on encapsulation route

JEUNG, Do-Gak[*1]; KIM, Hyoung-Jun[1]; OH, Jae-Min[1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Korea

(17:30) Closing remarks

■October 28 (Mon) (Room B7) ■

27:Synthesis and Processing of Materials using Electric Currents and Pressures

SPS/ECAS

Session Chairs: GOTO, Takashi, Tohoku University

11:00

(28-B7-S27-01) Potential of Spark Plasma Sintering (SPS) Method for Manufacturing on Industrial Products (Invited)

TOKITA, Masao[*1]
1. NJS Co.,Ltd. SPS R&D Center, Japan

11:30

(28-B7-S27-02) Integration of dissimilar nanoscale phases: Leveraging kinetics to densify functional nano-composites (Invited)

VOLODCHENKOV, A.[1]; CHAN, K. T.[1]; KODERA, Y.[1]; GARAY, J. E.[*1]
1. UCSD, USA

Session Chairs: GARAY, Javier E., UCSD

13:30

(28-B7-S27-03) Spark Plasma Sintering of zirconia based ceramics : from the study of mechanisms to the control of their microstructure and mechanical properties. (Invited)

ESTOURNES, Claude[*1]; FLAUREAU, Andreas[1]; FREGEAC, Arnaud[1,2]; CHEVALLIER, Geoffoy[1]; WEIBEL, Alicia[1]; ANSART, Florence[1]; SELEZNEFF, Serge[2]; CHUNG, U-Chan[3]; JOSSE, Michael[3]; SUCHOMEL, Matthew[3]; MAJIMEL, Jerome[3]; GOGLIO, Graziella[3]; ELISSALDE, Catherine[3]
1. CIRIMAT, Université de Toulouse, CNRS, Université Toulouse 3 - Paul Sabatier, France
2. SAFRAN AIRCRAFT ENGINES, France
3. ICMCB, CNRS Université Bordeaux, France

14:00

(28-B7-S27-04) Fabrication of advanced ceramics by SPS (Invited)

SAKKA, Yoshio[*1]; GRASSO, Salvatore[2]
1. National Institute for Materials Science, Japan
2. Southwest Jiaotong University, China

14:30

(28-B7-S27-05) Microstructure Developments in Transparent Oxide Ceramics Prepared by Pulsed Electric Current Sintering Technique (Invited)

NANKO, Makoto[*1]; NGYEN, Huu Hien[1]; DANG, Quoc Khanh[1,2]
1. Nagaoka University of Technology, Japan
2. Hanoi University of Science and Technology, Viet Nam

(15:00) Coffee Break

Session Chairs: SAKKA, Yoshio, MIMS

15:15

(28-B7-S27-06) Combination of SHS and SPS to obtain UHTCs (Invited)

ORRU', Roberto[1,2]; TALLARITA, Giovanna[1,2]; LICHERI, Roberta[1,2]; CAO, Giacomo[*1,2]
1. Dipartimento di Ingegneria Meccanica, Chimica e dei Materiali, Italy
2. Unità di Ricerca del Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM), Italy

15:45

(28-B7-S27-07) Spark Plasma Sintering of SiC Continuous Fiber Reinforced Composite (Invited)

OHYANAGI, Manshi[*1]; TABATA, Shohei[1]; SHIRAI, Kenshiro[1]; IMAI, Takahito[1]
1. Ryukoku University, Japan

16:15

(28-B7-S27-08) Pressure-assisted densification of nanocrystalline MgO- Effects of water absorption and grain size

DEWITT, D. D.[1]; KODERA, Y.[*1]; GARAY, J. E.[1]
1. UCSD, USA

16:30

(28-B7-S27-09) Optimization of the mold design and its effect on the sample temperature gradient during high temperature creep testing by the Spark Plasma Sintering (SPS) system

B. SWEIDAN, Faris[*1]; RYU, Ho Jin[1]
1. Department of Nuclear and Quantum Engineering, KAIST, Yuseong-gu, Daejeon, Republic of Korea

Session Chairs: OHYANAGI, Manshi, Ryukoku University

16:45

(28-B7-S27-10) Fabrication of Diamond-based Composite by Spark Plasma Sintering (Invited)

GOTO, Takashi[*1,2]; KATSUI, Hirokazu[2]; KITIWAN, Mettya[2]
1. Nagaoka University of Technology, Japan
2. Tohoku University, Japan

17:15

(28-B7-S27-11) Fabrication of Spark Plasma Sintered Body using Recycled Fine Aggregate Powder

ABASS, Mohammed[*1]; KANDA, Yasuyuki[2]
1. Graduate School of Engineering and Science University of the Ryukyus, Japan
2. Mechanical engineering program, School of engineering, Faculty of engineering, University of the Ryukyus, Japan

17:30

(28-B7-S27-12) High entropy B2(HfMoTaTi)C and

SiC ceramic composite
AKHTAR, Farid[*1]; ZHANG, Hanzhu[1]; FENG, Peizhong[3]; HAN, Gang[2]; HEDMAN, Daniel[1]
1. Division of Materials Science, Luleå University of Technology, Sweden
2. School of Materials Science and Engineering, University of Science and Technology Beijing, China
3. School of Materials Science and Engineering, China University of Mining and Technology, China

17:45
(28-B7-S27-13) Flash sintering of bismuth telluride thermoelectric compound
MIKAMI, Masashi[*1]; KINEMUCHI, Yoshiaki[1]; KUBO, Kazuya[2]; UCHIYAMA, Naoki[2]; MIYAZAKI, Hidetoshi[3]; NISHINO, Yoichi[3]
1. National Institute of Advanced Industrial Science and Technology, AIST, Japan
2. Atsumitec Co., Ltd., Japan
3. Nagoya Institute of Technology, Japan

■October 28 (Mon) (Room B1A)■

31:Porous Ceramics: From Innovative Processing to Advanced Applications and Functionalities

Process innovation of porous ceramics I

Session Chairs: FUKUSHIMA, Manabu, AIST

11:00
(28-B1A-S31-01) High-porosity geopolymers by Direct Foaming and Additive Manufacturing (Keynote)
COLOMBO, Paolo[*1]; BAI, Chengying[1,2]; FRANCHIN, Giorgia[1]; SCANFERLA, Paolo[1]; FUSS BOTTI, Renata[1]; GOULART DE OLIVEIRA, Karine[1]
1. University of Padova, Italy
2. Harbin Engineering University, China

11:30
(28-B1A-S31-02) Effect of a ceramic powder and thermal foaming condition on the porous structures of foamed bodies via direct-foaming process
SHIMAMURA, Akihiro[*1]; FUKUSHIMA, Manabu[1]; HOTTA, Mikinori[1]; KONDO, Naoki[1]
1. National Institute of Advanced Industrial Science and Technology, Japan

11:45
(28-B1A-S31-03) Study on the Change of Crystal Structure of PdO-CeO_2 Supported on chi-Al_2O_3 for the Methane Combustion
MURAI, Kei-ichiro[*1]; LI, Wei Bing[2]; KANEZAKI, Eiji[2]; MORIGA, Toshihiro[1]; NAKABAYASHI, Ichiro[2]
1. Graduate School of Technology, Industrial and Social Sciences, Tokushima University, Japan
2. Faculty of Engineering, the University of Tokushima, Japan

Engineering properties and applications of porous ceramics I

Session Chairs: COLOMBO, Paolo, University of Padova

13:30
(28-B1A-S31-04) Porous ceramics - from processing to novel applications (Keynote)
FEY, Tobias[*1,2]
1. Institute of Glass and Ceramics, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
2. Frontier Research Institute for Materials Science, Nagoya Institute of Technology, Japan

14:00
(28-B1A-S31-05) Si3N4-SiC Filters for Water Recovery from Waste Liquid (Invited)
LU, Yanxia Ann[*1]
1. Corning, Inc., USA

14:30
(28-B1A-S31-06) Structurally Controlled Porous Ceramic Filters via Gel-Casting Process for Environmental Purification
XIN, Yunzi[*1]; ASAI, Daisuke[2]; NAKAGAWA, Sohei[1,2]; NISHIKAWA, Harumitsu[1]; SHIRAI, Takashi[1,2]
1. Advanced Ceramics Research Center, Nagoya Istitute of Technology, Japan
2. Department of Life Science and Applied Chemistry, Graduate School of Engineering, Nagoya Institute of Technology, Japan

14:45
(28-B1A-S31-07) Fabrication of asymmetric silicon carbide membranes for microfiltration
LI, Yajie[*1,2]; WU, Haibo[1,3]; HUANG, Zhengren[1]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. School of Physical Science and Technology, ShanghaiTech University, China
3. Suzhou Research Center, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

(15:00) Coffee Break

Engineering properties and applications of porous ceramics II

Session Chairs: ZENG, Yu-Ping, Shanghai Institute of Ceramics

15:15
(28-B1A-S31-08) Fiber reinforced highly porous γ-$Y_2Si_2O_7$ ceramic fabricated by foam-gelcasting-freeze drying method (Invited)
WU, Zhen[*1]; WANG, Jingyang[1]
1. Advanced Ceramics and Composites Division, Shenyang National Laboratory for Materials Science, Institute of Metal Research, CAS, China

Session Chairs: ZENG, Yu-Ping, Shanghai Institute of Ceramics

15:45
(28-B1A-S31-09) Thermal conductivity and mechanical property prediction using three-dimensional microstructures of gelation freezing derived cellular ceramics
FUKUSHIMA, Manabu[*1]; HYUGA, Hideki[1]; YOSHIZAWA, Yu-ichi[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

16:00
(28-B1A-S31-10) Development of Thermal Insulating Materials with Low Thermal Emissivity and High-Temperature Stability
AKAMINE, Shuko[*1]
1. CoorsTek KK, Japan

Process innovation of porous ceramics II

Session Chairs: FEY, Tobias, University of Erlangen-Nurnberg

16:15
(28-B1A-S31-11) Porous Si3N4 ceramics prepared via SHS (Invited)
ZENG, Yu-Ping[*1]; ZHANG, Ye[2]
1. Shanghai Institute of Ceramics ,Chinese Academy of Sciences, China
2. Shanghai Institute of Ceramics ,Chinese Academy of Sciences, China

16:45
(28-B1A-S31-12) Synthesis and mechanical properties of highly porous ultrafine-grain Si_3N_4 ceramics via a novel carbothermal reduction-nitridation combined with liquid phase sintering (Invited)
ZHI, Qiang[1]; WANG, Bo[1]; DENG, Yu-Chen[1]; ZHANG, Nan-Long[1]; YANG, Jian-Feng[*1]
1. State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China

17:15
(28-B1A-S31-13) High Temperature fracture behavior of Porous Si3N4 ceramics
YAO, Dongxu[*1]; ZENG, Yu-Ping[1]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

17:30
(28-B1A-S31-14) Porous Ceramics for Energy and Environmental Applications
KONSTANDOPOULOS, Athanasios[*1]; ZACHAROPOULOU, Vassiliki[1]; SYRIGOU, Maria[1]; METALLINOU, Rozina[1]; DIMITRAKIS, Dimitrios[1]; OIKONOMIDOU, Chrysa[1]; VLACHOS, Nicholas[1]
1. Centre for Research and Technology-Hellas (CERTH), Greece

■October 28 (Mon) (Room B2) ■

32:Crystalline Materials for Electrical, Optical and Medical Applications

New direction

Session Chairs: IMANAKA, Yoshihiko, Fujitsu Laboratories Ltd.

11:15
(28-B2-S32-01) Ab Initio Approach to Localization of Conduction Band Caused by Cation Disorder in Crystalline IGZO
KANAGAWA, Tomosato[*1]; TAKAHASHI, Masahiro[1]; NAKAYAMA, Tomonori[1]; BABA, Haruyuki[1]; OKUNO, Naoki[1]; MIZUKAMI, Shota[1]; YAMAZAKI, Shunpei[1]
1. Semiconductor Energy Laboratory Co., Ltd., Japan

11:45
(28-B2-S32-03) Synthesis of $Mo_{1-x}Nb_xS_2$ thin films by chemical vapor deposition with a separate-flow system
YANASE, Takashi[*1]; UEHARA, Fumiya[2]; WATANABE, Sho[2]; NAGAHAMA, Taro[1]; SHIMADA, Toshihiro[1]
1. Division of Applied Chemistry, Faculty of Engineering, Hokkaido University, Japan
2. Graduate School of Chemical Sciences and Engineering Hokkaido University, Japan

Optical material I

Session Chairs: TAKEDA, Hiroaki, Tokyo Institute of Technology

13:30
(28-B2-S32-04) Low Temperature Growth of Epitaxial and Flexible Oxide Thin Films by Photo Assisted Metal Organic Deposition (ELAMOD) (Invited)
TSUCHIYA, Tetsuo[*1]; UZAWA, Yuko[1]; NAKAJIMA, Tomohiko[1]; YAMAGUCHI, Iwao[1]; CHRISEY, Douglas. B.[2]
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Department of Physics and Engineering Physics, Tulane University, USA

14:00
(28-B2-S32-05) Photocatalyst Anode using Nanoparticle Deposition for Artificial Photosynthesis System and New Material Development (Invited)
IMANAKA, Yoshihiko[*1]
1. Fujitsu Laboratories Ltd., Japan

14:30
(28-B2-S32-06) Piezoluminescence Crystalline Material And Their Applications (Invited)
XU, Chao-Nan[*1,2]; WANG, Ruiping[1]; NISHIBORI, Maiko[2]; ZHENG, Xu-Guang[3]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Department of Molecular and Material Sciences, Kyushu University, Japan
3. Department of Physics, Saga University, Japan

15:00
(28-B2-S32-07) Fabrication and Photoelectric Properties of ZnMgO:Eu/ZnO/sapphire Heterostructure
XU, Xiaoke[*1]; ZHANG, Xiang[1]; LIU, Qian[1]; ZHOU, Zhenzhen[1]; ZHANG, Ying[1]
1. State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

(15:15) Coffee Break

Dielectric and piezoelectric

Session Chairs: TSUCHIYA, Tetsuo, AIST

15:30
(28-B2-S32-08) Potential of Melilite-type Piezoelectric Crystals for High-Temperature Applications (Invited)
TAKEDA, Hiroaki[*1]; KUSAKABE, Hiraku[1]; USUI, Haruki[1]; OHSIMA, Takuto[1]; HOSHINA, Takuya[1]; LEBBOU, Kheirreddine[2]; TSURUMI, Takaaki[1]
1. Tokyo Institute of Technology, Japan
2. Universite de Lyon, France

16:00
(28-B2-S32-09) Activation of Bone Cells by Piezoelectricity and Nanocrystals in Bone Matrix (Invited)
NAKAMURA, Miho[*1,2]; SALONEN, Jukka[1]; YAMASHITA, Kimihiro[3]
1. Institute of Biomedicine, Faculty of Medicine, University of Turku, Finland
2. Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan
3. Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan

16:30
(28-B2-S32-10) Fabrication of polymer-brush modified Ba-Ti oxide / poly(vinylidene fluoride) nanocomposites film (Invited)
NISHIBORI, Maiko[*1,2]; NOSUE, Kohei[1]; HAMADA, Ayumi[3]; KONISHI, Yuko[3]; TAKAHARA, Atsushi[3]
1. Interdisciplinary Graduate School of Engineering Science, Kyushu University, Japan
2. Faculty of Energy and Material Sciences, Kyushu University, Japan
3. Institute for Materials Chemistry and Engineering, Kyushu University, Japan

17:00
(28-B2-S32-11) Structural Phase Transition & Pyroelectric Response in PLZST Antiferroelectric Single Crystal (Invited)
LI, QIANG[*1]; ZHUO, FANGPING[1]; JI, YONGJIE[1]
1. Department of Chemistry, Tsinghua University, China

17:30
(28-B2-S32-12) Phase formation, stoichiometry and destabilization of ferroelectric order in $Na_{0.5}Bi_{0.5}TiO_3$ - 6 wt% $BaTiO_3$ ceramics (Invited)
KONIG, Jakob[1]; SUVOROV, Danilo[*1]
1. Jozef Stefan Institute, Slovenia

■October 28 (Mon) (Room B1B) ■

33:Multifunctional Coatings for Structural, Energy and Environmental Applications JFCA/ADCAL and Cross-sectoral Research cooperation of Ceramic Coating support Symposia

Coatings for Ceramic Matrix Composites (CMCs)

Session Chairs: MECHNICH, Peter, German Aerospace Center (DLR)

11:00

(28-B1B-S33-01) Development of environmental barrier coatings for non-oxide ceramic matrix composites (Invited)

KLEMM, Hagen[*1]; SCHOENFELD, Katrin[1]; GRONDE, Bernd[1]; KUNZ, Willy[1]
1. Fraunhofer IKTS Dresden, Germany

11:30

(28-B1B-S33-02) Multilayered Ytterbium Silicate Coatings on SiC fiber using Chemical Vapor Deposition for SiC Ceramic Matrix Composite

ITO, Akihiko[*1]; HARA, Tomohiro[1]; GOTO, Ken[2]
1. Graduate School of Environment and Information Sciences, Yokohama National University, Japan
2. Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan

11:45

(28-B1B-S33-03) Heat resistant oxide ceramic fiber coating for SiC/SiC

GOTO, Ken[*1]; ITO, Akihiko[2]; MATSUDA, Tetushi[3]
1. Institute of Space and Astronautical Science, JAXA, Japan
2. Yokohama National University, Japan
3. Japan Fine Ceramics Center, Japan

Kinetic Spray and Aerosol Deposition (AD) Processes

Session Chairs: MOOS, Ralf, University of Bayreuth

13:30

(28-B1B-S33-04) Correlation between mechanical property and plasma erosion resistance of ceramic coatings deposited by vacuum kinetic spraying (Invited)

LEE, Changhee[*1]
1. Kinetic Spray Coating Laboratory, Devision of Materials Science & Engineering, Hanyang University, Seoul, Republic of Korea

14:00

(28-B1B-S33-05) Cold Sprayed MAX-Phase Coatings for Oxidation Protection (Invited)

GAERTNER, Frank[*1]; GUTZMANN, Henning[1]; ELSENBERG, Andreas[1]; HOECHE, Daniel[2]; ANASORI, Babak[3]; KLASSEN, Thomas[1]; BARSOUM, Michel W.[3]
1. Helmut Schmidt University, Germany
2. Helmholtz-Zentrum Geesthacht GmbH, Germany
3. Drexel University, USA

14:15

(28-B1B-S33-06) Effect of Carrier Gas on Deposition Efficiency of Zirconia Films by Granule Spray in Vacuum

TUNGALAGTAMIR, Ochirkhuyag[1,2]; PARK, Dong-Soo[*1]; CHOI, Jong-Jin[1]; HAHN, Byung-Dong[1]; YOON, Woon-Ha[1]; KIM, Jongwoo[1]; HWANG, Geon-Tae[1]; MIN, Yuho[1]; PARK, Chan[2]
1. Korea Institute of Materials Science, Japan
2. Pukyong National University, Republic of Korea

14:30

(28-B1B-S33-07) Room Temperature Impact Consolidation and Application to Ceramic Coatings - Aerosol Deposition Method - (Invited)

AKEDO, Jun[*1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

15:00

(28-B1B-S33-08) Plasma-assisted Aerosol Deposition of Fine Ceramic Particles on Different Substrates at Room Temperature

SHAHIEN, Mohammed[*1]; SHINODA, Kentaro[1]; SUZUKI, Masato[2]; AKEDO, Jun[3]
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology, AIST, Japan
2. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology, AIST, Japan
3. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology, AIST, Japan

(15:15) Coffee Break

Materials Design for Thermal and Environmental Barrier Coatings (T/EBCs)

Session Chairs: KLEMM, Hagen, Fraunhofer IKTS

15:45

(28-B1B-S33-09) Slurry-based Protective Coatings for Oxide/Oxide Composites (Invited)

MECHNICH, Peter[*1]
1. German Aerospace Center (DLR), Germany

16:15

(28-B1B-S33-10) Effect of Oxygen Potential Gradient on Mass Transfer in Polycrystalline Oxides

KITAOKA, Satoshi[*1]; MATSUDAIRA, Tsuneaki[1]; WADA, Masashi[1]; KAWASHIMA, Naoki[1]; OGAWA, Takafumi[1]; TAKATA, Masasuke[1]; TAKEUCHI, Miyuki[2]
1. Japan Fine Ceramics Center, Japan
2. The University of Tokyo, Japan

16:30

(28-B1B-S33-11) Control of Oxygen Shielding Properties of Yb-Silicates at High Temperatures Using Discrete Changes of Chemical Potentials

WADA, Masashi[*1]; MATSUDAIRA, Tsuneaki[1]; YOKOI, Taishi[1]; YAMAGUCHI, Norio[1]; KAWASHIMA, Naoki[1]; OGAWA, Takafumi[1]; YOKOE, Daisaku[1]; KATO, Takeharu[1]; KITAOKA, Satoshi[1]; TAKATA, Masasuke[1]
1. Japan Fine Ceramics Center, Japan

16:45

(28-B1B-S33-12) On the Feasibility of Rare-earth Hafnates as Advanced Thermal/Environmental Barrier Coating (Invited)

ZHANG, Jie[*1]; HU, Wanpeng[1]; WANG, Jingyang[1]
1. Shenyang National Lab. for Materials Science,Institute of Metal Research, CAS, China

17:15

(28-B1B-S33-13) A Strategy for Lowering Thermal Conductivity of Heat Resistant Oxides Utilizing Nanodomain Structures

MATSUDAIRA, Tsuneaki[*1]; KAWASHIMA, Naoki[1]; OGAWA, Takafumi[1]; FISHER, Craig A. J.[1]; KATO, Takeharu[1]; YOKOE, Daisaku[1]; HABU, Yoichiro[2]; KITAOKA, Satoshi[1]
1. Japan Fine Ceramics Center, Japan
2. TOCALO Co. Ltd., Japan

17:30

(28-B1B-S33-14) Thermal Barrier Performance of RTa_3O_9 Coating Deposited by Atmospheric Plasma Spraying

HABU, Yoichiro[*1]; OHIDE, Yuhei[1]; TAKAGI, Kaito[1]; SHINDO, Ryota[1]; TANAKA, Makoto[2]; YOKOE, Daisaku[2]; KITAOKA, Satoshi[2]
1. TOCALO Co., Ltd., Japan
2. Japan Fine Ceramics Center, Japan

17:45

(28-B1B-S33-15) Relationship between Chemical Compositions and Crystal Structures of $Yb_{2+x}Ti_{2-x}O_{7-x/2}$

ASAI, Kenta[*1]; TANAKA, Makoto[2]; OGAWA, Takafumi[2]; KAWASHIMA, Naoki[2]; KITAOKA, Satoshi[2]; IZUMI, Fujio[2]; YOSHIDA, Michiyuki[1]; SAKURADA, Osamu[1]
1. Gifu University, Japan
2. Japan Fine Ceramics Center, Japan

■October 29 (Tue) (Room B3) ■

01:Crystalline and Amorphous Transparent Optical Materials and Photonic Technologies

Session Chairs: TANG, Dingyuan, Nanyang Technological University

10:15

(29-B3-S01-12) Exploiting microstructural freezing of nano-grained ceramics for a new class of near-IR laser gain medium (Invited)

MA, Ho Jin[1]; JUNG, Wook Ki[1]; KIM, Do Kyung[*1]
1. Korea Advanced Institute of Science and Technology (KAIST), Japan

10:30

(29-B3-S01-13) Fabrication of Infrared Transparent Ceramics by Spark-Plasma-Sintering (SPS) Method (Invited)

MORITA, Koji[*1]; LIU, Lihong[1]; SUZUKI, Thoru S[1]; KIM, Byung-Nam[1]
1. National Institute for Materials Science (NIMS), Japan

10:45

(29-B3-S01-14) Strategies to Strengthen Ceramics for Windows and Domes (Invited)

REIMANIS, Ivar[*1]
1. Colorado School of Mines, USA

11:15

(29-B3-S01-15) Bulk oxide single crystal growth from the melt without precious metal (Ir, Pt) crucible (Invited)

YOSHIKAWA, Akira[*1,2,3,4]
1. Institute for Material Research, Tohoku University, Japan
2. New Industry Creation Hatchery Center, Tohoku University, Japan
3. C&A corporation, Japan
4. EXA corporation, Japan

11:45

(29-B3-S01-16) Broadband NIR emission from transparent fluorosilicate glass-ceramics containing $Rb_2SiF_6:Ni^{2+}$ nanocrystals

MAO, Qianan[1,2]; CHEN, Jiejie[1,2]; LAN, Bijiao[1,2]; LV, Shichao[1,2]; FAN, Zhechen[1,2]; WU, Jinhao[1,2]; ZHOU, Shifeng[*1,2]
1. State Key Laboratory of Luminescent Materials and Devices, School of Materials Science and Engineering, South China University of Technology, China
2. Guangdong Provincial Key Laboratory of Fiber Laser Materials and Applied Techniques, Guangdong Engineering Technology Research and Development Center of Special Optical Fiber Materials and Devices, China

Session Chairs: KIM, Do Kyung, Korea Advanced Institute of Science and Technology

13:30

(29-B3-S01-17) Electrooptic and Magneto optic ceramics cy current activated pressure assisted (Invited)

DUPUY, A. D.[1]; MORALES, J. R.[1]; KODERA, Y.[1]; GARAY, J. E.[*1]
1. UCSD, USA

14:00

(29-B3-S01-18) Fabrication of transparent ceramics by magnetic-field assisted colloidal processing (Invited)

SUZUKI, Tohru[*1]
1. National Institute for Materials Science, Japan

14:15

(29-B3-S01-19) Transition metals doped optically active transparent $MgAl_2O_4$ ceramics

TALIMIAN, Ali[1]; POUCHLY, Vaclav[2]; MACA, Karel[2]; GALUSEK, Dusan[*1,3]
1. Centre for Functional and Surface Functionalised Glass, Alexander Dubcek University of Trencin, Slovakia
2. CEITEC BUT, Brno University of Technology, Czech Republic
3. CEITEC BUT, Brno University of Technology, Czech Republic
4. Joint Glass Centre of the IIC SAS, Slovakia

14:30

(29-B3-S01-20) Rare-earth doped sesquioxide transparent ceramics for solid-state laser applications (Invited)

TANG, Dingyuan[*1,2]; WANG, Jun[1,2]; YIN, Danlei[2,3]; MA, Jie[2]; LIU, Peng[2]; SHEN, Deyuan[2]; DONG, Zhili[3]
1. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
2. Jiangsu Key Laboratory of Advanced Laser Materials and Devices, School of Physics and Electronic Engineering, Jiangsu Normal University, China
3. School of Materials Science and Engineering, Nanyang Technological University, Singapore

14:45

(29-B3-S01-21) Enhanced 1.8 μ m photoluminescence in Tm-Bi co-doped germanate glass under blue light excitation and its temperature dependence

LIU, Chengzhen[*1]; RUAN, Jian[1,2]; ZHAO, Xiujian[1,2]
1. Wuhan University of Technology, China
2. Specialty Glass Engineering Technology Research Center of Hubei Province, China

15:00

(29-B3-S01-22) Study on preparation and properties of Li0.07Al2.76O3.64N0.36 transparent ceramics

CHEN, Qiangguo[1]; ZHEN, Kaiping[2]; ZONG, Xiao[3]; WANG, Hao[*1]
1. State Key Lab of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, China
2. State Key Lab of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, China
3. State Key Lab of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, China

■October 29 (Tue) (Room B5) ■

02:Solid Oxide Fuel Cells and Hydrogen Technologies

Cooperation ; Fuel Cell Development Information Center, National Institute of Advanced Industrial Science and Technology (AIST)

SOFC electrode III

Session Chairs: KAGOMIYA, Isao, Nagoya Institute of Technology

10:15

(29-B5-S02-15) Capture of Trace Airborne impurities and Mitigation of Electrode Poisoning in SOFC's (Invited)

SINGH, Prabhakar[*1]; HU, Boxun[1]; APHALE, Ashish[1]; HONG, Junsung[1]; HEO, Su Jeong[1]
1. University of Connecticut, USA

10:45

(29-B5-S02-16) Cr Poisoning mechanisms of $(La_{0.6}Sr_{0.4})_{0.95}(Co_{0.2}Fe_{0.8})O_{3-\delta}$ solid oxide fuel cell cathodes at the nanoscale: effects of Temperature and Polarization (Invited)

NI, Na[*1]; WANG, Chengcheng[2]; JIANG, Sanping[3]; SKINNER, Stephen[4]
1. Shanghai Jiao Tong University, China
2. Shen Zhen Polytechnic, China
3. Curtin University, Australia
4. Imperial College London, UK

SOFC modelling

Session Chairs: KAGOMIYA, Isao, Nagoya Institute of Technology

11:15

(29-B5-S02-17) Computational Design of Solid Oxide Fuel Cell Materials (Invited)

HAN, Jeong Woo[*1]

1. Pohang University of Science and Technology (POSTECH), Korea

11:45

(29-B5-S02-18) Interaction of O_2, CO_2, and H_2O with Perovskite Surfaces. Insights from the Theory.

STAYKOV, Aleksandar[*1]; ISHIHARA, Tatsumi[1,2]; KILNER, John[1,3]

1. International Institute for Carbon Neutral Energy Research, Kyushu University, Japan
2. Applied Chemistry Department, Kyushu University, Japan
3. Materials Science Department, Imperial College London, Japan

02:Intensive Session in Symposium 2: Proton Conducting Ceramics and Applications

PCC electrolyte I

Session Chairs: MATSUMOTO, Hiroshige, Kyushu University

13:30

(29-B5-S02-19) Protonic Ceramic Electrochemical Cells for Power Generation and Renewable Fuels Production (Invited)

O'HAYRE, Ryan[*1]; DUAN, Chuancheng[1]; ZHU, Linangzhu[1]; CADIGAN, Chris[1]; HUANG, Jake[1]; PAPAC, Meagan[1]; ZAKUTAYEV, Andriy[2]; ZHU, Huayang[3]; KARIKAYA, Canan[3]; BRAUN, Robert[3]; RICOTE, Sandrine[3]; KEE, Robert[3]; SULLIVAN, Neal[3]

1. Department of Metallurgical and Materials Engineering, Colorado School of Mines, USA
2. National Renewable Energy Laboratory, USA
3. Department of Mechanical Engineering, Colorado School of Mines, USA

14:00

(29-B5-S02-20) Effect of Electrode Polarization Resistance on Open-Circuit Voltage in Protonic Ceramic Fuel Cells (Invited)

SHIMADA, Hiroyuki[*1]; YAMAGUCHI, Toshiaki[1]; YAMAGUCHI, Yuki[1]; MIZUTANI, Yasunobu[1]; FUJISHIRO, Yoshinobu[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Session Chairs: OKUYAMA, Yuji, University of Miyazaki

14:30

(29-B5-S02-21) Development of Protonic Ceramic Fuel Cells using Yb-doped $BaZrO_3$ Electrolytes (Invited)

KUROHA, Tomohiro[*1,2]; YAMAUCHI, Kosuke[1]; GOTO, Takehito[1]; MIKAMI, Yuichi[1]; ASANO, Hiroshi[1]; TSUJI, Yoichiro[1]; SHIRAISHI, Seigo[1]; OKUYAMA, Yuji[2]

1. Technology Innovation Division, Panasonic Corporation, Japan
2. Department of Environmental Robotics, Faculty of Engineering, University of Miyazaki, Japan

15:00

(29-B5-S02-22) Electrochemical characteristics and chemical stability of p-SOFCs with bi-layered electrolyte (Invited)

SATO, Koki[*1]; IINUMA, Hiroki[1]; BABA, Yoshitaka[1]; MATSUZAKI, Yoshio[1,2]; TACHIKAWA, Yuya[2]; MATSUMOTO, Hiroshige[2]; TANIGUCHI, Shunsuke[2]; SASAKI, Kazunari[2]

1. Tokyo Gas Co.,Ltd., Japan
2. Kyushu University, Japan

15:30

(29-B5-S02-23) Control of electrical properties on transition metal oxide thin films via protonic-electronic coupling

TANAKA, Hidekazu[*1]; N. HATTORI, Azusa[1]; YAMANAKA, Takashi[1]; KAWAMOTO, Daiki[1]; HAYASHI, Keiichiro[1]

1. Institute of Scientific and Industrial Research, Osaka University, Japan

(15:45) Coffee Break

PCC electrode

Session Chairs: O'HAYER, Ryan, Colorado School of Mines

16:00

(29-B5-S02-24) Intermediate Temperature Steam Electrolysis Using Proton-Conducting Perovskites for Hydrogen Production (Invited)

MATSUMOTO, Hiroshige[*1]; LEONARD, Kwati[1]; LEE, Young-Sung[1]; FUJISAKI, Takaya[1]

1. International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan

16:30

(29-B5-S02-25) Performance and Reliability Improvement of Large-sized Protonic Ceramic Fuel Cells (Invited)

LEE, Jong-Ho[*1,2]; JI, Ho-Il[1,2]; IM, Seunghyeok[1,2]; AN, Hyegsoon[1,3]; SHIN, Dongwook[3]; IM, Jinhyuk[1,4]; SHIM, Joon Hyung[4]; KIM, Byung-Kook[1]

1. Center for Energy Materials Research, Korea Institute of Science and Technology, Korea
2. Division of Nano & Information Technology, University of Science and Technology, Korea
3. Division of Materials Science and Engineering, Hanyang University, Korea
4. School of Mechanical Engineering, Korea University, Korea

Session Chairs: FISHER, Craig A. J., Japan Fine Ceramics Center

17:00

(29-B5-S02-26) Electrochemical active sites in PCFC cathodes Investigated by using patterned thin film model electrodes

AMEZAWA, Koji[*1]; NISHIDATE, Katsuya[1]; SHINOMIYA, Yuki[1]; MIZUNO, Keita[1]; KIMURA, Yuta[1]; NAKAMURA, Takashi[1]; YASHIRO, Keiji[1]; KAWADA, Tatsuya[1]; MIKAMI, Yuichi[2]; ONUMA, Shigenori[2]; KUROHA, Tomohiro[2]; TANIGUCHI, Noboru[2]; TSUJI, Yoichiro[2]

1. Tohoku University, Japan
2. Panasonic Corporation

17:15

(29-B5-S02-27) Hydrogen production from methane and steam by electrochemical cell using proton-conducting oxide

OKUYAMA, Yuji[*1]; NAGATOMO, Satoshi[1]; NIISAKA, Aoi[1]; MATSUNAGA, Naoki[1]; SAKAI, Go[1]; SASAMATA, Yuichi[2]; OGURA, Yusuke[2]; MIZUTANI, Yasunobu[2,3]

1. University of Miyazaki, Japan
2. Toho Gas Co. Ltd., Japan
3. National Institute of Advanced Industrial Science and Technology, Japan

17:30

(29-B5-S02-28) An innovative way to reveal hydration kinetics in triple (O2-/H+/e-) conducting oxides via isotope exchange diffusion profile (Invited)

KIM, Guntae[*1]

1. UNIST, Korea

■October 29 (Tue) (Room A2) ■

04:Symposium on Multiferroic Materials

Session Chairs: KIMURA, Tsuyoshi, The University of Tokyo

10:45

(29-A2-S04-11) Electric Field Control of Magnetism (Keynote)

RAMESH, Ramamoorthy[*1]

1. UC Berkeley, USA

11:30

(29-A2-S04-12) Evolution of topological domain structure in in hexagonal manganite ferroelectrics (Invited)

LIU, Jun-Ming[*1]; YANG, Kunlun[1]
1. Nanjing University, China

Session Chairs: KAMBA, Stanislav, Institute of Physics, Czech

13:30

(29-A2-S04-13) Coupled order parameters and domains in magnetoelectric multiferroics breaking both space inversion and time reversal symmetries (Invited)

KIMURA, Tsuyoshi[*1]
1. University of Tokyo, Japan

14:00

(29-A2-S04-14) Multiferroics: hidden functionalities beyond magnetoelectric coupling (Invited)

FIEBIG, Manfred[*1]
1. Deapartment of Materials, ETH Zurich, Switzerland

14:30

(29-A2-S04-15) Ferroic Heterostructure-based Prototype Memory Devices (Invited)

YIN, Yuewei[1]; LI, Xiaoguang[*1]
1. Department of Physics, University of Science and Technology of China, China

15:00

(29-A2-S04-16) Manipulation of Individual Skyrmion Switching by Electric Field via Strain-Mediated Magnetoelectric Coupling (Invited)

HOU, Zhipeng[*1]; GAO, Xingsen[1]; LIUI, Junming[2]
1. South China Academy of Advanced Optoelectronics, South China Normal University, China
2. Laboratory of Solid State Microstructures and Innovation Center of Advanced Microstructures, Nanjing University, China

15:15

(29-A2-S04-17) Influence of particle size and morphology on the local properties in $EuFeO_3$ multiferroic

SKLYAROVA, Anastasia[*1]; POPKOV, Vadim I.[2]; PLESHAKOV, Ivan V.[2]; MATVEEV, Vladimir V.[3]; KOHOUT, Jaroslav[1]; KMJEC, Tomas[1]; ZAVETA, Karel[1]; FOMICHOV, Yevhen[1]; CHLAN, Vojtech[1]; STEPANKOVA, Helena[1]
1. Faculty of Mathematics and Physics, Charles University, Czech Republic
2. Ioffe Institute, Russian Federation
3. St. Petersburg State University, Russian Federation

15:30

(29-A2-S04-18) In situ formation of discrete column of (111) oriented NZFO in BTO/NZFO multiferroic thin film on c-Si by sol-gel method

TIAN, Wei[*1]; WANG, Zongrong[1]; MA, Ning[1]; DU, Piyi[1]
1. School of Materials Science and Engineering, Zhejiang University, China

(15:45) Coffee Break

Session Chairs: DONG, Shuai, Southeast University

16:00

(29-A2-S04-19) Monitoring and design polar states during complex oxide thin film growth (Invited)

TRASSIN, Morgan[*1]
1. Department of Materials, ETH Zurich, Switzerland

16:30

(29-A2-S04-20) "Anisotropic" magnetodielectric coupling in $EuTiO_3$ and multiferroic quantum criticality in $Eu_{0.3}Ba_{0.1}Sr_{0.6}TiO_3$ (Invited)

KAMBA, Stanislav[*1]; REPCEK, Dalibor[1,2]; SAVINOV, Maxim[1]; KADLEC, Christelle[1]; KADLEC, Filip[1]; GOIAN, Veronica[1]; KACHLIK, Martin[3]; PROSCHEK, Petr[4]; PROKLESKA, Jan[4]; NARAYAN, Awadhesh[5]; SPALDIN, Nicola[5]
1. Institute of Physics, Czech Academy of Sciences, Czech Republic
2. Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University, Czech Republic
3. CEITEC - Central European Institute of Technology, Brno University of Technology, Czech Republic
4. Faculty of Mathematics and Physics, Charles University, Czech Republic
5. Materials Theory, ETH Zurich, Switzerland

17:00

(29-A2-S04-21) Electric field control of magnetism in complex oxides through proton evolution (Invited)

YU, Pu[*1,2]
1. Department of Physics, Tsinghua University, China
2. RIKEN Center for Emergent Matter Science (CEMS), Japan

17:30

(29-A2-S04-22) Hybrid Improper Ferroelectricity in Sr-Based Ruddlesden-Popper Ceramics (Invited)

LIU, Xiao Qiang[*1]; LU, Juan Juan[1]; CHEN, Bu Hang[1]; CHEN, Xiang Ming[1]
1. Zhejiang University, China

17:45

(29-A2-S04-23) Magnetic and Transport Properties of $TmFe_2O_4$ Thin Film with Anomalous Interface Structure

KIM, Youjin[*1]; KONISHI, Shinya[1]; HAYASAKA, Yuichiro[2]; KAKEYA, Itsuhiro[3]; TANAKA, Kastuhisa[1]
1. Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Japan
2. The Electronic Microscopy Center, Tohoku University, Japan
3. Department of Electronic Science and Engineering, Graduate School of Engineering, Kyoto University, Japan

■October 29 (Tue) (Room C2) ■

08:Materials for Solar Thermal Energy Conversion and Storage

Absorber and heat storage materials

Session Chairs: ROEB, Martin, German Aerospace Center

10:30

(29-C2-S08-01) High-temperature stability studies of solar-selective coatings (Invited)

KRAUSE, Matthias[*1]; MENDEZ, Alvaro[1,2]; LUNGWITZ, Frank[1]; HERAS PEREZ, Irene[3]; GUILLEN RODRIGUEZ, Elena[4]; RODRIGUEZ GARCIA, Jose[5]; FERNANDEZ RECHE, Jesus[5]; ESCOBAR-GALINDO, Ramon[6]
1. Helmholtz-Zentrum Dresden-Rossendorf, Germany
2. Nano4Energy S.L.N.E., Spain
3. University of Salamanca, Spain
4. Profactor GmbH, Austria
5. Concentrating Solar Systems Unit, CIEMAT - Plataforma Solar de Almería, Spain
6. Universidad de Cádiz, Spain

11:00

(29-C2-S08-02) Material issues for concentrated solar power (CSP)

SCHMUECKER, Martin[*1]; SIMON, Heike[1]; BLOCK, Tina[1]; KNOBLAUCH, Nicole[1]
1. German Aerospace Center (DLR), Institute of Materials Research, , Germany

11:15

(29-C2-S08-03) Recent trends in Thermo-Chemical heat Storage (Invited)

KARAGIANNAKIS, George[*1]; LORENTZOU, Souzana[1]; PAGKOURA, Chrysa[1]; SAKELLARIOU, Kyriaki[1]; KONSTANDOPOULOS, Athanasios G.[1,2]
1. Centre for Research & Technology Hellas / Aerosol & Particle Technology Laboratory (CERTH / APTL), Greece
2. Aristotle Univeristy of Thessaloniki / Chemical Engineering Dept., Greece

Materials for solar fuels and fertilizers

Session Chairs: KRAUSE, Matthias, Helmholtz-Zentrum Dresden-Rossendorf

13:30

(29-C2-S08-05) Oxide-Oxide Composites as High Efficiency Photoelectrocatalysts for Solar Hydrogen Production (Invited)

FISCHER, Thomas[*1]; MATHUR, Sanjay[1]

1. University of Cologne, Germany

14:00

(29-C2-S08-06) Redox Materials for Solar Thermochemical Looping Processes for Fuel Production and Other Applications

ROEB, Martin[*1]; BRENDELBERGER, Stefan[1]; VIETEN, Josua[1,2]; PEIN, Mathias[1,2]; RICHTER, Sebastian[1,2]; GUBAN, Dorottya[1]; SCHMUECKER, Martin[3]; AGRAFIOTIS, Christos[1]; SATTLER, Christian[1,2]

1. German Aerospace Center (DLR), Institute of Solar Research, Germany
2. Faculty of Mechanical Science and Engineering, Institute of Power Engineering, Professorship of Solar Fuel production, TU Dresden, Germany
3. German Aerospace Center (DLR), Institute of Materials Research, Germany

14:15

(29-C2-S08-07) Evidence of entropy effects and changes in re-oxidation behavior of Ceria-Zirconia solutions as function of thermal pre-treatment

KNOBLAUCH, Nicole[1]; SCHMUECKER, Martin[*1]

1. Institute of Material Research, German Aerospace Center, Germany

14:30

(29-C2-S08-08) Developing materials and processes for the sustainable nitrogen-based fertilizer production from sun, air, and water

PETERSEN, Stephan[*1]; JANTZEN, Tatjana[1]; HACK, Klaus[1]; GUBAN, Dorottya[2]; ROEB, Martin[2]; VIETEN, Josua[2]; KRUEGER, Hanna[2]; LACHMANN, Bruno[2]; HABERMEHL, Martin[3]; HUFSCHMIDT, Markus[3]; CHOURIB, Rayen[3]

1. GTT-Technologies, Herzogenrath, Germany
2. German Aerospace Center (DLR), Cologne, Germany
3. aixprocess, Germany

14:45

(29-C2-S08-09) A Material and Reactor Analytics Platform for Solar Fuels

KONSTANDOPOULOS, Athanasios[*1]; DIMITRAKIS, Dimitrios[1]; SYRIGOU, Maria[1]; ZACHAROPOULOU, Vassiliki[1]

1. Centre for Research and Technology-Hellas (CERTH), Greece

■October 29 (Tue) (Room B1C) ■

11:Advanced Powder Processing and Manufacturing Technologies

Particle dispersion

Session Chairs: MORI, Takamasa, Hosei University

10:15

(29-B1C-S11-15) Analysis for the behavior of particles in wet ball milling by DEM-CFD simulation

KUSHIMOTO, Kizuku[*1]; ISHIHARA, Shingo[1]; KANO, Junya[1]

1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

10:30

(29-B1C-S11-16) Surface Interactions and Flow Curves of SiO_2/Toluene Dense Slurry Treated by PEI Complexed with Different Fatty Acids

TAKI, Naoya[*1]; IIJIMA, Motoyuki[1]; TATAMI, Junichi[1]

1. Yokohama National University, Japan

10:45

(29-B1C-S11-17) Processing Transparent SiO_2 Glass by Pressureless Sintering of Green Body from Photo-curable Slurry: Effect of Particle Dispersion

IIJIMA, Motoyuki[*1]; ARITA, Ryoya[1]; TATAMI, Junichi[1]

1. Yokohama National University, Japan

11:00

(29-B1C-S11-18) Pulverization characteristics of a collision plate type jet mill for particle size adjustment of recovered powder in the MOX fuel fabrication process

KAWAGUCHI, Koichi[*1]; SEGAWA, Tomoomi[1]; YAMAMOTO, Kazuya[1]; MAKINO, Takayoshi[1]; ISO, Hidetoshi[1]; ISHII, Katsunori[1]

1. Japan Atomic Energy Agency, Japan

Shaping I

Session Chairs: IIJIMA, Motoyuki, Yokohama National University

11:15

(29-B1C-S11-19) Estimation of green body density from slurry characterization by using sedimentation and filtration test for slip casting and tape casting processes

MORI, Takamasa[*1]; YAMADA, Saori[2]; IWATA, Naoya[2]

1. Department of Chemical Science and Technology, Hosei University, Japan
2. Graduate School of Science and Engineering, Hosei University, Japan

11:30

(29-B1C-S11-20) Effect of Slurry Characteristics on Generation of Drying Defect for Ceramics Green Sheet

IWATA, Naoya[*1]; MORI, Takamasa[2,3]

1. Graduate School of Science and Engineering, Hosei University, Japan
2. Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan
3. Hosei University Research Institute for Slurry Engineering, Japan

11:45

(29-B1C-S11-21) Effects of water-soluble epoxy resin on gelcasting method

KIJIMA, Misako[*1]; FUJI, Masayoshi[2]; MIYAKAWA, Naomichi[3]

1. AGC Inc., Japan
2. Nagoya Institute of Technology, Japan
3. AGC Inc., Japan

Shaping II

Session Chairs: TANAKA, Satoshi, Nagaoka University of Technology

13:30

(29-B1C-S11-22) Splat Formation Issue in Thermal Spray Process

FUKUMOTO, Masahiro[*1]

1. Toyohashi University of Technology, Japan

13:45

(29-B1C-S11-23) Biodegradable synthetic bone graft substitutes made by biphasic bioceramics with interconnected porous structure

CHANG, Hao-Yu[*1]; TUAN, Wei-Hsing[1]; LAI, Po-Liang[2]

1. Department of Materials Science and Engineering, National Taiwan University, Taiwan
2. Department of Orthopedic Surgery, Bone and Joint Research Center, Chang Gung Memorial Hospital at Linkou, College of Medicine, Chang Gung University, Taiwan

14:00

(29-B1C-S11-24) In-situ observation of dewaxing process of ceramic powder compacts by optical coherence tomography

KATO, Mayu[*1]; TATAMI, Junichi[1,2]; IIJIMA, Motoyuki[1,2]; TAKAHASHI, Takuma[2]

1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

14:15

(29-B1C-S11-25) Internal structure observation of Al_2O_3 ceramics using optical coherence tomography

TAKAHASHI, Takuma[*1]; TATAMI, Junichi[1,2]; SAKAMOTO, Fumika[2]; ITO, Hidetaka[1]; TAGUCHI, Isamu[1]; IIJIMA, Motoyuki[1,2]
1. Kanagawa Institute of Industrial Science and Technology, Japan
2. Yokohama National University, Japan

Sintering

Session Chairs: WU, Yiquan, Alfred University

14:30

(29-B1C-S11-26) Processing and properties of Si3N4 ceramics for potential use as circuit substrate in power electronic devices (Invited)

ZHANG, Jingxian[*1]; DUAN, Yusen[1]; JIANG, Dongliang[1]
1. State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Japan

15:00

(29-B1C-S11-27) Preparation of Transparent and Fluorescent Ca-α-SiAlON: Eu^{2+} Bulk Ceramics

LI, Ying[*1]; TAKAHASHI, Takuma[1]; YOKOUCHI, Masahiro[1]; TATAMI, Junichi[1,2]
1. Kanagawa Institute of Industrial Science and Technology, Japan
2. Faculty of Environment and Information Sciences, Yokohama National University, Japan

(15:15) Coffee Break

Session Chairs: KOZAWA, Takahiro, Osaka University

15:30

(29-B1C-S11-28) Suppression of coarse pore evolution in zirconia-alumina ceramic system

TANAKA, Satoshi[*1]; YAMAGUCHI, Shuntaro[1]
1. Nagaoka University of Technology, Japan

15:45

(29-B1C-S11-29) Sintering of Strontium-doped Calcium Sulfate bone void filler

CHEN, Ying-Cen[*1]; TUAN, Wei-Hsing[1]; HSU, Pei-Yi[1]; CHANG, Li-Kwan[2]; LAI, Po-Liang[3]
1. Department of Materials Science and Engineering, National Taiwan University, Taiwan
2. Department of Biochemical Science and Technology, College of Life Science, National Taiwan University, Taiwan
3. Department of Orthopaedic Surgery, Chang Gung Memorial Hospital, Taiwan

16:00

(29-B1C-S11-30) Real-time and 3-dimensional observation of sintering behavior of alumina by optical coherence tomography

TATAMI, Junichi[*1,2]; SAKAMOTO, Fumika[1]; TAKAHASHI, Takuma[2]; IIJIMA, Motoyuki[1,2]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

16:15

(29-B1C-S11-31) Piezoelectric property of [101]-oriented (Li, Na, K)NbO_3 ceramics

ONO, Yuki[*1]; TANAKA, Satoshi[1]; HONMA, Tsuyoshi[1]; SHIMIZU, Hiroyuki[2]; HARADA, Tomohiro[2]; DOSHIDA, Yutaka[3]
1. Nagaoka University of Technology, Japan
2. Taiyo Yuden Co.Ltd, Japan
3. Ashikaga University, Japan

Session Chairs: TAKAHASHI, Takuma, KISTEC

16:30

(29-B1C-S11-32) Pressureless Sintering of Transparent Aluminum Oxynitride (Al-O-N)

OHKOSHI, Kazuto[*1]; OGAWA, Shuhei[1]; YOSHINO, Haruhiko[2]; MIYAKAWA, Naomichi[1]
1. Materials Integration Laboratories, AGC Inc., Japan
2. Innovative Technology Laboratories, AGC Inc., Japan

16:45

(29-B1C-S11-33) Microwave Hybrid Sintering of ZrO_2 added Al_2O_3 Composites, And Study of Mechanical Properties, Thermal Properties, and Sintering Kinetics

KHALID, Muhammad Waqas[*1,2]; KIM, Young Il[2,3]; LEE, Dong-ju[3]; KIM, Bum Sung[1,2]; LEE, Bin[2]
1. Department of Industrial Materials and Smart Manufacturing Engineering, University of Science and Technology, Daejeon, Korea
2. Korea Institute for Rare Metals, Korea Institute of Industrial Technology, Incheon, Korea
3. Department of Advanced Materials Engineering, Chungbuk National University, Cheongju, Korea

17:00

(29-B1C-S11-34) Fabrication of SiC fiber-reinforced SiC matrix composites derived from SiC nanopowder with a very thin coated layer of additives by SPS

SHIMODA, Kazuya[*1]; TANAKA, Hidehiko[1]; HINOKI, Tatsuya[2]; KAKISAWA, Hideki[1]
1. National Institute for Materials Science, Japan
2. Kyoto UNiversity, Japan

17:15

(29-B1C-S11-35) Fabrication and evaluation of perovskite $CsPbBr_3$ luminescent films via solvent-free aerosol deposition process for light emitting diode applications

KIM, Ik-Soo[*1]; KIM, Sunghoon[2]; CHO, Myung-Yeon[1]; KIM, Sang-Wook[2]; OH, Jong-Min[1]
1. Kwangwoon University, Seoul, Korea
2. Ajou University, Korea

17:30

(29-B1C-S11-36) Bi_3TaO_7 Nanosheets as Visible-Light-Active Photocatalysts for Water Splitting

RAZAVI-KHOSROSHAHI, Hadi[*1]; MOHAMMADZADEH, Sara[1]; HOJAMBERDIEV, Mirabbos[2]; KITANO, Sho[3]; YAMAUCHI, Miho[3,4]; FUJI, Masayoshi[1]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Department of Materials Physics, Faculty of Engineering, Nagoya University, Japan
3. Department of Chemistry, Kyushu University, Japan
4. International Institute for Carbon-Neutral Energy Research, Kyushu University, Japan

■October 29 (Tue) (Room T1) ■

12:Novel Nanocrystal Technologies for Advanced Ceramic Materials & Devices

Quantum dots

Session Chairs: MIMURA, K., AIST

10:15

(29-T1-S12-14) Solution-Processed Silicon Nanocrystals for Optoelectronics and Medical Applications (Invited)

SHIRAHATA, Naoto[*1,2,3]
1. WPI-MANA, National Institute for Matrials Science (NIMS), Japan
2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
3. Department of Physics, Chuo University, Japan

10:45

(29-T1-S12-15) Investigation of Photothermal Effect in Silicon Quantum Dots for Bioapplications

OZBILGIN, Irem Nur Gamze[*1,2]; CHINNATHAMBI, Shanmugavel[3]; SHIRAHATA, Naoto[1,2,4]
1. International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Japan
2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
3. International Center for Young Scientists, National Institute for Materials Science (NIMS), Japan
4. Department of Physics, Chuo University, Japan

11:00

(29-T1-S12-16) Color-Tunable Silicon Quantum

Dot Light-Emitting Diode with Inverted structure
YAMADA, Hiroyuki[*1,2]; SHIRAHATA, Naoto[1,2,3]
1. Department of Physics, Chuo University, Japan
2. International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Japan
3. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan

2D nanomaterials

Session Chairs: SATO, K., Gunma University

11:15

(29-T1-S12-17) 2D Functional Nanosheets: Soft Chemical Synthesis, Hetero-assembly and Emergent Properties (Invited)
MA, Renzhi[*1]; SASAKI, Takayoshi[1]
1. National Institute for Materials Science, Japan

11:45

(29-T1-S12-18) Tailoring Electrical and Optical Properties of Unconventional van-der-Waals/Electrostatic Heterostructures of $Ca_2Nb_3O_{10}$-/MoS_2 Bilayer Systems
TANIGUCHI, Takaaki[*1]; NURDIWIJAYANTO, Leanddas[1]; LI, Shisheng[1]; MIYATA, Yasumitsu[2]; TSUKAGOSHI, Kazuhito[1]; EBINA, Yasuo[1]; OSADA, Minoru[1,3]; SASAKI, Takayoshi[1]
1. World Premier International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), Japan
2. Department of Physics, Tokyo Metropolitan University, Japan
3. Institute of Materials and Systems for Sustainability, Nagoya University, Japan

Session Chairs: TANIGUCHI, T., NIMS

13:30

(29-T1-S12-19) Growth and characterization of two-dimensional heterostructures based on layered chalcogenides (Invited)
MIYATA, Yasumitsu[*1]
1. Department of Physics, Tokyo Metropolitan University, Japan

14:00

(29-T1-S12-20) Finding hidden symmetries in low-dimensional materials by X-ray pair distribution functions (Invited)
TOMINAKA, Satoshi[*1]
1. National Institute for Materials Science (NIMS), Japan

14:30

(29-T1-S12-21) Flake-Like Metalate Nanosheets Synthesized by Bottom-Up Process in Aqueous Solutions
BAN, Takayuki[*1]; ITO, Ayaka[1]; KAIDEN, Takafumi[1]; WAKITA, Takahiro[1]; TAKAI, Chika[1]; OHYA, Yutaka[1]
1. Gifu University, Japan

Dielectric/Ferroelectrics

Session Chairs: HUEY, B. D., University of Connecticut

14:45

(29-T1-S12-22) Properties of Crystallization Controlled $BaTiO_3$, $SrTiO_3$ Thin Films by Chemical Solution Deposition (Invited)
HOSOKURA, Tadasu[*1]
1. Murata Manufacturing Co., Ltd., Japan

15:15

(29-T1-S12-23) Nanoscale Characterization of Ferroelectric Nanostructures by Scanning Probe Microscope under Ultrahigh Vacuum (Invited)
SUZUKI, Keigo[*1]; KONDO, Hiroyuki[1]; HOSOKURA, Tadasu[1]; MURAYAMA, Koji[1]
1. Murata Manufacturing Co., Ltd., Japan

(15:45) Coffee Break

Crystal growth

Session Chairs: HUEY, B. D., University of Connecticut

16:00

(29-T1-S12-24) Crystal growth behavior in sheet-like $Pb(Zr,Ti)O_3$ nanoparticles
TAKADA, Yoko[*1]; MIMURA, Ken-ichi[1]; LIU, Zheng[1]; KATO, Kazumi[2]
1. Inorganic Functional Materials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

16:15

(29-T1-S12-25) Solvothermal Synthesis of Alkaline-Niobate Perovskite Nanocubes and Preparation of Nanocube Assemblies for Capacitors
UENO, Shintaro[*1]; KUNUGI, Chika[1]; OSADA, Kazuki[1]; KUNISADA, Ryo-ichi[1]; YAMAGA, Erika[1]; CHIKATA, Tsukasa[1]; FUJII, Ichiro[1]; WADA, Satoshi[1]
1. University of Yamanashi, Japan

Session Chairs: DANG, F., Shandong University

16:30

(29-T1-S12-26) Ligand-assisted hydrothermal synthesis of raspberry shaped Co_3O_4 nanoparticles
FUCHIGAMI, Teruaki[*1]; KIMATA, Ryosuke[1]; HANEDA, Masaaki[1,2,3]; KAKIMOTO, Ken-ichi[1,3]
1. Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan
2. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
3. Frontier Research Institute for Materials Science, Nagoya Institute of Technology, Japan

16:45

(29-T1-S12-27) Fabrication of Oxide Nano-Structure Gas Sensors synthesized by Metal Organic Decomposition Method
SUGAHARA, Tohru[*1]; ALIPOUR, Leila[1]; HIROSE, Yukiko[1]; NAKAMURA, Jun-ichi[2,3]; ONO, Hironobu[3]; HARADA, Nobuyuki[2]; SUGANUMA, Katsuaki[1]
1. The Institute of Scientific and Industrial Research, Osaka University, Japan
2. Nippon Shokubai Research Alliance Laboratories, Japan
3. Research Center, Nippon Shokubai Co. Ltd., Japan

(17:00) Coffee Break

Session Chairs: DANG, F., Shandong University

17:15

(29-T1-S12-28) Boron Nitride-based Nanostructures: Structure Regulation and Growth mechanism
WANG, Heng[*1]; FU, Zhengyi[1]
1. Wuhan University of Technology, China

17:30

(29-T1-S12-29) Hydrothermal Synthesis of Oxide Nanocrystals with Various Morphologies (Invited)
KOBAYASHI, Makoto[*1]; KATO, Hideki[2]; OSADA, Minoru[1]; KAKIHANA, Masato[2]
1. Institute of Materials and Systems for Sustainability, Nagoya University, Japan
2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

■October 29 (Tue) (Room B4) ■

14:Advanced Structure Analysis and Characterization of Ceramic Materials

Nos. 14 & 19 Joint Session

Session Chairs: FUJII, Kotaro, Tokyo Institute of Technology

15:45

(29-B4-S14-01) Designing and Demonstration of Multivalent Ion Conduction in Solids (Invited)
IMANAKA, Nobuhito[*1]
1. Osaka University, Japan

16:15

(29-B4-S14-02) Defect Chemistry of Metal Hydride

Agent-Reduced Simple Perovskites (Invited)
HAYASHI, Katsuro[*1]
1. Kyushu University, Japan

Young Scientist Session

Session Chairs: IMANAKA, Nobuhito, Osaka University

16:45

(29-B4-S14-03) Experimental investigation and thermodynamic modeling of the ZrO_2-TiO_2-MgO system
SAENKO, Ivan[*1]; FABRICHNAYA, Olga[1]
1. Institute of Materials Science, TU Bergakademie Freiberg, Germany

17:00

(29-B4-S14-04) Relationship between the crystal structure and electrical properties of novel oxide ion conductor with hexagonal perovskite-type structure
MURAKAMI, Taito[*1]; TSUJIGUCHI, Takafumi[1]; SAKUDA, Yuichi[1]; YASUI, Yuta[1]; MIAO, Ping[2]; HAGIHARA, Masato[2]; TORII, Shuki[2]; KAMIYAMA, Takashi[2]; FUJII, Kotaro[1]; YASHIMA, Masatomo[1]
1. Tokyo Institute of Technology, Japan
2. High Energy Accelerator Research Organization(KEK), Japan

17:15

(29-B4-S14-05) Acceptor (Fe, Al) doping effects on crystal structures and proton transport properties in layered perovskite Sr_2TiO_4
YAGI, Yutaro[*1]; KAGOMIYA, Isao[1]; KAKIMOTO, Ken-ichi[1]
1. Nagoya Institute of Technology, Japan

■October 29 (Tue) (Room C1) ■

15:Advanced Nanocharacterization and Atomic-Scale Modeling of Grain Boundaries and Interfaces in Ceramics: Structures, Dynamics and Properties

Advanced microscopy for ceramic materials

Session Chairs: MA, Xiuliang, Chinese Academy of Sciences

10:15

(29-C1-S15-16) Enhanced piezoelectric and thermoelectric materials through aberration-corrected STEM (Invited)
PENNYCOOK, Stephen John[*1]; WU, Haijun[1]
1. Department of Materials Science and Engineering, National University of Singapore, Singapore

10:45

(29-C1-S15-17) Electron microscopic understanding of metal-insulator transition in vanadium oxide (Invited)
LEE, Daesu[1]; SON, Junwoo[2]; CHOI, Si-Young[*2]
1. Department of Physics, POSTECH, Korea
2. Department of Materials Science & Engineering, POSTECH, Korea

11:15

(29-C1-S15-18) Structural origin of enhanced ionic conductivity at yttria-stabilized zirconia dislocation investigated by scanning transmission electron microscopy
FENG, Bin[*1]; ISHIKAWA, Ryo[1]; SHIBATA, Naoya[1,2]; IKUHARA, Yuichi[1,2]
1. The University of Tokyo, Japan
2. Japan Fine Ceramics Center, Japan

11:30

(29-C1-S15-19) IN SITU HIGH TEMPERATURE ELECTRON MICROSCOPY OBSERVATION OF SINTERING FIRST STAGE OF MO_2 (M=Ce, Th) MICROSPHERES
CLAVIER, Nicolas[*1]; TRILLAUD, Victor[1]; NKOU BOUALA, Galy Ingrid[1]; LECHELLE, Jacques[2]; DACHEUX, Nicolas[1]; PODOR, Renaud[1]
1. ICSM, CEA, CNRS, ENSCM, Univ. Montpellier, Site de Marcoule, BP 17171, 30207 Bagnols/Cèze, France
2. CEA/DEN/DEC/SESC/LLCC, Site de Cadarache, 13108 St-Paul lez Durance, France

Session Chairs: CHUNG, Sung-Yoon, KAIST

11:45

(29-C1-S15-20) Formation of Nanodomains in a $BaTiO_3$ Film Induced by Anisotropic Strain from an Orthorhombic $GdScO_3$ Substrate
KOBAYASHI, Shunsuke[*1]; INOUE, Kazutoshi[2]; KATO, Takeharu[1]; IKUHARA, Yuichi[1,2,3]; YAMAMOTO, Takahisa[1,4]
1. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
2. Advanced Institute for Materials Research, Tohoku University
3. Institute of Engineering Innovation, The University of Tokyo, Japan
4. Department of Quantum Engineering, Nagoya University, Japan

12:00

(29-C1-S15-21) Three-dimensional atomic structures of platinum nanoparticles on $SrTiO_3$ (001)
KUBOTA, Rikuto[*1]; ISHIKAWA, Ryo[1,2]; KAWAHARA, Kazuaki[1]; SHIBATA, Naoya[1,3]; IKUHARA, Yuichi[1,3]
1. Institute of Engineering Innovation, The University of Tokyo, Japan
2. Japan Science and Technology Agency, PRESTO, Japan
3. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

13:30

(29-C1-S15-22) Atomic Mapping of Domains and Interfacial Structures in Ferroelectric Films (Keynote)
MA, Xiuliang[*1]; TANG, Yunlong[1]; ZHU, Yinlian[1]; LIU, Ying[1]; WANG, Yujia[1]
1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

14:00

(29-C1-S15-23) Development of Magnetic Field Free Atomic-Resolution STEM (Keynote)
SHIBATA, Naoya[*1,2]
1. Institute of Engineering Innovation, The University of Tokyo, Japan
2. NSRL, Japan Fine Ceramics Center, Japan

14:15

(29-C1-S15-24) 2D Vortex-Antivortex Arrays in BiFeO3 Films Stabilized by Orthorhombic Symmetry
ZHU, Yinlian[*1]; GENG, Wanrong[1]; MA, Xiuliang[1]
1. Institute of Metal Research, Chinese Academy of Sciences, China

Functional materials and their interfaces

Session Chairs: MATSUNAGA, Katsuyuki, Nagoya University

14:30

(29-C1-S15-25) Effect of Symmetry-Broken Atomic Configurations at Surface on Oxygen Electrocatalysis in Perovskite Oxides (Keynote)
CHUNG, Sung-Yoon[*1]
1. Korea Advanced Institute of Science and Technology, Korea

15:00

(29-C1-S15-26) Hydrogen-induced reversible phase transition enhanced by interfaces in correlated oxides (Invited)
SON, Junwoo[*1]
1. Pohang University of Science and Technology (POSTECH), Korea

15:30

(29-C1-S15-27) Surface protonation and catalytic activity of small oxide clusters

JUHASZ, Gergely[*1,2]
1. Tokyo Institute of Technology, Japan
2. JST, CREST, Japan

15:45

(29-C1-S15-28) Atomic structures of platinum nanoparticles on a TiO2 (110) surface

UENO, Yujiro[*1]; ISHIKAWA, Ryo[1,2]; KAWAHARA, Kazuki[1]; SHIBATA, Naoya[1,3]; IKUHARA, Yuuichi[1,3]
1. Institute of Engineering Innovation, School of Engineering, University of Tokyo, Japan
2. Japan Science and Technology Agency, PRESTO, Japan
3. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

16:00

(29-C1-S15-29) Atomic Column Shift of B-site Cations in (La0.3Sr0.7)(Al0.65Ta0.35)O3 Epitaxial Thin Film Grown by Pulsed Laser Deposition

TOKUDA, Yoshinori[*1]; IRIMOTO, Takeshi[1]; FUJII, Ryo[1]; KOBAYASHI, Shunsuke[2]; TOKUNAGA, Tomoharu[1]; YAMAMOTO, Takahisa[1,2]
1. Department of Materials Design Innovation Engineering, Nagoya University, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

■October 29 (Tue) (Room B6) ■

16:Single Crystals, Thin Films and Microstructures in Rechargeable Battery Systems

Characterization of battery materials

Session Chairs: ZETTSU, Nobuyuki, Shinshu University, Japan

10:15

(29-B6-S16-15) Studies of Solid Electrolyte - Electrode Interfaces (Invited)

CHOI, Chris[1]; ASHBY, David[2]; DUNN, Bruce[*1]
1. Materials Science and Engineering Department, University of California, USA
2. Sandia National Laboratories, USA

10:45

(29-B6-S16-16) Elucidation of electrochemical reactions in all-solid-state battery (Invited)

KANNO, Ryoji[*1]; HIKIMA, Kazuhiro[2]; KIUCHI, Hisao[3]; SUZUKI, Kota[1]; HIRAYAMA, Masaaki[1]
1. Tokyo Institute of Technology, Japan
2. Toyohashi University of Technology, Japan
3. Kyoto University, Japan

11:15

(29-B6-S16-17) Atomic structure and Li-ion conductivity of (La,Li)NbO3 electrolyte

KAWAHARA, Kazuaki[*1]; ISHIKAWA, Ryo[1,2]; NAKAYAMA, Kei[1]; HIGASHI, Takuma[1]; KIMURA, Teiichi[3]; IKUHARA, Yumi[3]; SHIBATA, Naoya[1,3]; IKUHARA, Yuichi[1,3]
1. The University of Tokyo, Japan
2. JST-PRESTO, Japan
3. Japan Fine Ceramics Center, Japan

11:30

(29-B6-S16-18) Atomic scale origin of Li-ion resistivity at ($Li_{3x}La_{2/3-x}TiO_3$ grain boundary

SASANO, Shun[*1]; ISHIKAWA, Ryo[1,2]; OHTA, Hiromichi[3]; SHIBATA, Naoya[1,4]; IKUHARA, Yuichi[1,4]
1. The University of Tokyo, Japan
2. Japan Science and Technology Agency, Japan
3. Hokkaido University, Japan
4. Japan Fine Ceramics Center, Japan

11:45

(29-B6-S16-19) Nanostructural Changes in Lithium-Ion Battery Cathodic Thin Films

IKUHARA, Yumi[*1]; GAO, Xiang[1]; FISHER, Craig A. J.[1]; KUWABARA, Akihide[1]; MORIWAKE, Hiroki[1]; IKUHARA, Yuichi[1,2]
1. Japan Fine Ceramics Center, Japan
2. The University of Tokyo, Japan

Anode and thin film battery system

Session Chairs: IKUHARA, Yumi, Japan Fine Ceramics Center, Japan

13:45

(29-B6-S16-20) Silicon-Based Anode Materials for Lithium Ion Batteries (Invited)

RIEDEL, Ralf[*1]
1. TU Darmstadt, Germany

14:15

(29-B6-S16-21) Analysis of non-uniform fading phenomena of lithium ion batteries (Invited)

UKYO, Yoshio[*1]
1. Japan Fine Ceramics Center, Japan

14:45

(29-B6-S16-22) Atomically Engineered Interfaces in Solid-state Batteries

HITOSUGI, Taro[*1]
1. Tokyo Institute of Technologym Japan

15:00

(29-B6-S16-23) Reducing the interface resistance at positive electrode/current collector by inserting an interface dipole in all-solid-state lithium batteries

NISHIO, Kazunori[*1]; SHIRASAWA, Tetsuroh[2]; SHIMIZU, Koji[3]; NAKAMURA, Naoto[1]; WATANABE, Satoshi[3]; SHIMIZU, Ryota[1,4]; HITOSUGI, Taro[1]
1. School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan
2. National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Japan
3. Department of Materials Engineering, The University of Tokyo, Japan
4. Department of Research Promotion, JST-PRESTO, Japan

15:15

(29-B6-S16-24) Mechanical properties Characterization of Battery Materials at Multiple Scale

YU, Qian[*1]
1. Zhejiang University, China
8. Zhejiang University, China

(15:30) Coffee Break

In-situ and electron microscpy for battery materials

Session Chairs: CHI, Miaofang, Oak Ridge National Laboratory, USA

15:45

(29-B6-S16-25) In-Situ TEM Studies of the Electro-Chemo-Mechanics of Li-Ion Batteries (Invited)

HUANG, Jianyu[*1,2]; TANG, Yongfu[1]; ZHANG, Liqiang[1]
1. Clean Nano Energy Center, State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, China
2. School of Materials Science and Engineering, Xiangtan University, Xiangtan, China

16:15

(29-B6-S16-26) *In-situ* Microscopy on Battery Materials for Visualization of Electrochemical Reactions (Invited)

LEE, Hyun-Wook[*1]
1. UNIST, Korea

16:45

(29-B6-S16-27) Real-Time Observation of Solid State Electrochemical Processes by In-Situ TEM (Invited)

WANG, Lifen[1]; XU, Zhi[1]; WANG, Wenlong[1]; BAI, Xuedong[*1]
1. Institute of Physics, Chinese Academy of Sciences, China

17:15

(29-B6-S16-28) Investigation of SEI Formation in $LiCoO_2$ Thin Films

YASUHARA, Sou[*1]; YOSHIKAWA, Yumi[2]; TERANISHI, Takashi[2]; YASUI, Shintaro[1]; TANIYAMA, Tomoyasu[1,3]; ITOH, Mitsuru[1]
1. Tokyo Institute of Technology, Japan
2. Okayama University, Japan
3. Nagoya University, Japan

17:30

(29-B6-S16-29) Direct observation of the Redox Orbitals in cathode materials for lithium ion batteries using quantitative CBED

XIAO, Dongdong[*1]; SHANG, Tongtong[1]; ZHANG, Qinghua[1]; WU, Lijun[2]; GU, Lin[1]
1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, China
2. Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, United States

■October 29 (Tue) (Room Theater) ■

17:Green Processing and Green Energy Materials for Sustainable Society

Session Chairs: HIRAI, Shigeto, Kitami Institute of Technology

13:00

(29-Theater-S17-19) Recent Progress in Chromogenic Smart Windows for Building Energy Conservation (Invited)

JIN, Ping[*1]; CAO, Xun[1]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

Session Chairs: KUBOTA, Yuta, Tokyo Institute of Technology

13:45

(29-Theater-S17-21) Evaporation-driven deposition of functional metal oxide films from aqueous solutions by low-speed dip coating

UCHIYAMA, Hiroaki[*1]
1. Kansai University, Japan

14:00

(29-Theater-S17-22) Fabrication of ZnO: rGO Composite Films by Spin-Spray Method

TANIGUCHI, Hiroaki[*1]; HAJIME, WAGATA[1]
1. Meiji University, Japan

14:15

(29-Theater-S17-23) Spectroelectrochemical Evaluation of ZnO Optically Transparent Electrode Prepared by Spin-Spray Technique

OKAZAKI, Takuya[*1]; TANIGUCHI, Hiroaki[1]; WAGATA, Hajime[1]; ITO, Mizuki[1]; KURAMITZ, Hideki[2]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan
2. Department of Environmental Biology and Chemistry, University of Toyama, Japan

(14:30) Coffee Break

Session Chairs: ADACHI, Nobuyasu, Nagoya Institute of Technology

14:45

(29-Theater-S17-24) Synthesis of transition metal nitrides by reduction and nitridation with melamine

IWAMOTO, Nariyasu[*1]; KAWAGUCHI, Takahiko[1]; SAKAMOTO, Naonori[2]; SUZUKI, Hisao[2]; WAKIYA, Naoki[2]
1. Graduate School of Integrated Science and Technology, Shizuoka University, Japan
2. Research Institute of Electronics, Shizuoka University, Japan

15:00

(29-Theater-S17-25) Optimal Conditions for Synthesizing TiN-Si_3N_4 Composite Powders from $TiSi_2$ in Ammonia Atmosphere

ALHUSSAIN, Hanan M.[*1,3]; MISE, Takuto[1]; MATSUO, Yasuyuki[1]; KIYONO., Hajime[2]
1. Division of Applied Chemistry, Graduate School of Science and Engineering, Shibaura Institute of Technology, Japan
2. Department of Applied Chemistry, College of Engineering, Shibaura Institute of Technology, Japan
3. Department of Chemistry, Imam Mohammad Ibn Saud Islamic University (IMSIU), Saudi Arabia

15:15

(29-Theater-S17-26) Thin film growth of perovskite oxynitrides by Dynamic Aurora PLD

KAWAGUCHI, Takahiko[*1]; AOSHIMA, Futa[1]; SUGITA, Mayuko[1]; SAKAMOTO, Naonori[1,2]; SUZUKI, Hisao[1,2]; WAKIYA, Naoki[1,2]
1. Graduate School of Integrated Science and Technology, Shizuoka University, Japan
2. Research Institute of Electronics, Shizuoka University, Japan

Session Chairs: MIYAZAKI, Hidetoshi, Shimane Univ.

15:30

(29-Theater-S17-27) Improving photoactivity of $BaNbO_2N$ photoanodes prepared from $Ba_5Nb_4O_{15}$ by hydrothermal method

KURITA, Kenji[*1]; ITO, Mizuki[1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan

15:45

(29-Theater-S17-28) Preparation of TiO_2 Thin Films on Polycarbonate Substrates by Non-Seed CBD Method

SHINO, Chihiro[*1]; WAGATA, Hajime[1]
1. Meiji University, Japan

16:00

(29-Theater-S17-29) Growth of $LaFeO_3$ Crystals from a LiCl-NaCl-KCl Flux

WAGATA, Hajime[*1]; NISHIWAKI, Junpei[1]; TOKUDA, Kenzo[1]
1. Meiji University, Japan

(16:15) Coffee Break

Session Chairs: WAGATA, Hajime, Meiji Univ.

16:30

(29-Theater-S17-30) Utility of Oxide Nanoparticles for Morphological Control of Wurtzite Oxynitrides (Invited)

ASAKURA, Yusuke[*1]; YIN, Shu[1]
1. Tohoku Univeristy, Japan

17:00

(29-Theater-S17-31) Synthesis of GaN nanoparticles from beta-Ga_2O_3 powder by NH_3 nitridation

KIYONO, Hajime[*1]; HANASHI, Genki[1]; MATSUO, Yasuyuki[2]
1. College of Engineering, Shibaura Institute of Technology, Japan
2. Graduate School of Science and Engineering, Shibaura Institute of Technology, Japan

Session Chairs: WATANABE, Tomoaki, Meiji Univ.

17:15

(29-Theater-S17-32) Microstructure Control of the Core-Shell Hybrid Ceramic Particles by Chemical Solution Deposition

OHNO, Tomoya[*1]; MARUYAMA, Takahiro[2]; SUZUKI, Hokuto[2]; HIRAI, Shigeto[1]; MATSUDA, Takeshi[1]; SAKAMOTO, Naonori[3]; SUZUKI, Hisao[3]
1. School of Earth, Energy and Environmental Engineering, Kitami Institute of Technology, Japan
2. Department of Materials Science and Engineering, Kitami Institute of Technology, Japan
3. Research Institute of Electronics, Shizuoka University, Japan

17:30

(29-Theater-S17-33) Enhancement of photocatalytic activity of Ga2O3 by impurity doping (Invited)

YAMAKATA, Akira[*1]; VEQUIZO, Junie Jhon M.[1]; ISHIYAMA, Shouta[2]; HIRAMINE, Taishi[2]; SAKATA, Yoshihisa[2]
1. Toyota Technological Institute, Japan
2. Yamaguchi University

■October 29 (Tue) (Room B3) ■

18:Additive Manufacturing and 3d Printing Techonologies

Enabling Applications

Session Chairs: KIRIHARA, Soshu, Osaka University

16:00

(29-B3-S18-01) Enabling Additive Manufacturing Technologies for Advanced Aero Propulsion Materials & Components (Invited)

HALBIG, Michael[*1]; SINGH, Mrityunjay[2]

1. NASA Glenn Research Center, USA
2. Ohio Aerospace Institute, USA

16:30

(29-B3-S18-02) Binder Jetting Additive Manufacturing of Heat Exchangers (Invited)

SINGH, Dileep[*1]

1. Argonne National Laboratory, USA

Multi Materials & Dimensions

Session Chairs: KIRIHARA, Soshu, Osaka University

17:00

(29-B3-S18-03) New applications of hybrid multi-materials and smart design

BOURJOL, Maxence[*1]; CHAPUT, Christophe[1]; GAIGNON, Richard[1]

1. 3DCERAM SINTO, France

Session Chairs: HALBIG, Michael, NASA Glenn Research Center

17:15

(29-B3-S18-04) Direct 3D-printing of a Geopolymer-based Membrane Dedicated to Cesium Decontamination: Material Formulation, Process Development and Decontamination Efficiency

PARAISO, Kolani[1]; SVETLANA, Petlitkaia[1]; GERENTON, Adrien[1]; PIALLAT, Thomas[1]; POULESQUEN, Arnaud[1]; FRIZON, Fabien[*1]

1. CEA (French Atomic and Alternative Energies Commission), France

17:30

(29-B3-S18-05) Pellets Additive Manufacturing for complex shaped silicon carbide ceramics

GOTTSCHALK, Nicole[*1]; MARIGO, Gloria[1]; FRIEDRICH, Lion[1]; PIEDIMONTE, Elisa[1]; KLOPSCH, Linda[1]

1. German Aerospace Center (DLR), Germany

17:45

(29-B3-S18-06) Stereolithographic Additive Manufacturing of Fluctuated Surfaces of Ceramic Components for Fluid Flow Modulations

KIRIHARA, Soshu[*1]

1. Osaka University, Japan

■October 29 (Tue) (Room B4) ■

19:Mixed Anion Compounds for Novel Functionalities

Photoactive functionarities

Session Chairs: NODA, Yasuto, Kyoto University

10:15

(29-B4-S19-17) A Lead-Titanium Oxyfluoride as a New Visible-Light-Absorbing Semiconductor for Photocatalytic and Photoelectrochemical Water Splitting (Invited)

MAEDA, Kazuhiko[*1]

1. Department of Chemistry, School of Science, Tokyo Institute of Technology, Tokyo 152-8550, Japan

10:45

(29-B4-S19-18) B/N Anions Co-doped Multi-crystalline TiO_2 and Its Photocatalytic Activity

CAO, Jingdi[*1]; ASAKURA, Yusuke[1]; YIN, Shu[1]

1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

11:00

(29-B4-S19-19) Novel Tetragonal $BaCN_2$:Eu^{2+} Phosphor and Its Temperature Dependent Emission

MASUBUCHI, Yuji[*1]; NISHITANI, Sayaka[2]; HIGUCHI, Mikio[1]

1. Faculty of Engineeering, Hokkaido University, Japan
2. Graduate School of Sciences and Engineering, Hokkaido University, Japan

11:15

(29-B4-S19-20) Anion-substitution Effect on Eu^{3+} luminescence in YO*X* (*X* = Cl or Br)

KITAGAWA, Yuuki[*1]; UEDA, Jumpei[1]; TANABE, Setsuhisa[1]

1. Kyoto Univ., Japan

Mixed anion effect on battery materials

Session Chairs: MASUBUCHI, Yuji, Hokkaido University

11:30

(29-B4-S19-21) Nitrogen-doping effect on $Li_{1.2}Ti_{0.4}Mn_{0.4}O_2$ cathode for Li-ion battery

UCHIYAMA, Tomoki[*1]; WATANABE, Aruto[1]; YAMAMOTO, Kentaro[1]; HAYASHI, Akitoshi[2]; MAEDA, Kazuhiko[3]; KAGEYAMA, Hiroshi[4]; UCHIMOTO, Yoshiharu[1]

1. Kyoto University, Graduate School of Human and Environmental Studies, Japan
2. Osaka Prefecture University, Graduate School of Engineering, Japan
3. Tokyo Institute of Technology, Department of Chemistry, School of Science, Japan
4. Kyoto University, The Department of Energy and Hydrocarbon Chemistry, Graduate School of Engineering, Japan

11:45

(29-B4-S19-22) Mechanochemical Fluorine-Doping to Antifluorite-Type Lithium Copper Oxide Cathode for Improvement of Cyclability in Li-ion Battery

KOBAYASHI, Hiroaki[*1]; SHIMADA, Yuta[2]; OGASAWARA, Yoshiyuki[2]; HIBINO, Mitsuhiro[2]; KUDO, Tetsuichi[2]; MIZUNO, Noritaka[2]; YAMAGUCHI, Kazuya[2]

1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
2. Department of Applied Chemistry, School of Engineering, The University of Tokyo, Japan

Electronic and structural design

Session Chairs: KUWABARA, Akihide, Japan Fine Ceramics Center

13:30

(29-B4-S19-23) Ab initio and experimental design of new oxychalcogenides phases using heteroleptic building block units (Keynote)

KABBOUR, Houria[*1]

1. CNRS - UCCS - University of Lille, France

14:00

(29-B4-S19-24) Material design and synthesis of new layered oxychalcogenides

IWASA, Yuki[*1]; OGINO, Hiraku[1]; AGULTO, Verdad[2]; YAMANOI, Kohei[2]; SHIMIZU, Toshihiko[2]; UEDA, Jumpei[3]; HONGO, Kenta[4]; MAEZONO, Ryo[4]; TANABE, Setsuhisa[3]; SARUKURA, Nobuhiko[2]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Institute of Laser Engineering, Osaka University, Japan
3. Graduate School of Human and Environmental Studies, Kyoto University, Japan
4. Japan Advanced Institute of Science and Technology (JAIST), Japan

14:15

(29-B4-S19-25) Synthesis, electronic structure and

physical properties of CrAs-based layered mixed anion compounds
NAIK, S. Pavan Kumar[*1]; OGINO, Hiraku[1]; IWASA, Yuki[1]; HONGO, Kenta[2]; MAEZONO, Ryo[2]
1. Electronics and Photonics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Japan Advanced Institute of Science and Technology, Japan

Structural analysis and diffusion control (Joint session with Session 14: Advanced structure analysis and characterization of ceramic material)

Session Chairs: KABBOUR, Houria, CNRS-UCCS

14:30
(29-B4-S19-26) Structure, electron density and diffusion path of mixed-anion compounds and oxides (Invited)
YASHIMA, Masatomo[*1]; HIBINO, Keisuke[1]; TSUJIGUCHI, Takafumi[1]; FUJII, Kotaro[1]; MURAKAMI, Taito[1]; MAEDA, Kazuhiko[1]
1. Department of Chemistry, Tokyo Institute of Technology, Japan

15:00
(29-B4-S19-27) Investigation of local structure of $BaInO_2F$ by X-ray PDF
KATSUMATA, Tetsuhiro[*1]; INAGUMA, Yoshiyuki[2]; MORI, Daisuke[3]; AIMI, Akihisa[4]; YONEDA, Yasutoshi[5]
1. Department of Chemistry, Tokai University, Japan
2. Faculty of Science, Gakushuin University, Japan
3. Department of Chemistry for Materials, Mie University, Japan
4. Faculty of Science and Technology, Tokyo University of Science, Japan
5. Materials Sciences Research Center, Japan Atomic Energy Agency (JAEA), Japan

15:15
(29-B4-S19-28) Novel Bromide Ion Conducting Solid Electrolyte Based on Lanthanum Oxybromide
MISRAN, Muhammad Radzi Iqbal Bin[*1]; NUNOTANI, Naoyoshi[1]; TAMURA, Shinji[1]; IMANAKA, Nobuhito[1]
1. Osaka University, Japan

■October 29 (Tue) (Room C2) ■

21:Specific Reaction Field and Material Fabrication Design

Nonequilibrium reaction field(I)

Session Chairs: ENOMOTO, Naoya, National Institute of Technology, Ariake College

15:30
(29-C2-S21-01) Characteristics of sonochemically produced $BaTiO_3$ nanocrystals (Invited)
YASUI, Kyuichi[*1]; KATO, Kazumi[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Session Chairs: HAYASHI, Yamato, Tohoku University

16:00
(29-C2-S21-02) Dispersion and Aggregation Behavior of Surface-modified Nanoparticles (Invited)
KUBO, Masaki[*1]
1. Department of Chemical Engineering, Tohoku University, Japan

Session Chairs: KUBO, Masaki, Tohoku University

16:30
(29-C2-S21-03) High-Throughput Fabrication and Novel Application of Metal Nanoparticle Related Materials for Positive Spiral by Home Electric Appliances
HAYASHI, Yamato[*1]
1. Tohoku Univeristy, Japan

16:45
(29-C2-S21-04) Ultrasound Synthesis of Sn-Bi Nanosolder for Low-Temperature Joining
ARAI, Kazuki[*1]; HAYASHI, Yamato[1]; FUKUSHIMA, Jun[1]; TAKIZAWA, Hirotsugu[1]
1. Tohoku University, Applied Chemistry, Graduate School of Engineering, Japan

Pioneering process (I)

Session Chairs: KUBO, Masaki, Tohoku University

17:00
(29-C2-S21-05) Preparation of Porous Strontium Titanate Particles by Hot Water Conversion of Hydrous Titania
UJIIE, Kazuya[*1]; KOJIMA, Takashi[1]; UEKAWA, Naofumi[1]
1. Department of Applied Chemistry and Biotechnology, Graduate School of Science and Engineering, Chiba University, Japan

Session Chairs: YIN, Shu, Tohoku University

17:15
(29-C2-S21-06) Synthesis of Porous Metal Oxide Particles by Partial Dissolution of Hydrous Metal Oxide and Crystallization
KOJIMA, Takashi[*1]; YOSHIDA, Tomoya[1]; BABA, Tsukasa[1]; YUKITA, Chieko[1]; YANAGIHARA, Yuya[1]; UEKAWA, Naofumi[1]
1. Graduate School of Engineering, Chiba University, Japan

17:30
(29-C2-S21-07) Crystal phase-based epitaxial growth of noble metal nanostructures on 4H/*fcc* Au nanowires (Invited)
LU, Qipeng[*1]
1. School of Materials Science and Engineering, University of Science and Technology Beijing, China

■October 29 (Tue) (Room A1) ■

25:Direct Thermal-to-Electrical Energy Conversion Materials and Thermal Energy Harnessing Challenges

TEG

Session Chairs: OHTAKI, Michitaka (1) ; BERTHEBAUD, David (2), (1)Kyushu University, (2)CNRS-Saint Gobain-NIMS

15:30
(29-A1-S25-01) Power enhancement of planar-type Si thermoelectric devices by nanostructuring (Invited)
NOMURA, Masahiro[*1,2]; YANAGISAWA, Ryoto[1]
1. Institute of Industrial Science, The University of Tokyo, Japan
2. CREST, Japan Science and Technology Agency, Japan

16:00
(29-A1-S25-02) Scalable CMOS Thermoelectric Energy Harvester Using Si Nanowires (Invited)
WATANABE, Takanobu[*1,2]
1. Faculty of Science and Engineering, Waseda University, Japan
2. Research Institute for Ambientronics, Waseda University, Japan

16:30
(29-A1-S25-03) Life Performance Prediction Approach for the Potential eMMRTG (Invited)
CAILLAT, Thierry[*1]; MATTHES, Christopher[1]; CHI, Su[1]; PINKOWSKI, Stanley[1]
1. Jet Propulsion Laboratory/California Institute of Technology, United States

17:00
(29-A1-S25-04) Durability and Application of Oxide Thermoelectric Units (Invited)
FUNAHASHI, Ryoji[*1]; URATA, Tomoyuki[1]; MATSUMURA, Yoko[1]; SUZUKI, Miho[1]; MURAKAMI, Hiroyo[1]; IKENISHI, Hitomi[1]; SASAKI, Shinya[2]; SUGIYAMA, Shigeaki[3]; IKEUCHI, Satoaki[4]; MAEDA, Shinichi[5]; NAGAHAMA, Takuma[5]; TAKEUCHI, Kazuya[6]
1. Inorganic Functional Materials Res. Inst., Natl. Inst. Adv. Ind. Sci.& Tech., Kansai, Japan
2. Electronics & Optical Research and Development Division, Akita

Ind. Tech. Center, Japan
3. Technology Innovation Section, Akita Ind. Tech. Center, Japan
4. Production Department, ADVANCE RIKO, Inc., Japan
5. Materials Research Laboratories, Nissan Chemical Corporation, Japan
6. Biological Research Laboratories, Nissan Chemical Corporation, Japan

17:30

(29-A1-S25-05) Diffusion behaviors of bonding interface of Bi-Te based thermoelectric materials with electroplated and sputtered Ni/Au barrier

EKUBARU, Yusufu[*1]; SUGAHARA, Tohru[1]; OKAJIMA, Michio[2]; NAMBU, Shutaro[2]; SUGANUMA, Katsuaki[1]
1. Department of Advanced Interconnection Materials, The Institute of Scientific and Industrial Research, Osaka University, Japan
2. E-ThermoGentek Co., Ltd., Japan

■October 29 (Tue) (Room C1) ■

29:Liquid-mediated Structuring of Ceramics and Organic-inorganic Hybrid Materials

Hybrid Materials

Session Chairs: KATAGIRI, Kiyofumi, Hiroshima University

17:00

(29-C1-S29-02) Silk based nanocomposites for biophotonic and plasmonic devices

COLUSSO, Elena[1]; PEROTTO, Giovanni[2]; OMENETTO, Fiorenzo[3]; MARTUCCI, Alessandro[*1]
1. Dipartimento di Ingegneria Industriale, Università di Padova, Italy
2. Smart Materials, Istituto Italiano di Tecnologia (IIT), Italy
3. Department of Biomedical Engineering and Department of Physics, Tufts University, USA

17:15

(29-C1-S29-03) Hexaniobate Nanosheets Modified with Biocompatible Polymers

SONE, Chikako[*1]; KAMIBE, Takuma[1]; GUEGAN, Regis[2]; IDOTA, Naokazu[3]; C. YAMASHITA, Akihiro[3]; SUGAHARA, Yoshiyuki[1,4]
1. Department of Applied Chemistry, School of Advanced Science and Engineering, Waseda University, Japan
2. Global Center for Science and Engineering, Waseda University, Japan
3. Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan
4. Kagami Memorial Institute for Materials Science and Technology, Waseda University, Japan

17:30

(29-C1-S29-04) New colorless and transparent organic polymer aerogels via non-aqueous sol-gel process

NAKANISHI, Yuki[*1]; NAKANISHI, Kazuki[2]; KANAMORI, Kazuyoshi[1]
1. Department of Chemistry, Graduate School of Science, Kyoto University, Japan
2. Institute of Material and Systems for Sustainability, Nagoya University, Japan

17:45

(29-C1-S29-05) Penetration of organic polymer at the interface between floating metal oxide gel film and liquid subphase

SHIMOOKA, Hirokazu[*1]; KITAMURA, Mitsuru[1]; KUWABARA, Makoto[2]
1. Kyushu Institute of Technology, Japan
2. Professor emeritus at the University of Tokyo, Japan

■October 29 (Tue) (Room B1A) ■

31:Porous Ceramics: From Innovative Processing to Advanced Applications and Functionalities

Process innovation of porous ceramics III

Session Chairs: SHIMAMURA, Akihiro, AIST

11:00

(29-B1A-S31-15) Hybrid additive manufacturing of porous ceramic architectures (Keynote)

ORTONA, Alberto[*1]
1. SUPSI, Switzerland

11:30

(29-B1A-S31-16) Cross-linked protein crystals as a model template for synthesis of porous materials (Invited)

YAMADA, Yohei[*1]; TOYAMA, Shota[2]; SUZUTA, Takahito[2]; YABUTANI, Tomoki[3]
1. National Institute of Technology, Anan College, Japan
2. Graduate School of Technology, Industrial and Social Sciences, Tokushima University, Japan
3. Paper Industry Innovation Center, Ehime University, Japan

Engineering properties and applications of porous ceramics III

Session Chairs: ORTONA, Alberto, University of Applied Sciences and Arts of Southern Switzerland

13:30

(29-B1A-S31-17) Porous metal (hydr)oxides for drug stabilization and delivery (Invited)

KIM, Hyoung-Jun[1]; KIM, Bo-Kyung[2]; KIM, Tae-il[3]; OKADA, Tomohiko[4]; INADA, Miki[5]; OH, Jae-Min[*1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Republic of Korea
2. Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University, Republic of Korea
3. Department of Biosystems & Biomaterials Science and Engineering, College of Agriculture and Life Sciences, Seoul National University, Republic of Korea
4. Department of Chemistry and Material Engineering, Faculty of Engineering, Shinshu University, Japan
5. Center of Advanced Instrumental Analysis, Kyushu University, Japan

14:00

(29-B1A-S31-18) Photochromism of Layered Oxides with Two-dimensional Nanospace Containing Several Metal Ions (Invited)

KAMADA, Kai[*1]
1. Nagasaki University, Japan

14:30

(29-B1A-S31-19) A Hierarchical Nanoporous Layer Etched on a Silicate Glass with Amphiphilic, AR Properties and Material Retention Capability.

FUJIMA, Takuya[*1,2]; YASUMORO, Keita[1]; USHIODA, Yuki[1]; TABATA, Erika[1]; ITO, Takumi[1]; FUJITA, Yushi[1]
1. Department of Mechanical Engineering, Tokyo City University, Japan
2. Advanced Research Laboratories, Tokyo City University, Japan

(14:45) Coffee Break

Engineering properties and applications of porous ceramics IV

Session Chairs: BERNARD, Samuel, CNRS - university of Limoges

15:15

(29-B1A-S31-20) Ex situ nanoparticles modified electrode for heavy metal detection (Invited)

ABDUL RAZAK, Khairunisak[*1]; LOCKMAN, Zainovia[1]; MATSUDA, Atsunori[2]
1. School of Materials & Mineral Resources Engineering, Universiti Sains Malaysia, Malaysia
2. Department of Electrical and Electronic Engineering, Faculty of Engineering, Toyohashi University of Technology, Japan

Session Chairs: BERNARD, Samuel, CNRS - university of Limoges

15:45

(29-B1A-S31-21) Designing Porous Carbon Electrodes Based on Understanding Local Structures. (Invited)

URITA, Koki[*1]; NOTOHARA, Hiroo[1]; URITA, Chiharu[1]; ARAKI, Takayuki[1]; INOUE, Maya[1]; MORIGUCHI, Isamu[1]
1. Nagasaki University, Japan

16:15

(29-B1A-S31-22) Biomass-derived carbon electrodes: from local atomic structure to electrochemical properties (Invited)

GOMEZ-MARTIN, Aurora[1]; MARTINEZ-FERNANDEZ, Julian[1]; RUTTERT, Mirco[2]; WINTER, Martin[2]; PLACKE, Tobias[2]; RAMIREZ-RICO, Joaquin[*1]
1. Materials Science Institute in Seville, University of Seville - CSIC, Spain.
2. University of Münster, MEET Battery Research Center, Germany

High SSA ceramics I

Session Chairs: INADA, Miki, Kyusyu University

16:45

(29-B1A-S31-23) Rational design of polymer-derived ceramics with porous architectures tuned at various length scales (Keynote)

BERNARD, Samuel[*1]
1. Univ. Limoges, CNRS, IRCER, UMR 7315, France.

17:15

(29-B1A-S31-24) Aluminium doped mesoporous silica in the adsorption thermal energy storage for low temperature applications

MIKSIK, Frantisek[*1,2]; MIYAZAKI, Takahiko[1,2]; INADA, Miki[3]
1. Department of Energy and Environmental Engineering, IGSES, Kyushu University, Japan
2. International Institute for Carbon-Neutral Energy Research, Kyushu University, Japan
3. Center of Advanced Instrumental Analysis, Kyushu University, Japan

17:30

(29-B1A-S31-25) Effect of Pore Size of Anodic Aluminum Oxide Substrate on loading Silica Nanoparticles

SEKIGUCHI, Kazutoshi[*1,2]; NAKANISHI, Takayuki[1]; SEGAWA, Hiroyo[1,3]; YASUMORI, Atsuo[1]
1. Tokyo University of Science, Japan
2. Nissan Chemical Corporation, Japan
3. National Institute for Materials Science, Japan

■October 29 (Tue) (Room B2) ■

32:Crystalline Materials for Electrical, Optical and Medical Applications

Optical material II

Session Chairs: TODA, KENJI, Niigata University

10:45

(29-B2-S32-13) Relationship between glass composition and radiophotoluminescence center formation in Ag-doped phosphate glasses

KAWAMOTO, Hiroki[*1]; KOSHIMIZU, Masanori[1]; FUJIMOTO, Yutaka[1]; OKADA, Go[2]; MASAI, Hirokazu[3]; YANAGIDA, Takayuki[4]; ASAI, Keisuke[1]
1. Graduate School of Engineering, Tohoku University, Japan
2. College of Bioscience and Chemistry, Kanazawa Institute of Technology, Japan
3. National Institute of Advanced Science and Technology, Japan
4. Graduate School of Material Science, Nara Institute of Science Technology, Japan

11:00

(29-B2-S32-14) High-entropy sesquioxide laser ceramics (Invited)

ZHANG, Guangran[1]; WU, Yiquan[*1]
1. Kazuo Inamori School of Engineering, New York State College of Ceramics, Alfred University, USA

11:30

(29-B2-S32-15) Laser sources development at ISL for IRCM application (Invited)

HILDENBRAND-DHOLLANDE, Anne[*1]; BERROU, Antoine[1]; BIGOTTA, Stefano[1]; DALLOZ, Nicolas[1]; IBACH, Thierry[1]; MEDINA, Manuel Alessandro[1,2]; MOTARD, Arnaud[1,3]; SCHELLHORN, Martin[1]; SCHMITT, Stephan[1]; SCURRIA, Giuseppe[1,3]; WAGNER, Frank R.[2]; MANEK-HONNINGER, Inka[3]
1. French-German Research Institute of Saint-Louis (ISL), France
2. Institut Fresnel, University of Aix Marseille, CNRS, Ecole Centrale Marseille, France
3. CELIA, University of Bordeaux-CNRS-CEA UMR5107, France

Phosphor

Session Chairs: VILLORA, Garcia, NIMS

13:30

(29-B2-S32-16) InP Based Quantum Dots for Wide Color Gamut Display (Invited)

MORIYAMA, Takafumi[*1]; SASAKI, Hirokazu[1]; UMEDA, Naoki[1]; SAKURA, Naoki[1]; MITSUKA, Yuko[1]; KIDO, Makoto[1]; MATSUURA, Keisuke[1]; NOMURA, Takeshi[1]; HIRANO, Shin-ichi[2]; AKIMOTO, Yuji[1]
1. Shoei Chemical, Inc., Japan
2. Shanghai Jiao Tong University, China

14:00

(29-B2-S32-17) Color tunable single-phase Eu^{2+} and Ce^{3+} co-activated Sr_2LiAlO_4 phosphors (Invited)

HA, Jungmin[1]; KIM, Yoon Hwa[2]; NOVITSKAYA, Ekaterina[3]; WANG, Zhenbin[4]; SANCHEZ, Maritza[1]; GRAEVE, Olivia A.[1,3]; ONG, Shyue Ping[4]; IM, Won Bin[2]; MCKITTRICK, Joanna[*1,3]
1. Materials Science and Engineering Program, University of California San Diego, USA
2. School of Materials Science and Engineering, Chonnam National University, Korea
3. Department of Mechanical and Aerospace Engineering, University of California San Diego, USA
4. Department of Nanoengineering, University of California San Diego, USA

14:30

(29-B2-S32-18) Abnormal Luminescence Property of Phosphor Materials Synthesized by the Melt Quenching Technique (Invited)

TODA, KENJI[*1]
1. Niigata Univ., Japan

15:00

(29-B2-S32-19) Anisotropic Excitation Polarization Response from a Single White Light-emitting β-$NaYF_4$:Yb^{3+},Pr^{3+} Microcrystal

YANG, Dandan[*1]; ZHAN, Qiuqiang[2]; DONG, Guoping[1]; QIU, Jianrong[3]
1. State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China
2. Centre for Optical and Electromagnetic Research, South China Academy of Advanced Optoelectronics, South China Normal University, Guangzhou 510006, China
3. College of Optical Science and Engineering, State Key Laboratory of Modern Optical Instrumentation, Zhejiang University, Hangzhou 310027, China

15:15

(29-B2-S32-20) Synthesis of Mn^{4+} activated Na_2SiF_6 red-emitting phosphors using an ionic liquid

HA, Jungmin[1]; NOVITSKAYA, Ekaterina[2]; LAM, Natalie[3]; SANCHEZ, Maritza[1]; KIM, Yoon Hwa[4]; LI, Zezhou[1]; IM, Won Bin[5]; GRAEVE, Olivia A.[1,2]; MCKITTRICK, Joanna[*1,2]
1. Materials Science and Engineering Program, University of California San Diego, USA
2. Department of Mechanical and Aerospace Engineering, University of California San Diego, USA
3. Department of Nanoengineering, University of California San Diego, USA
4. School of Materials Science and Engineering, Chonnam National University, Korea

5. Division of Materials Science and Engineering, Hanyang University, Korea

15:30

(29-B2-S32-21) Investigation of formation process of YAG:Ce exhibiting orange-red luminescence

NAKAMURA, Hitomi[*1]; SHINOZAKI, Kenji[1]; AKAI, Tomoko[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

(15:45) Coffee Break

Optical material III

Session Chairs: MCKITTRICK, Joanna, University of California San Diego

16:00

(29-B2-S32-22) Crystal growth of hybrid perovskite single crystals and their photoelectric properties (Invited)

TAO, Xutang[*1]; JU, Dianxing[1]; YIN, Jian[1]; JIANG, Xiaomei[1]
1. State Key Lab. of Crystal Materials, Shandong University, China
2. State Key Lab. of Crystal Materials, Shandong University, China
3. State Key Lab. of Crystal Materials, Shandong University, China
4. State Key Lab. of Crystal Materials, Shandong University, China

16:30

(29-B2-S32-23) Crystallographic orientation control in ceramics by external fields (Invited)

SUZUKI, Tohru[*1]
1. National Institute for Materials Science, Japan

Scintillator I

Session Chairs: MCKITTRICK, Joanna, University of California San Diego

17:00

(29-B2-S32-24) Continued Advances in Engineering Scintillators for Application Purpose, From Idea to Product (Invited)

FRANK, John[*1]; MENGE, Peter[1]; OUSPENSKI, Vladimir[2]
1. Saint-Gobain Crystals Hiram, USA
2. Saint-Gobain Research Paris, France

17:30

(29-B2-S32-25) High-Resolution Gamma-Ray Halide Scintillators (Invited)

ZHURAVLEVA, Mariya[*1,2]; RUTSTROM, Daniel[1,2]; STAND, Luis[1]; LOYD, Matthew[1,2]; KOSCHAN, Merry[1]; MELCHER, Charles[1,2,3]
1. Scintillation Materials Research Center, University of Tennessee, USA
2. Department of Materials Science and Engineering, University of Tennessee, USA
3. Department of Nuclear Engineering, University of Tennessee, USA

■October 29 (Tue) (Room B1B) ■

33:Multifunctional Coatings for Structural, Energy and Environmental Applications JFCA/ADCAL and Cross-sectoral Research cooperation of Ceramic Coating support Symposia

Durability Performance of Environmental Barrier Coatings (EBCs)

Session Chairs: KITAOKA, Satoshi, Japan Fine Ceramics Center

10:30

(29-B1B-S33-16) Delamination problems in environmental barrier coatings (EBCs): recent achievements and challenges (Invited)

KAGAWA, Yutaka[*1]
1. Katayanagi Advanced Research Institutes, Tokyo University of Technology, Japan

11:00

(29-B1B-S33-17) Development and evaluation for CMC with EBC (Invited)

NAKAMURA, Takeshi[*1]; KOTANI, Masahiro[1]; HIRANO, Hiroto[1]
1. IHI Corporation, Japan

11:30

(29-B1B-S33-18) Determination of Interface Toughness and Energy Release Rate in Delamination of Environmental Barrier Coatings on SiC/SiC for Lifetime Prediction

KAKISAWA, Hideki[*1]; KAWAI, Emi[2]; YAMAGUCHI, Norio[3]; YOKOI, Taishi[3]; KUBO, Atsushi[2]; KITAOKA, Satoshi[3]; UMENO, Yoshitaka[2]
1. National Institute for Materials Science, Japan
2. Institute of Industrial Science, the University of Tokyo, Japan
3. Japan Fine Ceramics Center, Japan

11:45

(29-B1B-S33-19) Microstructural Change during Heat Exposure of Modeled Environmental Barrier Coatings

HASEGAWA, Makoto[*1]; SHIBUYA, Toshiki[2]; IUCHI, Atsuhita[2]
1. Division of Systems Research, Faculty of Engineering, Yokohama National University, Japan
2. Department of Systems Integration, Graduate School of Engineering, Yokohama National University, Japan

Aerosol Deposition (AD) Processes in Energy Applications

Session Chairs: AKEDO, Jun, AIST

13:30

(29-B1B-S33-20) Aerosol Deposition of High-Temperature Ceramic Capacitors for Power Inverters in Electric Drive Vehicles (Invited)

BALACHANDRAN, U (Balu)[*1]
1. Argonne National Laboratory, USA

14:00

(29-B1B-S33-21) Photon Associated Thermal Annealing for Magnetoelectric Heterostructure Fabricated by GSV process (Invited)

RYU, Jungho[*1]
1. School of Materials Science and Engineering, Yeungnam University, Korea

14:15

(29-B1B-S33-22) The evaluation of piezoelectric property and vibration energy harvester of $BaTiO_3$ thick film formed by Aerosol Deposition method (Invited)

KAWAKAMI, Yoshihiro[*1]; ARAI, Ken-Ichi[1]
1. Research Institute for Electromagnetic Materials, Japan

14:45

(29-B1B-S33-23) Structural Characteristics of Ferroelectric $PbTiO_3$ AD Films by Synchrotron Radiation X-ray Diffraction

ABE, Tomohiro[*1]; WU, Lin[1]; MORIYOSHI, Chikako[1]; KUROIWA, Yoshihiro[1]; SUZUKI, Muneyasu[2]; AOYAGI, Rintaro[3]; AKEDO, Jun[3]
1. Graduate School of Science, Hiroshima University, Japan
2. Human Augmentation Research Center, AIST, Japan
3. Advanced Coating Technology Research Center, Department of Electronics and Manufacturing, AIST, Japan

15:00

(29-B1B-S33-24) Polarization and Leakage Current Properties of Highly Densely Aggregated PZT films Deposited by Newly Process at a Room Temperature

SUZUKI, Muneyasu[*1,2]; USHIJIMA, Hiroshi[1]; TSUCHIYA, Tetsuo[2]; AKEDO, Jun[2]
1. Human Augmentation Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(15:15) Coffee Break

Aerosol Deposition (AD) Processes in Functional Applications

Session Chairs: BALACHANDRAN, Balu, Argonne National Laboratory

15:45

(29-B1B-S33-25) The Aerosol Deposition Method: Novel Ideas for Functional Films (Invited)

MOOS, Ralf[*1]; SCHUBERT, Michaela[1]; NIEKE, Philipp[1]; LEUPOLD, Nico[1]; KITA, Jaroslaw[1]; HANFT, Dominik[1]; NAZARENUS, Tobias[1]; GLOSSE, Philipp[1]; EXNER, Joerg[1]; SCHUBERT, Michael[1]
1. University of Bayreuth, Department of Functional Materials, Germany

16:15

(29-B1B-S33-26) Fabrication and properties of oxide thermoelectric thick film elements by aerosol deposition method (Invited)

NAKAMURA, Yuichi[*1]; INOUE, Mitsuteru[1]
1. Toyohashi University of Technology, Japan

16:30

(29-B1B-S33-27) Fabrication of lead halide perovskite films via aerosol deposition method for optoelectronic applications

LEUPOLD, Nico[*1]; LUKAS, Daniel[1]; HERRMANNSDOERFER, Tim[1]; PANZER, Fabian[1,2]; MOOS, Ralf[1]
1. Department of Functional Materials, University of Bayreuth, Germany
2. Soft Matter Optoelectronics, University of Bayreuth, Germany

16:45

(29-B1B-S33-28) Fully Room-temperature-fabricated Ultra-sensitive Humidity Sensor by Adopting Ceramic/Metal Halide perovskite Composites

CHO, Myung-Yeon[*1]; KIM, Ik-Soo[1]; KIM, Sunghoon[2]; KIM, Nam-Young[3]; KIM, Sang-Wook[2]; OH, Jong-Min[1]
1. Department of Electronic Materials Engineering, Kwangwoon University, Republic of Korea
2. 2Department of Molecular Science and Technology, Ajou University, Republic of Korea
3. RFIC Center, Kwangwoon University, Republic of Korea

17:00

(29-B1B-S33-29) Aerosol deposition coating on front and back 3D curved glass for smartphone. (Invited)

PARK, Jae-Hyuk[*1]; KIM, Dae-gun[1]; SEOK, Hye-Won[1]; LEE, Kyung-min[1]
1. IONES Co, Ltd, Korea

17:30

(29-B1B-S33-30) Fracture and Deformation Behavior of Single Crystalline Alumina Fine Particles in *In Situ* Compression Test for Understanding of Aerosol Deposition Process

SHINODA, Kentaro[*1]; KUROYANAGI, Shota[1,2]; YUMOTO, Atsushi[3]; AKEDO, Jun[1]
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan
3. College of Engineering, Shibaura Institute of Technology, Japan

17:45

(29-B1B-S33-31) Titanium Nitride Coating Produced by Aerosol Deposition Method for Die Repair

AOKI, Koichiro[*1]; HASEGAWA, Makoto[2]; TAKAGI, Shinichi[3]
1. Department of Mechanical Engineering, Materials Science, and Ocean Engineering, Graduate School of Engineering Science, Yokohama National University, Japan
2. Division of Systems Research, Faculty of Engineering, Yokohama National University, Japan
3. Mechanical and Material Technological Group, Kanagawa Institute of Industrial Science and Technology, Japan

■October 29 (Tue) (Room A3) ■

36:Second Young Professional Forum (YPF) in PACRIM

Progress in Design and Development of High Performance Materials

Session Chairs: MIURA, Akira, Faculty of Engineering, Hokkaido University

10:15

(29-A3-S36-01) Influence of Sintering Additives on Functionality of Liquid-Phase Sintered Silicon Carbide Ceramics (Invited)

KIM, Young-Wook[*1]
1. Department of Materials Science and Engineering, University of Seoul, Seoul 02504, Republic of Korea

10:45

(29-A3-S36-02) Oxidation and thermal shock behavior of porous Si_3N_4 ceramics (Invited)

LIANG, Hanqin[1]; ZENG, Yuping[*1]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

11:15

(29-A3-S36-03) Pressureless sintering, properties and ablation mechanism of (Ta,Hf)C-SiC ceramics (Invited)

YIN, Jie[*1]; ZHANG, Buhao[2]; LIU, Xuejian[3]; HUANG, Zhengren[4]
1. State Key Laboratory of High-Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, CAS, China
2. State Key Laboratory of High-Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, CAS; University of Chinese Academy of Sciences, China
3. State Key Laboratory of High-Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, CAS, China
4. State Key Laboratory of High-Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, CAS; ; Ningbo Institute of Materials Technology and Engineering, CAS, China

11:45

(29-A3-S36-04) First-principles study, fabrication and characterization of high-entropy metal carbides (Invited)

CHU, Yanhui[*1]
1. South China University of Technology, China

Session Chairs: KIM, Young-Wook, Department of Materials Science and Engineering, University of Seoul, Seoul 02504, Republic of Korea

13:30

(29-A3-S36-05) Materials Selection for High Temperature Turbine Blades in Turbochargers (Invited)

MASI, Luca[*1]; FREDRIKSSON, Claes[1]; ZHAO, Wen[1]
1. Granta Design Ltd, subsidiary of Ansys Inc, UK

14:00

(29-A3-S36-06) Breakdown Characteristics of Silicon Nitrides with Various Thicknesses (Invited)

MATSUNAGA, Chika[*1]; ZHOU, You[1]; TANABE, Gen[2]; HYUGA, Hideki[1]; HIRAO, Kiyoshi[1]
1. National Institute of Advanced Industrial Science and Technology, Japan
2. Japan Fine Ceramics Co., Ltd., Japan

14:30

(29-A3-S36-07) Synthesis of Binary and Ternary Nitrides by Self-Combustion Synthesis using $NaNH_2$

MIURA, Akira[*1]; ODAHARA, Jin[2]; ROSERO-NAVARRO, Nataly Carolina[1]; NAGAO, Masanori[3]; TANAKA, Isao[3]; TADANAGA, Kiyoharu[1]
1. Faculty of Engineering, Hokkaido University, Japan

2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
3. Center for Crystal Science and Technology, University of Yamanashi, Japan

(14:45) Coffee Break

On the Design and Development of Novel Sustainable Materials

Session Chairs: MASI, Luca, Granta Design Ltd, subsidiary of Ansys Inc, 300 Rustat House, CB1 7EG, Cambridge, UK

15:00

(29-A3-S36-08) Porous Ceramics Prepared by Selective Laser Sintering (SLS) Using Hollow Microspheres as Raw Materials (Invited)

WU, Jia-Min[*1]; CHEN, Ying[1]; CHEN, An-Nan[1]; LI, Meng[1]; LI, Chen-Hui[1]; SHI, Yu-Sheng[1]
1. Huazhong University of Science and Technology, China

15:30

(29-A3-S36-09) Development of Photoelectrochemical Cells for Efficient Sunlight-Driven Water Splitting (Invited)

HIGASHI, Tomohiro[*1]; NISHIYAMA, Hiroshi[1]; SASAKI, Yutaka[1]; HISATOMI, Takashi[2]; KATAYAMA, Masao[1]; MINEGISHI, Tsutomu[1]; YAMADA, Taro[1]; DOMEN, Kazunari[1,2]
1. Department of Chemical System Engineering, The University of Tokyo, Japan
2. Center for Energy & Environmental Science, Shinshu University, Japan

16:00

(29-A3-S36-10) Ultra-low thermal conductivity nitrogen-doped graphene aerogels for thermal insulation (Invited)

XU, Jie[*1]; WU, Wanli[1]; MENG, Xuanyu[1]; WANG, Yujian[1]; GAO, Feng[1]
1. Northwestern Polytechnical University, China

Session Chairs: ZHOU, Aiguo, Henan Polytechnic University

16:30

(29-A3-S36-11) Review of Novel Functional Materials Derived from Agricultural Precursors

GUPTA, Surojit[*1]
1. University of North Dakota, USA

16:45

(29-A3-S36-12) High temperature electrolysis: global efforts to reduce the CO_2 footprint of H_2 production

WIFF, Juan Paulo[*1]
1. Air Liquide Laboratories, Japan

17:00

(29-A3-S36-13) On the Design of Novel Hydrogels by Using Environmentally Benign Precursors

MILES, Annie[*1]; TAMONDONG, Kyle[1]; JAVAID, Sabah[1]; GUPTA, Surojit[1]
1. University of North Dakota, USA

Recent Developments in MAX Phases

Session Chairs: GUPTA, Surojit, University of North Dakota

17:15

(29-A3-S36-14) Novel MAX phases and their Functionality (Invited)

MIAN, Li[1]; JUN, Lu[2]; KAN, Luo[1]; YOUBING, Li[1]; KEKE, Chang[1]; KE, Chen[1]; JIE, Zhou[1]; JOHANNA, Rosen[2]; LARS, Hultman[2]; PER, Eklund[2]; PER, Persson[2]; SHIYU, Du[1]; ZHIFANG, Chai[1]; ZHENGREN, Huang[1]; QING, Huang[*1]
1. Engineering Laboratory of Advanced Energy Materials, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences, China
2. Department of Physics, Chemistry, and Biology (IFM), Linköping University, Sweden

17:30

(29-A3-S36-15) Synthesis and Sintering of double-A-layer MAX phase Mo_2Ga_2C (Invited)

ZHOU, Aiguo[*1]; HU, Qianku[1]; XIA, Qixun[1]; JIN, Sen[1]; HE, Hongtian[1]
1. Henan Polytechnic University, China

17:45

(29-A3-S36-16) Theoretical Study on the Intrinsic Point Defect Sinks in MAX Phases under Irradiation (Invited)

WANG, Jiemin[*1]; LIU, Bin[2]; WANG, Jingyang[1]
1. Advanced Ceramics and Composites Division, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China
2. School of Materials Science and Engineering, Shanghai University, China

■October 29 (Tue) (Room B7) ■

S1:Fulrath Memorial Symposium on Advanced Ceramics

Ceramic Processing

Session Chairs: KISHI, Hiroshi (1) ; TROLIER-MCKINSTRY, Susan (2), (1)TAIYO YUDEN Co., Ltd., (2)The Pennsylvania State University

(10:30) Opening

10:45

(29-B7-SS1-01) Advanced control method of ceramic powder using nanopulsed electric field (Invited)

NAKAYAMA, Tadachika[*1]; NIIHARA, Koichi[1]
1. Nagaoka University of Technology, Japan

11:00

(29-B7-SS1-02) Electric Fields Effects During Sintering: The ACerS Richard M. Fulrath award winner's lecture in Japan 2019 (Invited)

VAN BENTHEM, Klaus[*1]
1. University of California,Davis, USA

11:15

(29-B7-SS1-03) Low Temperature Processing for Electronics Ceramic Device and its Future Perspective (Invited)

IMANAKA, Yoshihiko[*1]
1. Fujitsu Laboratories Ltd., Japan

11:30

(29-B7-SS1-04) AC Field-Assisted Ceramic Processing (Invited)

DICKEY, Elizabeth C.[*1]; GRIMLEY, Carolyn[1]
1. North Carolina State University, United States

11:45

(29-B7-SS1-05) Recent Progress of Aluminum Nitride Powder and Ceramics for Electric Devices (Invited)

KANECHIKA, Yukihiro[*1]; KURAMOTO, Akimasa[1]; IMOTO, Yasushi[1]; INAKI, Yoshitaka[1]; FUJII, Saiko[1]; MASADA, Isao[1]; NAWATA, Teruhiko[1]
1. Tokuyama Corp., Japan

IoT and Devices

Session Chairs: IWAZAKI, Yoshiki (1) ; DICKEY, Elizabeth C (2), (1)TAIYO YUDEN Co., Ltd., (2)North Carolina State University

13:00

(29-B7-SS1-06) Current and Future Technology and Business of MLCC (Invited)

CHAZONO, Hirokazu[*1]
1. Taiyo Yuden Co., Ltd., Japan

13:15

(29-B7-SS1-07) Mechanical Energy Harvesting for the Internet of Things (Invited)

WANG, Dixiong[1]; YEO, Hong Goo[1]; KOVACOVA, Veronika[1];

YANG, Jung In[1]; MENG, Miao[1]; XUE, Tiancheng[3]; ROUNDY, Shad[3]; LACH, John[2]; CALHOUN, Ben[2]; KIANI, Mehdi[1]; TROLIER-MCKINSTRY, Susan[*1]
1. The Pennsylvania State University, USA
2. University of Virginia, USA
3. University of Utah, USA

13:30

(29-B7-SS1-08) Multilayer Ceramic Chip Varistors with Low Varistor-Voltage for ESD-Protection (Invited)

KOGA, Eiichi[*1]
1. Panasonic Corporation, Japan

13:45

(29-B7-SS1-09) Electrode Stress and Composition Effects on Performance of Ferroelectric Hafnium Zirconium Oxide Films: The ACerS Richard M. Fulrath award winner's lecture in Japan 2019 (Invited)

IHLEFELD, Jon F.[*1,2]; FIELDS, Shelby S.[1]; SMITH, Sean W.[3]; WOLFLEY, Steven[3]; HENRY, M. David[3]; SALES, Maria G.[1]; MCDONNELL, Stephen J.[1]; DAVIDS, Paul S.[3]
1. Department of Materials Science and Engineering, University of Virginia, USA
2. Department of Electrical and Computer Engineering, University of Virginia, USA
3. Sandia National Laboratories, USA

14:00

(29-B7-SS1-10) Recent sensor applications of piezoelectric materials (Invited)

KISHI, Hiroshi[*1]
1. Research and Development Laboratory, TAIYO YUDEN CO., LTD., Japan

14:15

(29-B7-SS1-11) Innovating Healthcare Solutions With Integrated Flexible Technology: The ACerS Richard M. Fulrath award winner's lecture in Japan 2019 (Invited)

WAUGH, Mark[*1]
1. Murata Electronics North America, Inc., Japan

14:30

(29-B7-SS1-12) Development of Multilayer Type Thermoelectric Generator for Wireless Sensor Network Node (Invited)

NAKAMURA, Takanori[*1]
1. Corporate Technology & Business Development Unit, Murata Manufacturing Co., Ltd, Japan

Characterization

Session Chairs: IWAZAKI, Yoshiki (1) ; DICKEY, Elizabeth C (2), (1)TAIYO YUDEN Co., Ltd., (2)North Carolina State University

14:45

(29-B7-SS1-13) Nanoscale Functional Tomography of Dielectrics and Ferroelectrics (Invited)

SONG, Jingfeng[1]; MORAN, Thomas[1]; STEFFES, James[1]; MARTIN, Michael[1]; RAMESH, Ramamoorthy[2]; HUEY, Bryan[*1]
1. University of Connecticut, Dept. of Materials Science and Engineering, USA
2. University of California Berkeley, Dept. of Materials Science and Engineering, USA

15:00

(29-B7-SS1-14) Development and Application of Electromagnetic Field Imaging STEM (Invited)

SHIBATA, Naoya[*1,2]
1. Institute of Engineering Innovation, The University of Tokyo, Japan
2. NSRL, Japan Fine Ceramics Center, Japan

Fundamentals, Electrochemistry, Energy related

Session Chairs: ANDO, Akira(1) ; HALBIG, Michael C. (2), (1)Murata Manufacturing Co., Ltd., (2)NASA Glenn Research Center

15:45

(29-B7-SS1-15) Development of new process for mass-producing nanoparticles and recent progress of Cd-free type Quantum dots for Display (Invited)

SASAKI, Hirokazu[*1]; MORIYAMA, Takafumi[1]; SAKURA, Naoki[1]; MITSUKA, Yuko[1]; UMEDA, Naoki[1]; KIDO, Makoto[1]; MATSUURA, Keisuke[1]; NOMURA, Takeshi[1]; AKIMOTO, Yuji[1]; HIRANO, Shin-ichi[2]
1. Shoei Chemical Inc., Japan
2. Shanghai Jiao Tong University, China

16:00

(29-B7-SS1-16) Crystallization of nepheline and related phases from glass: The ACerS Richard M. Fulrath award winner's lecture in Japan 2019 (Invited)

MCCLOY, John[*1,2]
1. Washington State University, USA
2. University of Sheffield, UK

16:15

(29-B7-SS1-17) CeraCharge™ - world's first rechargeable solid-state SMD battery (Invited)

SATO, Hiroshi[*1]; WANG, Yongli[1]; OISHI, Masahiro[1]; ENOKIDO, Yasushi[2]
1. TDK Electronics GmbH & Co OG, Japan
2. TDK Corporation, Japan

16:30

(29-B7-SS1-18) Visible Light-Activated and Self-Supported Photocatalytic Nanogrids (Invited)

LEE, Jusang[1]; TOPCU, Selda[1]; GOUMA, Pelagia-Irene (Perena)[*1,2]
1. Center for Nanomaterials and Sensor Development, USA
2. Dept of Materials Science & Engineering, The Ohio State University, USA

16:45

(29-B7-SS1-19) Na^+ conducting sulfide electrolytes for all-solid-state batteries (Invited)

HAYASHI, Akitoshi[*1]
1. Osaka Prefecture University, Japan

17:00

(29-B7-SS1-20) Optimization of $SrTiO_3$ and $BaTiO_3$-based catalysts for splitting water (Invited)

SONG, Wenjia[1]; ZHANG, Mingyi[1]; SALVADOR, Paul[1]; ROHRER, Gregory[*1]
1. Department of Materials Science and Engineering, Carnegie Mellon University, USA

Special Lecture to Commemorate the 40th Anniversary of the ACerS W. David Kingery Award

Session Chairs: ANDO, Akira, Murata Manufacturing Co., Ltd.

17:15

(29-B7-SS1-21) Physical properties of crystalline IGZO and its applications (Invited)

YAMAZAKI, Shunpei[*1]
1. Semiconductor Energy Laboratory Co., Ltd., Japan

■October 30 (Wed) (Room B5) ■

02:Intensive Session in Symposium 2: Proton Conducting Ceramics and Applications

PCC electrolyte II

Session Chairs: UDA, Testuya, Kyoto University

8:30

(30-B5-S02-29) Design of highly efficient proton-conducting solid oxide fuel cells with multi-layered electrolyte membranes

OTOMO, Junichiro[*1]; KOJO, Gen[1]; SAKATA, Kazuma[1]; MATSUO, Hiroki[1]; MATSUZAKI, Yoshio[2,3]
1. Department of Environment Systems, Graduate School of Frontier Sciences, The University of Tokyo, Japan
2. Fundamental Technology Department, Tokyo Gas Co., Ltd.), Japan
3. Next-Generation Fuel Cell Research Center (NEXT-FC), Kyushu University), Japan

8:45

(30-B5-S02-30) Arrangement of water molecules and high proton conductivity of tunnel structure phosphate, $KMg_{1-x}H_{2x}(PO_3)_3{\cdot}yH_2O$

MATSUDA, Yasuaki[*1]; FUNAKOSHI, Kousei[1]; SEBE, Ryosuke[1]; KOBAYASHI, Genki[2]; YONEMURA, Masao[3]; IMANISHI, Nobuyuki[4]; MORI, Daisuke[4]; HIGASHIMOTO, Shinya[1]
1. Department of Applied Chemistry, Faculty of Engineering, Osaka Institute of Technology, Japan
2. Research Center of Integrative Molecular Systems (CIMoS), Institute for Molecular Science, Japan
3. Institute of Materials Structure Science, High Energy Accelerator Research Organization, Japan
4. Department of Chemistry for Materials, Graduate School of Engineering, Mie University, Japan

9:00

(30-B5-S02-31) Electrical Properties of Tin Phosphate Glass Synthesized by Sol-Gel Method

OOKAWA, Yoshiaki[*1]; AKIYAMA, Kazuhiko[1]; NOMURA, Kiyoshi[1]; PAVIC, Luka[2]; MILANKOVIC, Andrea Mogus[2]; KUBUKI, Shiro[1]
1. Tokyo Metropolitan University, Japan
2. Ruđer Bošković Institute, Croatia

PCC electrolyte III

Session Chairs: AMEZAWA, Koji, Tohoku University

9:15

(30-B5-S02-32) Fabrication processes for high performance PCFC (Invited)

UDA, TETSUYA[*1]
1. Department of Materials Science and Technology, Kyoto University, Japan

9:45

(30-B5-S02-33) Low-Temperature Proton Dynamics in $BaZrO_3$ (Invited)

KOLODIAZHNYI, Taras[*1]; PULPOL, Phieraya[2]; VITTAYAKORN, Wanwilai[2]; VITTAYAKORN, Naratip[3]
1. National Institute for Materials Science, Japan
2. King Mongkut's Institute of Technology Ladkrabang, College of Nanotechnology, Thailand
3. King Mongkut's Institute of Technology Ladkrabang, Faculty of Science, Thailand

10:00

(30-B5-S02-34) Chemical sintering of $BaZrO_3$ based protonic ceramics

YAMAGUCHI, Yuki[*1]; SHIMADA, Hiroyuki[1]; SUMI, Hirofumi[1]; NOMURA, Katsuhiro[1]; HAMAO, Naoki[1]; HAMAMOTO, Koichi[1]; FUJISHIRO, Yoshinobu[1]
1. Department of Materials and Chemistry, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(10:15) Coffee Break

PCC modelling

Session Chairs: LEE, Jong-Ho, Korea Institute of Science and Technology, University of Science and Technology

10:30

(30-B5-S02-35) Machine learning for proton-conducting oxide electrolytes (Invited)

YAMAZAKI, Yoshihiro[*1,2,3]
1. Kyushu University Platform of Inter-/Transdisciplinary Energy Research (Q-PIT), Kyushu University, Japan
2. INAMORI Frontier Research Center, Kyushu University, Japan
3. Department of Materials Science and Engineering, Kyushu University, Japan

11:00

(30-B5-S02-36) Numerical analysis of current efficiency with different fuel utilization in a tubular protonic ceramic fuel cell (PCFC)

LI, Kunpeng[*1]; KAWAMURA, Toshiki[2]; OTA, Atsuhito[3]; OKUYAMA, Yuji[4]; ARAKI, Takuto[5]
1. Graduate School of Engineering, Yokohama National University, Japan
2. Graduate School of Engineering Science, Yokohama National University, Japan
3. Graduate School of Engineering Science, Yokohama National University, Japan
4. Faculty of Engineering, Miyazaki University, Japan
5. Faculty of Engineering, Yokohama National University, Japan

11:15

(30-B5-S02-37) Charge Carrier Concentrations in Proton-Conducting Oxides from First Principles

TAGUCHI, Ayako[1]; OGAWA, Takafumi[1]; KUWABARA, Akihide[1]; FISHER, Craig A. J.[*1]
1. Japan Fine Ceramics Center, Japan

11:30

(30-B5-S02-38) The Development of Glass Sealant for PCFC Devices

AKATSUKA, Kazumasa[*1]; TAKAHASHI, Yosuke[1]
1. Noritake Co., Limited, Japan

■October 30 (Wed) (Room B1A) ■

03:Advanced Structural Ceramics for Extreme Environments

Novel processing methods

Session Chairs: WATTS, Jeremy, Missouri University of Science and Technology

10:45

(30-B1A-S03-06) Synthesis, Characterization, and Properties of Transition Metal Carbide Ultra-High Temperature Ceramics (Keynote)

FAHRENHOLTZ, William[*1]; HILMAS, Greg[1]
1. Missouri University of Science and Technology, USA

11:15

(30-B1A-S03-07) Damage Tolerant Carbides for Extreme Fusion Reactor Environments (Invited)

HUMPHRY-BAKER, Samuel A.[*1]
1. Imperial College London, UK

11:45

(30-B1A-S03-08) (TiZrNbTaMe)C(Me=V, Cr, Mo, W) high-entropy carbides prepared by carbothermal reduction-assisted hot pressing

WANG, Yujin[*1,2]; WANG, Kai[1,2]; SU, Wentao[1,2]; CHEN, Lei[1,2]; ZHOU, Yu[1,2]
1. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, China
2. Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of

Industry and Information Technology), Harbin Institute of Technology, China

Materials design, New compositions and composites

Session Chairs: ZHOU, Yanchun, Aerospace Research Institute of Material & Processing Technology

13:30
(30-B1A-S03-09) Synthesis of high quality UHTC powders with various methods (Invited)

LEE, Sea Hoon[*1]; LEE, Hee Jung[1]; ZHAO, Lin[1]; QUYET, Nguyen Van[1]
1. Korea Institute of Materials Science, Japan

14:00
(30-B1A-S03-10) Sintered UHTCMCs for aerospace components reusable beyond 2500° C (Keynote)

SCITI, Diletta[*1]; ZOLI, Luca[1]; VINCI, Antonio[1]; REIMER, Thomas[2]; ESSER, Burkard[2]; MUNGIGUERRA, Stefano[3]; SAVINO, Raffaele[3]
1. Institute of Science and Technology for Ceramics (ISTEC), National Research Council (CNR), Italy
2. German Aerospace Centre (DLR), Germany
3. University of Naples "Federico II", Industrial Engineering Department, Aerospace Section, Italy

14:30
(30-B1A-S03-11) High hardness and strength (Ti,Ta)B_2-(Ta,Ti)C ceramic composites prepared by reactive hot-pressing

HUO, Sijia[*1,2]; CHEN, Qianqian[1,2]; WANG, Yujin[1,2]; CHEN, Lei[1,2]; YAO, Mianyi[1,2]; ZHOU, Yu[1,2]
1. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, China
2. Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of Industry and Information Technology), Harbin Institute of Technology, China

14:45
(30-B1A-S03-12) Scalable preparation of graphene reinforced Zirconium diboride composites with strong dynamic response

ZHANG, Baoxi[*1]
1. Northwestern Polytechnical University, China

15:00
(30-B1A-S03-13) Low Temperature Molten Salt Synthesis of Boride- and Carbide-based Materials for Extreme Environments (Invited)

ZHANG, Shaowei[*1]; LIU, Cheng[1]; ZHANG, Haijun[2]; YEPREM, Aygul[3]
1. College of Engineering, Mathematics and Physical Sciences, University of Exeter, UK
2. The State Key Laboratory of Refractories and Metallurgy, Wuhan University of Science and Technology, China
3. Department of Metallurgical and Materials Engineering, Yildiz Technical University, Turkey

(15:30) Coffee Break

Novel processing methods

Session Chairs: SCITI, Diletta, National Research Council of Italy (CNR)-Institute of Science and Technology for Ceramics (ISTEC)

15:45
(30-B1A-S03-14) Microstructure and mechanical properties of boron carbide/graphene nanoplatelets composites fabricated by hot pressing

WANG, Aiyang[*1]; HE, Qianglong[1]; LIU, Chun[1]; WANG, Weimin[1]; FU, Zhengyi[1]
1. Wuhan university of technology, China

16:00
(30-B1A-S03-15) Thermal shock resistance of laminated ZrB2–SiC ceramic investigated by indentation technique

ZHOU, Peng[*1,2]; ZHANG, Liang[1]; WANG, Wenbin[1]; SONG, Zhendong[1]; CHEN, Wei[1]; YAN, Ming[2]; HAN, Wenbo[3]
1. Institute of Intelligent Manufacturing Technology, Shenzhen Polytechnic, China
2. Department of Materials Science and Engnieering, Southern University of Science and Technology, China
3. Center for Composite Materials, Harbin Institute of Technology, China

16:15
(30-B1A-S03-16) Beyond a solid-solution effect: processing and properties of high-entropy ceramics (Invited)

DEMIRSKYI, Dmytro[*1,2,3]; BORODIANSKA, Hanna[2]; SUZUKI, Tohru S.[2]; NISHIMURA, Toshiyuki[2]; SAKKA, Yoshio[2]; VASYLKIV, Oleg[2]; YOSHIMI, Kyosuke[3]
1. WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Japan
2. National Institute for Materials Science, Japan
3. Department of Materials Science and Engineering, Tohoku University, Japan

16:45
(30-B1A-S03-17) Partially Sintered ZrB_2 For Transpiration Cooling

HEDGECOCK, Rowan John[*1]; VANDEPERRE, Luc[1]
1. Centre for Advanced Structural Ceramics, Department of Materials, Imperial College London, United Kingdom

17:00
(30-B1A-S03-18) In-situ Reaction/Partial Sintering: A Novel Method for Preparing Porous Ultrahigh Temperature Ceramics (UHTCs) (Invited)

ZHOU, Yanchun[*1]; CHEN, Heng[2]; XIANG, Huimin[1]; DAI, Fu-zhi[1]
1. Aerospace Research Institute of Materials & Processing Technology, China
2. Tianjin University, China

17:30
(30-B1A-S03-19) High-Temperature Oxidation of amorphous Si_2BC_3N monoliths sintered by high pressure

LIANG, Bin[*1]; YANG, Zhihua[2]; JIA, Dechang[3]; ZHOU, Yu[4]
1. Division of Energy and Environment, Graduate School at Shenzhen, Tsinghua University, P.R. China ; Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology (HIT), P.R. China ; Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of Industry and Information Technology), HIT, P.R. China
2. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology (HIT), Harbin 150080, P.R. China ; Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of Industry and Information Technology), HIT, P.R. China
3. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology (HIT), P.R. China ; Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of Industry and Information Technology), HIT, P.R. China
4. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology (HIT), Harbin 150080, P.R. China ; Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of Industry and Information Technology), HIT, P.R. China

17:45
(30-B1A-S03-20) Microstructural development and mechanical properties of pressureless sintered TiB2-TiC composites

YAO, Mianyi[*1,2]; CHEN, Lei[1,2]; HUO, Sijia[1,2]; WANG, Yujin[1,2]; OUYANG, Jia-hu[1,2]; GU, Hui[3]; ZHOU, Yu[1,2]
1. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, China
2. Key Laboratory of Advanced Structure-Function Integrated Materials and Green Manufacturing Technology (Ministry of Industry and Information Technology), Harbin Institute of Technology, China
3. Materials Genome Institute, School of Materials Science and Engineering, Shanghai University, China

■October 30 (Wed) (Room B5) ■

04:Symposium on Multiferroic Materials

Session Chairs: YU, Pu, Tsinghua University

13:30

(30-B5-S04-24) Polar magnetic oxides for magnetoelectric multiferroicity (Invited)

ATHINARAYANAN, Sundaresan[*1]; GHARA, Somnath[1]; PN, Ravishankar[1]

1. Jawaharlal Nehru Centre for Advanced Scientific Research, India

14:00

(30-B5-S04-25) Enhanced composite multiferroics through epitaxial stabilization (Invited)

HERON, John T.[*1]

1. Department of Materials Science and Engineering, University of Michigan, USA

14:30

(30-B5-S04-26) Nanosized Magnetic Textures in Multiferroic Hexaferrites (Invited)

MORI, S.[*1]

1. Department of Materials Science, Osaka Prefecture University, Japan

14:45

(30-B5-S04-27) Design and observation of ferroelectric topological structures (Invited)

KAI DU, Kai[1]; ZHANG, Meng[2]; ZHOU, ZhengNan[1]; XIE, Yan Wu[2]; REN, Zhao Hui[3]; TIAN, He[*1]; ZHANG, Ze[1]

1. Center of Electron Microscopy, School of Materials Science and Engineering, Zhejiang University, China
2. School of Physics, Zhejiang University, China
3. State Key Laboratory of Silicon Materials, School of Materials Science and Engineering, Zhejiang University, China

15:00

(30-B5-S04-28) Oxygen Vacancies Induced Effects in Lead Based Single Phase Multiferroics (Invited)

EIRAS, Joseph Antony[*1]

1. São Carlos Federal University / São Carlos / SP - BRAZIL

15:30

(30-B5-S04-29) Magnetoelectric coupling of the composite thin film with discrete string of in-situ-packed-NZFO-particles in the matrix BTO (Invited)

TANG, Yu[1]; WANG, Zongrong[1]; MA, Ning[1]; DU, Piyi[*1]

1. Zhejiang University, China

16:00

(30-B5-S04-30) Absence of ferroelectricity in double-perovskite Y_2CoMnO_6 single crystals

WANG, Shumin[1]; ZHENG, Shuhan[1]; LIN, Lin[*1]; TANG, Yongsen[1]; ZHANG, Junhu[1]; CHEN, Rui[2]; WANG, Junfeng[2]; LU, Chengliang[2]; YAN, Zhibo[1]; JIANG, Xiangping[3]; LIU, Junming[1]

1. Laboratory of Solid State Microstructures, Nanjing University, China
2. Wuhan National High Magnetic Field Center and School of Physics, Huazhong University of Science and Technology, China
3. School of Materials Sciences, Jingdezhen Ceramic Institute, China

16:30

(30-B5-S04-32) Ferroelectric and Magnetic Properties in multiferroic single crystal Ga2-x-yScxFeyO3 grown by a floating-zone method

ZHANG, Yang[*1]; WANG, Hui[1]; YU, Jianding[1]; XIA, Zhaoyang[1]; FANG, Jinghong[1]; LI, Haifeng[2,3]; WU, Si[2]; CHENG, Guofeng[1]; RUAN, Yinjie[1]; ITOH, Mitsuru[4]

1. State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, P.R. China
2. Joint Key Laboratory of the Ministry of Education, Institute of Applied Physics and Materials Engineering, University of Macau, Macau SAR, China
3. Department of Physics and Chemistry, Faculty of Science and Technology, University of Macau, Macau SAR, China
4. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan

■October 30 (Wed) (Room B7) ■

05:Polymer Derived Ceramics (PDCs) and Composites

Precursors, Processing, Characterization and Applications I

Session Chairs: COLOMBO, Paolo, University of Padova, Italy

8:30

(30-B7-S05-01) Chemistry as a Decisive Tool to Design Tailored Silazane Precursors for Various Applications (Keynote)

MOTZ, Guenter[*1]; KEMPE, Rhett[2]

1. University of Bayreuth, Ceramic Materials Engineering, Germany
2. University of Bayreuth, Inorganic Chemistry II, Germany

9:00

(30-B7-S05-02) Putting metals into polymer derived ceramics: What happens? (Invited)

YU, Zhaoju[*1]

1. College of Materials, Xiamen University, China

9:30

(30-B7-S05-03) Preparation of Ceramic and Inorganic-organic Hybrid Materials by Chemical Routes Using Polymers and/or Polymerization Processes (Invited)

SUGAHARA, Yoshiyuki[*1,2]

1. Department of Applied Chemistry, School of Advanced Science and Engineering, Waseda University, Japan
2. Kagami Memorial Research Institute for Science and Technology, Waseda University, Japan

10:00

(30-B7-S05-04) Laser and furnace pyrolyzed organosilazane-based glass/ZrO_2 composite coating systems – a comparison

HORCHER, Alexander[*1]; TANGERMANN-GERK, Katja[2]; KRENKEL, Walter[1]; MOTZ, Guenter[1]

1. Department of Ceramic Materials Engineering, University of Bayreuth, Germany
2. Bayerisches Laserzentrum Erlangen, Germany

(10:15) Coffee Break

Precursors, Processing, Characterization and Applications II

Session Chairs: IWAMOTO, Yuji, Nagoya Tech, Japan

10:30

(30-B7-S05-05) Tailoring molecular sieving property and thermal stability of organic inorganic hybrid membranes for gas separation (Invited)

KANEZASHI, Masakoto[*1]

1. Hiroshima University, Japan

11:00

(30-B7-S05-06) Viscoelastic response and insulating property of organic-inorganic hybrids (Invited)

DAIKO, Yusuke[*1]; HONDA, Sawao[1]; ODA, Yuki[1]; KAKUTANI, Yusuke[1]; IWAMOTO, Yuji[1]

1. Nagoya Institute of Technology, Japan

11:30

(30-B7-S05-07) Thermal and Thermomechanical Properties of Silicon Oxycarbides

IONESCU, Emanuel[*1]

1. TU Darmstadt, Institute for Materials Science, Germany

Precursors, Processing, Characterization and Applications III

Session Chairs: SORARU', Gian Domenico, University of Trento, Italy

13:30

(30-B7-S05-09) Sol-Gel Transfer Technique for Fabricating Crystalline Oxide Thin Films on Plastics (Invited)

KOZUKA, Hiromitsu[*1]; NIINUMA, Kota[1]; TAKAHASHI, Mitsuru[1]; YAMADA, Takehito[1]
1. Department of Chemistry of Materials Engineering, Kansai University, Japan

14:30

(30-B7-S05-11) Colossal dielectric permittivity in precursor derived ceramics: challenges in material design (Invited)

KUMAR, Ravi[*1]; BABU T, Ganesh[1]
1. Indian Institute of Technology Madras (IIT Madras), India

15:00

(30-B7-S05-12) Mechanical and Thermal Properties of Si-O-C Ceramics Free from Excess Carbon Obtained by Spark Plasma Sintering

NARISAWA, Masaki[*1]; HANATANI, Rintaro[1]; SEGAWA, Hiroyo[2]; NISHIMURA, Toshiyuki[2]; INOUE, Hirohumi[1]
1. Osaka Prefecture University, Japan
2. National Institute for Materials Science, Japan

(15:15) Coffee Break

Precursors, Processing, Characterization and Applications IV

Session Chairs: MOTZ, Guenter, University of Bayreuth, Germany

15:30

(30-B7-S05-13) Innovative Processing of Preceramic Polymer to Low Density Si-O-C-N Foams and Si_3N_4 Nano-Felts with Ultra-Low Thermal Conductivity (Invited)

SORARU', Gian Domenico[*1]; TOMASI, Michele[1]; ZERA, Emanuele[1]; BIESUZ, Mattia[1]
1. Department of Industrial Engineering, University of Trento, Italy

16:00

(30-B7-S05-14) Mechanics of Processing and Performance of Polymer Derived Ceramic Coatings (Invited)

BORDIA, Rajendra[*1]; WANG, Kaishi[2]; ZHANG, Fangzhou[3]; BRUSH, Lucien[4]
1. Materials Science and Engineering, Clemson University, USA
2. Aerospace Research Institute of Materials & Processing Technology, China
3. Institute for Sustainable Energy, College of Sciences, Shanghai University, China
4. Materials Science and Engineering, University of Washington, USA

17:00

(30-B7-S05-16) Polymer-derived amorphous SiAlCN with unique hydrogen storage property

TADA, Shotaro[1]; MIZUTAINI, Koji[1]; ANDO, Shiori[1]; BERNARD, Samuel[2]; RIEDEL, Ralf[3]; DAIKO, Yusuke[1]; HONDA, Sawao[1]; IWAMOTO, Yuji[*1]
1. Department of Life Science and Applied Chemistry, Graduate School of Engineering, Nagoya Institute of Technology, Japan
2. Institute de Recherche sur les Céramiques (IRCER), UMR CNRS 7315, Faculte des Sciences, Universite de Limoges, France
3. Technische Universität Darmstadt, Germany

■October 30 (Wed) (Room A2) ■

06:Environmental Functional Materials

Invited

Session Chairs: SASAI, Ryo, Shimane University

13:30

(30-A2-S06-01) Nanospace Materials for the Collection and the Decomposition of Target Species in Water (Invited)

OGAWA, Makoto[*1]
1. Vidyasirimedhi Institute of Science and Technology, Thailand

14:00

(30-A2-S06-02) Mineralization of phosphate and fluoride in waste water by using calcium phosphate nano-hybrid (Invited)

TAFU, Masamoto[*1]; TAKAMATSU, Saori[1]; TOSHIMA, Takeshi[1]
1. National Institute of Technology, Toyama College, Japan

Session Chairs: YE, Jinhua, National Institute for Materials Science (NIMS)

14:30

(30-A2-S06-03) Solar Fuel Production: Opportunities for Nanostructures (Invited)

ZOU, Zhigang[*1]
1. Eco-materials and Renewable Energy Research Center, Nanjing University, School of Physics, Nanjing University, China

(15:00) Coffee Break

Session Chairs: YE, Jinhua, National Institute for Materials Science (NIMS)

15:15

(30-A2-S06-04) Carbon Nitride Polymers for Photoredox Reaction (Invited)

WANG, Xinchen[*1]; FANG, Yuanxing[1]
1. State Key Laboratory of Photocatalysis on Energy and Environment, College of Chemistry, Fuzhou University, China.

Session Chairs: NAKAJIMA, Akira, Tokyo Institute of Technology

15:45

(30-A2-S06-05) Controlling Selectivity and Activity of Nanostructured Photocatalysts (Invited)

INUMARU, Kei[*1]
1. Department of Applied Chemistry, Hiroshima University, Japan

Session Chairs: INUMARU, Kei, Hiroshima University

16:15

(30-A2-S06-06) Semiconductor Nanoheterostructures for Photoconversion Applications (Invited)

CHIU, Yi-Hsuan[1]; KUO, Ming-Yu[1]; HSU, Yung-Jung[*1]
1. Department of Materials Science and Engineering, National Chiao Tung University, Taiwan

Photocatalyst, energy

Session Chairs: KATSUMATA, Ken-ichi, Tokyo University of Science

16:45

(30-A2-S06-07) Cocatalyst Modification for Enhancement of Red Light-Sensitive Overall Water-Splitting Heterojunction Photocatalyst

IRIE, Hiroshi[*1,2]; YODA, Masaomi[2]; OSAKI, Junya[2]; TAKASHIMA, Toshihiro[1,2]
1. Clean Energy Research Center, University of Yamanashi, Japan
2. Integrated Graduate School of Medicine, Engineering and Agricultural Sciences, University of Yamanashi, Japan

17:00

(30-A2-S06-08) Novel Photocatalyst Based on Zirconium-Tin Oxide for Hydrogen Production

SHIRAI, Hiroaki[*1]; AKIYAMA, Naoya[1]; NUNOTANI, Naoyoshi[1]; IMANAKA, Nobuhito[1]
1. Osaka University, Japan

17:15

(30-A2-S06-09) Active sites decorated Te nanosheet as an effective cocatalyst for enhanced photocatalytic H_2 evolution

SHI, Li[*1]; YE, Jinhua[1]
1. International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), Japan

17:30

(30-A2-S06-10) Ultrathin cobalt-manganese nanosheets: an efficient platform for enhanced photoelectrochemical water oxidation with

electron-donating effect

YANG, Gaoliang[*1,2]; LI, Yunxiang[1,2]; PANG, Hong[2]; CHANG, Kun[3]; YE, Jinhua[1,2]
1. Graduate School of Chemical Science and Engineering, Hokkaido University, Japan
2. International Center for Materials Nanoarchitectonics (WPI-MANA), National Institutes for Materials Science (NIMS), Japan
3. College of Material Science and Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, 210016, P. R. China

17:45

(30-A2-S06-11) Polymeric carbon nitride for photoelectrochemical water splitting

FANG, Yuanxing[*1]
1. State Key Laboratory of Photocatalysis on Energy and Environment, College of Chemistry, Fuzhou University, China.

■October 30 (Wed) (Room A1) ■

07:Dielectric, Piezoelectric, and Ferroelectric Materials: Advances for Emerging Applications

Devices and Materials

Session Chairs: FUJII, Ichiro, University of Yamanashi

8:30

(30-A1-S07-17) Piezoelectric Thin Films for Adjustable X-ray Optics (Keynote)

BISHOP, Nathan[1]; WALKER, Julian[1]; LIU, Tianning[1]; TENDULKAR, Mohit[1]; DEROO, Casey[2]; COTRONEO, Vincenzo[3]; REID, Paul B.[3]; JACKSON, Thomas N.[1]; TROLIER-MCKINSTRY, Susan[*1]
1. The Pennsylvania State University, USA
2. Iowa State University, USA
3. Smithsonian Astrophysical Observatory, USA

Session Chairs: WATANABE, Takayuki, Canon Inc.

9:15

(30-A1-S07-18) Perspective on Ferroelectric Thin Films for Novel Device Applications (Keynote)

FUJIMURA, Norifumi[*1]; KIRIYA, Daisuke[1]; YOSHIMURA, Takeshi[1]
1. Osaka Prefecture University, Japan

10:00

(30-A1-S07-19) Piezoelectric materials as active biomedical implants (Invited)

GLAUM, Julia[*1]; POON, Kara Kamen[1]; ZHUK, Mikalai[1]; SKAAR FEDJE, Karianne[1]; KARKUSZOVA, Karin[2]; ROTAN, Magnus[1]; WURM, Matthias[3]; LUTZ, Rainer[3]; EINARSRUD, Mari-Ann[1]
1. Department of Materials Science and Engineering, Norwegian University of Science and Technology, Trondheim, Norway
2. Institute of Materials Science and Engineering, Brno University of Technology, Czech Republic
3. Department of Oral and Maxillofacial Surgery, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

(10:30) Coffee Break

Advanced Characterization Methods

Session Chairs: MORI, Shigeo, Osaka Prefecture University

10:45

(30-A1-S07-20) Nanoscale Sctucture Analysis Using High Energy X-ray Diffraction (Invited)

YONEDA, Yasuhiro[*1]; TANIGUCHI, Hiroki[2]; WADA, Satoshi[3]
1. Materials Science Research Center, Japan Atomic Energy Agency, Japan
2. Department of Physics, Nagoya University, Japan
3. Graduate School, Department of Interdisciplinary, University of Yamanashi, Japan

11:15

(30-A1-S07-21) Nanoscale Discharging Phenomena for Dielectric/Piezoelectric Multilayers

MORAN, Thomas[*1]; MARTIN, Michael[1]; SONG, Jingfeng[1]; SUZUKI, Keigo[2]; HOSOKURA, Tadasu[2]; MURAYAMA, Koji[2]; HUEY, Bryan[1]
1. University of Connecticut, USA
2. Murata Manufacturing Co., Ltd, Japan

Session Chairs: FUJIMURA, Norifumi, Osaka Prefecture University

11:30

(30-A1-S07-22) Enhanced transient negative capacitance during inhomogeneous ferroelectric switching

XU, Bin[*1,2]; PROSANDEEV, Sergey[2,3]; PAILLARD, Charles[2,4]; BELLAICHE, Laurent[2]
1. School of Physical Science and Technology, Soochow University, China
2. Physics Department and Institute for Nanoscience and Engineering, University of Arkansas, USA
3. Institute of Physics and Physics Department of Southern Federal University, Russia
4. Laboratoire Structures, Propriétés et Modélisation des Solides, CentraleSupélec, CNRS UMR 8580, Université Paris-Saclay, France

11:45

(30-A1-S07-23) Investigation of Metals/$SrTiO_3$ Schottky Junctions by Photoemission Spectroscopy

OHSAWA, Takeo[*1]; HOSAKA, Takumi[1,2]; UEDA, Shigenori[3]; ISHIGAKI, Takamasa[2]; OHASHI, Naoki[1]
1. National Institute for Materials Science (NIMS), Japan
2. Graduate School of Science and Engineering, Hosei University, Japan
3. Synchrotron X-ray Station at SPring-8, NIMS, Japan

PZT I Domain and PNR

Session Chairs: TROLIER-MCKINSTRY, Susan, The Pennsylvania State University

13:30

(30-A1-S07-24) Abundant domain defects in single crystal PZT nanodots and a deterministic electrical control

DING, Lili[*1,2]; JI, Ye[1,2]; CHEN, Weijin[1,2,3]; ZHENG, Yue[1,2]
1. State Key Laboratory of Optoelectronic Materials and Technologies, School of Physics, Sun Yat-sen University, China
2. Micro&Nano Physics and Mechanics Research Laboratory, School of Physics, Sun Yat-sen University, China
3. School of Materials, Sun Yat-sen University, China

13:45

(30-A1-S07-25) Complex morphotropic domain structure and ferroelectric properties in high-T_C perovskite single crystals

LUO, Zeng[*1]; ZHANG, Nan[1]; LIU, Zenghui[1]; REN, Wei[1]; YE, Zuo-Guang[2,1]
1. Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research , Faculty of Electronic and Information Engineering , Xi'an Jiaotong University, China
2. Department of Chemistry and 4D LABS, Simon Fraser University, Canada

14:00

(30-A1-S07-26) Effect of elastic field on domain structure of PZT thin films in MPB composition

SHIMIZU, Takumi[*1]; KIGUCHI, Takanori[2]; SHIRAISHI, Takahisa[2]; KONNO, Toyohiko[2]
1. Department of Material Science and Engineering, Tohoku University, Japan
2. Institute for Materials Research, Tohoku University, Japan

Session Chairs: GLAUM, Julia, Norwegian University of Science and Technology

14:15

(30-A1-S07-27) Soft phonon driven local ferroelectric transition in lead-based relaxors

KAMBA, Stanislav[*1]; NUZHNYY, Dmitry[1]; PETZELT, Jan[1]; HLINKA, Jiri[1]
1. Institute of Physics, Czech Academy of Sciences, Czech Republic

14:30

(30-A1-S07-28) Development of pulsed electric fields poling method

KAWAMURA, Yuta[*1]; KAKIMOTO, Kenichi[2]; YOSHIMURA,

Takeshi[3]; NAKAYAMA, Tadachika[1]; SUEMATSU, Hisayuki[1]; SUZUKI, Tsuneo[1]; JIANG, Weihua[1]; NIIHARA, Koichi[1]
1. Extreme Energy-Density Research Institute, Nagaoka University of Technology, Japan
2. Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan
3. Department of Physics and Electronics, Osaka Prefecture University, Japan

PZT II Thin films

Session Chairs: SHIMIZU, Takao, Tokyo Institute of Technology

14:45

(30-A1-S07-29) Giant piezoelectricity and temperature characteristics of free-standing sputter-epitaxial $PbTiO_3$ plates.

MAZDA, Yuka[*1]; YANAGITANI, Takahiko[1,2]
1. Graduate School of Advanced Science and Engineering, Waseda University, Japan
2. JST-PRESTO, Japan

15:00

(30-A1-S07-30) Electromechanical Characteristics of Piezo_MEMS

AKIYAMA, Yoshikazu[*1]
1. Innovation/R&D Division, RICOH COMPANY, LTD., Japan

15:15

(30-A1-S07-31) AC field dependence of electro-optic property in epitaxial $Pb(Zr, Ti)O_3$ thin films

KONDO, Shinya[*1]; YAMADA, Tomoaki[1]; YOSHINO, Masahito[1]; NAGASAKI, Takanori[1]
1. Department of Energy Engineering, Nagoya University, Japan

(15:30) Coffee Break

Lead-Free I Unique structure materials

Session Chairs: WATANABE, Takayuki, Canon Inc.

15:45

(30-A1-S07-32) Artificially Induced Quasi-Relaxor behavior in KNN-LN thick films by Aerosol-Deposition (Invited)

PEDDIGARI, Mahesh[1]; RYU, Jungho[*2]
1. Functional Ceramics Group, Korea Institute of Materials Science (KIMS), Korea
2. School of Materials Science and Engineering, Yeungnam University, Korea

16:15

(30-A1-S07-33) Textured and Epitaxial $BiFeO_3$ Thin Films by Chemical Solution Deposition on Silicon Substrates

LIU, Lisha[*1]; LI, Jing-Feng[1]
1. Tsinghua University, China

16:30

(30-A1-S07-34) Negative Thermal Expansion in BiCoO3-Based Lead-Free Ferroelectrics

PAN, Zhao[*1]; AZUMA, Masaki[1]
1. Tokyo Institute of Technology, Japan

Advanced Characterization Methods

Session Chairs: TANIGUCHI, Hiroki, Nagoya University

16:45

(30-A1-S07-35) Angle-Resolved Polarized Raman Spectroscopy to Study Ferroelectric Phase Transitions of Ba-Ti-O System (Invited)

TSUKADA, Shinya[*1]; FUJII, Yasuhiro[2]; AKISHIGE, Yukikuni[3]
1. Institute of Education, Shimane University, Japan
2. College of Science and Engineering, Ritsumeikan University, Japan
3. Office of the Vice President for Research, Shimane University, Japan

17:15

(30-A1-S07-36) Dynamics of Ferroelectric Nano Ordering in Perovskite-Type Nanocrystals Studied by High Resolution Broadband Light Scattering (Invited)

TAKESADA, Masaki[*1]; SUGAWARA, Yuki[1]; SHIMIZU, Kazuki[1]; SUE, Kiwamu[2]; TAKASHIMA, Hiroshi[2]; SATO, Yukio[3]; ITOH, Mitsuru[4]; HAKUTA, Yukiya[5]
1. Hokkaido University, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan
3. Kyushu University, Japan
4. Tokyo Institute of Technology, Japan
5. Advanced Operando-measurement Technology OIL, AIST, Japan

■October 30 (Wed) (Room B3) ■

09:Science and Applications of Amorphous Materials

Structure I

Session Chairs: MASAI, Hirokazu, AIST

11:00

(30-B3-S09-01) The Alkali Coordination in Silicate Glasses: What can we learn from Crystal Structures? (Keynote)

HANNON, Alex[*1]
1. ISIS Facility, Rutherford Appleton Lab, UK

11:30

(30-B3-S09-02) Structure of amorphous alumina revealed by high-energy X-ray and neutron diffraction

KOHARA, Shinji[*1,2,3]; ONODERA, Yohei[4,1]; TAHARA, Shuta[5,1]; SAKATA, Osami[1]; HASHIMOTO, Hideki[6]; ASOH, Hidetaka[6]
1. National Institute for Materials Science, Japan
2. Japan Synchrotron Radiation Research Institute, Japan
3. JST, PRESTO, Japan
4. Kyoto University, Japan
5. University of the Ryukyus, Japan
6. Kogakuin University, Japan

Session Chairs: HEO, Jong, Pohang University of Science and Technology

11:45

(30-B3-S09-03) Structural evolution of high zirconia aluminosilicate glasses

CORMIER, Laurent[*1]; FICHEUX, Maxime[1,2]; BUROV, Ekaterina[2]
1. IMPMC, Sorbonne Université, CNRS, MNHN, IRD, France
2. SVI, Joint CNTS/Saint Gobain, France

12:00

(30-B3-S09-04) Microscopic ordering in amorphous poly(*n*-alkylsilsesquioxane) liquids and solids synthesized by a cosolvent-free hydrolytic polycondensation via aging

KAJIHARA, Koichi[*1]; SETO, Ryosuke[1]; KANAMURA, Kiyoshi[1]; ONODERA, Yohei[2,3]; KOHARA, Shinji[3,4]
1. Department of Applied Chemistry for Environment, Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University, Japan
2. Institute for Integrated Radiation and Nuclear Science, Kyoto University, Japan
3. Center for Materials research by Information Integration (CMI^2), Research and Services Division of Materials Data and Integrated System (MaDIS), National Institute for Materials Science, Japan
4. Synchrotron X-ray Group, Light/Quantum Beam Field, Research Center for Advanced Measurement and Characterization, National Institute for Materials Science

Laser & Glass

Session Chairs: HONMA, Tsuyoshi, Nagaoka University of Technology

13:30

(30-B3-S09-05) What happened during fs laser irradiation in glass? (Keynote)

QIU, Jianrong[*1]
1. Zhejiang University, China

14:00

(30-B3-S09-06) UV-curable Dual Beam Optical Tweezers System for Assembling Functional

Structure of Glass Microspheres
TANG, Hengjie[*1]; KISHI, Tetsuo[1]; YANO, Tetsuji[1]
1. Tokyo Institute of Technology, Japan

14:15

(30-B3-S09-07) Spatial control of glass-phase in Na_2O-B_2O_3-SiO_2 glass by CW laser scanning for planar chemical reactor
TOMITA, Kana[*1]; KISHI, Tetsuo[1]; YANO, Tetsuji[1]
1. Department of Materials Science & Engineering, Tokyo Institute of Technology, Japan

Session Chairs: QIU, Jianrong, Zhejiang University

14:30

(30-B3-S09-08) High refractive index with low wavelength dispersion of La_2O_3-rich La_2O_3-B_2O_3-Nb_2O_5 glasses prepared by a levitation technique
MASUNO, Atsunobu[*1,2,3]; YANABA, Yutaka[2]; SASAKI, Shunta[1]; INOUE, Hiroyuki[2]
1. Hirosaki University, Japan
2. The University of Tokyo, Japan
3. National Institute of Materials Science, Japan

14:45

(30-B3-S09-09) Mechanical properties of Al_2O_3-Ta_2O_5-M_xO_y (M_xO_y = Nb_2O_5, Ga_2O_3, or Y_2O_3) glasses prepared by a levitation technique
MIKAMI, Yuki[*1]; MASUNO, Atsunobu[1,2,3]; YANABA, Yutaka[2]; INOUE, Hiroyuki[2]
1. Hirosaki University, Japan
2. The University of Tokyo, Japan
3. National Institute for Materials Science, Japan

15:00

(30-B3-S09-10) Thermal Stability, Optical Transmittance, Refractive Index and Vicker mircohardness of CaO-Al_2O_3-Ta_2O_5 Glass
RUAN, Jian[*1,2]; CHEN, Yifan[1]; TIAN, Chen[1]; HAN, Jianjun[1,2]; ZHAO, Xiujian[1,2]
1. State Key Laboratory of Silicate Materials for Architectures (Wuhan University of Technology), PR China
2. Specialty Glass Engineering Technology Research Center of Hubei Province, PR China

(15:15) Coffee Break

Crystallization

Session Chairs: HANNON, Alex, ISIS Facility

15:30

(30-B3-S09-11) Relationship between Composition and Crystallization in Gd_2O_3-MoO_3-B_2O_3 Glasses
KOMATSU, Takayuki[*1]; HONMA, Tsuyoshi[1]
1. Nagaoka University of Technology, Japan

15:45

(30-B3-S09-12) Improvement of Pockels coefficients by crystallization-process control in perfectly surface crystallized glass-ceramics
OTSUKI, Tomoki[*1]; TERAKADO, Nobuaki[1]; TAKAHASHI, Yoshihiro[1]; FUJIWARA, Takumi[1]
1. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan

16:00

(30-B3-S09-13) Structural Analysis on Crystallization Process of $Li_2B_4O_7$ Melt by Polarized Raman Spectroscopy and Molecular Dynamics Simulation
UCHIDA, Hikaru[*1]; YANO, Tetsuji[1]; KISHI, Testuo[1]; NORITAKE, Fumiya[2]
1. Tokyo Institute of Technology, Japan
2. University of Yamanashi, Japan

Session Chairs: KOMATSU, Takayuki, Nagaoka University of Technology

16:15

(30-B3-S09-14) Direct Evidence of Compositional Distribution of $CdSe/Cd_{1-x}Zn_xSe$ Graded Shell QDs in Silicate Glasses Fabricated Using Continuous Wave Laser
HEO, Jong[*1]; LEE, Hojeong[1]; PARK, Won Ji[1]
1. Pohang University of Science and Technology, Korea

16:30

(30-B3-S09-15) The Formation Mechanism of Cd-S-Se Quantum Dots within the Silicate Glasses
HAN, Karam[*1]; HEO, Jong[2]; CHUNG, Woon Jin[1]
1. Institute for Rare Metals and Div. of Advanced Materials Eng., Kongju National Univ., Republic of Korea
2. Dept. of Materials Sci. and Eng., Pohang Univ. of Sci. and Tech., Republic of Korea

Session Chairs: MASUNO, Atsunobu, Hirosaki University

17:00

(30-B3-S09-17) Glass-Ceramics with Eu^{2+}/Eu^{3+} Selective Distribution in Oxide/Fluoride Crystalline Phases for UV-Pumped Warm White Light-Emitting Diodes
GAO, Yuan[*1]; MURAI, Shunsuke[1]; SHINOZAKI, Kenji[2]; TANAKA, Katsuhisa[1]
1. Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

17:15

(30-B3-S09-18) 3D structural characterization of CaO-Al_2O_3-SiO_2 crystalized glass by using FIB-SEM
IWASAKI, Kenichiro[*1]; INAGE, Keisuke[1]; NAKANISHI, Takayuki[1]; YASUMORI, Atsuo[1]; MAEDA, Kei[2]
1. Tokyo University of Science, Japan
2. AGC Inc., Japan

17:30

(30-B3-S09-19) The Structural Origin of High Density of Gd2O3-MoO3-B2O3 Glass and Low Density of b'-Gd2(MoO4)3 Crystal Investigated by High-Energy X-ray Diffraction at High Temperature
SHINOZAKI, Kenji[*1]; TSUCHIYA, Hiroki[2]; HONMA, Tsuyoshi[2]; OHARA, Koji[3]; MASAI, Hirokazu[2]; INA, Toshiaki[3]; KOMATSU, Takayuki[2]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Nagaoka University of Technology, Japan
3. Japan Synchrotron Radiation Research Institute (JASRI), Japan

17:45

(30-B3-S09-20) Crystallization behavior of Na_2MSiO_4(M=Mn, Fe) glass
HONMA, Tsuyoshi[*1]; TERASAWA, Miyuri[1]; FURUKAWA, Tatsuto[1]; KOMATSU, Takayuki[1]
1. Nagaoka University of Technology, Japan

■October 30 (Wed) (Room T1) ■

10:Bioceramics and Bioinspired Materials

Apatite formation

Session Chairs: NARAYAN, Roger, North Carolina State University

(8:30) Coffee Break

10:15

(30-T1-S10-01) Bioinspired Processing of Hydroxyapatite Coating Using Acellular Solutions Mimicking Human Blood Plasma
OHTSUKI, Chikara[*1]; NAKAMURA, Jin[1]; SUGAWARA-NARUTAKI, Ayae[1]
1. Graduate School of Engineering, Nagoya University, Japan

10:30

(30-T1-S10-02) Bioinspired bone nanostructure

composite simulation

HUANG, Ying[*1]; ZOU, Zhaoyong[1]; XIE, Hao[2]; FU, Zhengyi[1]
1. State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, China
2. School of Chemistry, Chemical Engineering and Life Science, Wuhan University of Technology, China

10:45

(30-T1-S10-03) Development of Novel Artificial Bone Material by Imparting Bioactivity to Carbon Nanotube-PEEK Composite

ISHIZAKI, Chihiro[*1]; YABUTSUKA, Takeshi[1]; TAKAI, Sigeomi[1]
1. Graduate School of Energy Science, Kyoto University, Japan

Session Chairs: NONOYAMA, Takayuki, Hokkaido University

11:00

(30-T1-S10-04) Assessment of kinetic performance for early stage of immersion in SB fluid for silicon nitride based ceramic

GALUSKOVA, Dagmar[*1]; KANKOVA, Hana[1]; HNATKO, Miroslav[2]; GALUSEK, Dusan[1]; SAJGALIK, Pavol[2]
1. Centre for Functional and Surface Functionalized Glass, TnU AD, Slovakia
2. Institute of Inorganic Chemistry, Slovak Academy of Science, Slovakia

Session Chairs: NAKAMURA, Jin, Nagoya University

11:15

(30-T1-S10-05) Additive Patterning of Fibronectin-Immobilized Apatite Micro-Chips by Laser-Induced Forward Transfer

NARAZAKI, Aiko[*1]; OYANE, Ayako[2]; KUROSAKI, Ryozo[1]; KAMEYAMA, Tomoko[1]; SAKAMAKI, Ikuko[2]; ARAKI, Hiroko[2]; MIYAJI, Hirofumi[3]
1. Electronics and Photonics Research Institute, National Institute of Advanced Industrial Science and Technology, Japan
2. Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology, Japan
3. Faculty of Dental Medicine, Hokkaido University, Japan

Session Chairs: OHTSUKI, Chikara, Nagoya University

11:30

(30-T1-S10-06) New Insight into the Role of Bioactivity in Osteoinduction (Keynote)

DOEBELIN, Nicola[*1]; MAAZOUZ, Yassine[1]; BOHNER, Marc[1]
1. RMS Foundation, Bischmattstrasse 12, 2544 Bettlach, Switzerland

Session Chairs: HASHIMOTO, Masami, Japan Fine Ceramics Center

13:30

(30-T1-S10-07) Apatite-Forming Ability of Doped-Ceria Coatings for Orthopedic Implants

KHOSRAVANIHAGHIGHI, Ayda[*1]; KOSHY, Pramod[1]; WALSH, Bill[2]; LOVRIC, Vedran[2]; SORRELL, Charles Christopher[1]
1. University of New South Wales, Australia
2. Prince of Wales Hospital, Australia

13:45

(30-T1-S10-08) Enhanced apatite formation of grit-blasted/acid-etched dental Ti implant by heat treatment

OGURA, Ayano[*1,3]; YAMAGUCHI, Seiji[2]; IMAGAWA, Naoko[1]; MATSUMOTO, Keisuke[1]; OCHI, Ayako[1]; INOUE, Kazuya[1]; NAKAJIMA, Yoichirou[1]; NAKANO, Hiroyuki[1]; UENO, Takaaki[1]; MORI, Yoshihide[3]
1. Department of Dentistry and Oral Surgery, Osaka Medical College, Japan
2. Department of Biomedical Sciences, Chubu University, Japan
3. Department of Oral and Maxillofacial Surgery, Kyushu University, Japan

14:00

(30-T1-S10-09) Comparison of the Apatite Deposition on Titania Powder with Different Structure

IMANAKA, Satoshi[*1]; MIYAZAKI, Toshiki[1]
1. Kyushu Institute of Technology, Japan

Antibacterial property

Session Chairs: NAKAMURA, Maki, AIST

14:15

(30-T1-S10-10) Apatite formation and antibacterial activity of Ti and Ti-6Al-4V alloy incorporated with Ca, Sr and Ag ions

IWATSUKI, Rina[*1]; YAMAGUCHI, Seiji[1]; SHINTANI, Seine, A.[1]; TAKADAMA, Hiroaki[1]
1. Department of Biomedical Sciences, Chubu University, Japan

14:30

(30-T1-S10-11) Preparation of antibacterial drug-loaded organic-inorganic composite thin films

KUMAMOTO, Kazutaka[*1]; MAEDA, Toshinari[1]; MUSTAPHA, Nurul Asyifah Binti[1]; HAYAKAWA, Satoshi[2]; SHIROSAKI, Yuki[1]
1. Kyushu Institute of Technology, Japan
2. Okayama University, Japan

14:45

(30-T1-S10-12) Anti-microbial cotton-like bone-filling materials using silver-containing calcium compounds: preparation, anti-bacterial ability and cytotoxicity

UEDA, Mayu[*1]; YOKOTA, Tomohiro[2]; HONDA, Michiyo[1]; OSAKA, Naoya[3]; MAKITA, Masashi[3]; NISHIKAWA, Yasushi[3]; KASUGA, Toshihiro[4]; AIZAWA, Mamoru[1]
1. Department of Applied Chemistry, School of Science and Technology, Meiji University, Japan
2. Organization for the Strategic Coordination of Research and Intellectual Property, Meiji University, Japan
3. ORTHOREBIRTH Co. Ltd., Japan
4. Division of Advanced Ceramics, Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan

15:00

(30-T1-S10-13) Controlled Release of Antibiotics from Zirconium Phosphate Modified with Phenyl Group

ITO, Ryoya[*1]; NAKAMURA, Jin[1]; NARUTAKI, Ayae Sugawara[1]; OHTSUKI, Chikara[1]
1. Graduate School of Engineering, Nagoya University, Japan

(15:15) Coffee Break

Session Chairs: KIKUCHI, Masanori, NIMS

15:30

(30-T1-S10-14) Current international standardization movement for bioceramics in ISO/TC150 (Invited)

TSUTSUMI, Sadami[*1]
1. Kyoto University, Japan
2. Kanazawa Institute of Technology, Japan

Cell response

Session Chairs: IKOMA, Toshiyuki, Tokyo Institute of Technology

16:00

(30-T1-S10-15) The nerve cell responses to Si(IV) units structure released from chitosan-siloxane hybrids

SHIROSAKI, Yuki[*1]; FREGNAN, Federica[2]; MURATORI, Luisa[2]; RAIMONDO, Stefania[2]; GEUNA, Stefano[2]
1. Kyushu Institute of Technology, Japan
2. University of Torino, Italy

16:15

(30-T1-S10-16) Combinatorial Effects of Inorganic Ions on Adhesion and Proliferation of Osteoblast-like Cells

OBATA, Akiko[*1]; OGASAWARA, Toru[1]; KASUGA, Toshihiro[1]
1. Division of Advanced Ceramics, Nagoya Institute of Technology, Japan

16:30

(30-T1-S10-17) Biological Adhesion of Different Biomaterials Designed by Periodontal Ligament Cells

OKUBO, Naoto[1]; YOKOZEKI, Kenji[2]; AKAZAWA, Toshiyuki[*3];

MURATA, Masaru[2]; MINAMIDA, Yasuhito[2]; KABIR, Arafat[2]; ITO, Manabu[4]; NAKAJIMA, Takehiko[5]
1. Faculty of Pharmaceutical Sciences, Hokkaido University, Japan
2. Health Sciences University of Hokkaido, Japan
3. Industrial Research Institute, Hokkaido Research Organization, Japan
4. National Hospital Organization Hokkaido Medical Center, Japan
5. HOYA Technosurgical Corporation, Japan

Composite

Session Chairs: YOKOI, Taishi, Japan Fine Ceramics Center

16:45

(30-T1-S10-18) Effect of octacalcium phosphate chemical nature in bone formation from ovariectomized rat long bone defect

SUZUKI, Osamu[*1]; BABA, Kazuyoshi[1,2]; SHIWAKU, Yukari[1,3]; HAMAI, Ryo[1]; ANADA, Takahisa[1,4]; MORI, Yu[2]; TSUCHIYA, Kaori[1]; ITOI, Eiji[2]
1. Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Japan
2. Department of Orthopedic Surgery, Tohoku University Graduate School of Medicine, Japan
3. Liaison Center for Innovative Dentistry, Tohoku University Graduate School of Dentistry, Japan
4. Soft Materials Chemistry, Institute for Materials, Kyushu University, Japan

17:00

(30-T1-S10-19) Reinforcement of Polypeptide Hydrogel with Hydroxyapatite Nanoparticles

UCHIDA, Kanki[*1]; SUGAWARA-NARUTAKI, Ayae[1]; NAKAMURA, Jin[1]; OHTSUKI, Chikara[1]; MIYAJIMA, Tatsuya[2]; NAGATA, Fukue[2]
1. Nagoya University, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

17:15

(30-T1-S10-20) Mineralization of Anisotropic Hydroxyapatite on Stretched High-Toughness Hydrogel

FUKAO, Kazuki[*1]; NONOYAMA, Takayuki[2,3]; KIYAMA, Ryuji[1]; FURUSAWA, Kazuya[2,3]; KAWAI, Takahiko[5]; KUROKAWA, Takayuki[2,3]; NAKAJIMA, Tasuku[2,3,4]; GONG, Jian Ping[2,3,4]
1. Graduate School of Life Science, Hokkaido University, Japan
2. Faculty of Advanced Life Science, Hokkaido University, Japan
3. Global Station for Soft Matter, Global Institution for Collaborative Research and Education (GI-CoRE), Hokkaido University, Japan
4. Institute for Chemical Reaction Design and Discovery (WPI-ICReDD), Hokkaido University, Japan
5. Graduate School of Engineering, Gunma University, Japan

Session Chairs: OBATA, Akiko, Nagoya Institute of Technology

17:30

(30-T1-S10-21) In situ fabrication of amorphous calcium phosphate nanoparticles within 3D collagen sponges for bone tissue engineering

SANTHAKUMAR, Syama[*1]; OYANE, Ayako[1]; NAKAMURA, Maki[1]; KOGA, Kenji[1]; MIYATA, Saori[2]; MURATSUBAKI, Ko[2]; MIYAJI, Hirofumi[2]
1. Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Faculty of Dental Medicine, Hokkaido University, Japan

17:45

(30-T1-S10-22) Intrafibrillar Mineralization of Inorganic Materials with Organized Structure via Periodic Growth

FANG, Weijian[*1]; PING, Hang[1]; FU, Zhengyi[1]
1. Wuhan University of Technology, China

12:Novel Nanocrystal Technologies for Advanced Ceramic Materials & Devices

Crystal growth

Session Chairs: UENO, S., University of Yamanashi

8:45

(30-T1-S12-30) Synthesis of A-site substituted $BaTiO_3$ single-crystalline nanocubes

MIMURA, Ken-ichi[*1]; ITASAKA, Hiroki[1]; LIU, Zheng[1]; KATO, Kazumi[2]
1. Inorganic Functional Materials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Application of nanocrystals

Session Chairs: UENO, S., University of Yamanashi

9:00

(30-T1-S12-31) Enhancement of thermoelectric performance of polycrystalline SnSe2 by synergistic modulation of carrier concentration and suppression of lattice thermal conductivity (Invited)

MIAO, Lei[*1]; WU, Shaohai[1]; LIU, Chengyan[1]; GAO, Jie[1]; WU, Junliang[1]
1. Guilin University of Electronic Technology, China

Session Chairs: MIMURA, K., AIST

9:30

(30-T1-S12-32) Advanced Porous Materials for Uranium Extraction from Seawater (Invited)

WANG, Ning[*1]; YUAN, Yihui[1]; MA, Chunxin[1]; WANG, Dong[1]; SHI, Se[1]
1. State Key Laboratory of Marine Resource Utilization in South China Sea, Hainan University, China

■October 30 (Wed) (Room B1C)

■

13:Engineering Ceramics: Processing and Characterization

Microstructure control

Session Chairs: TATAMI, Junichi, Yokohama National University

8:30

(30-B1C-S13-01) Structural and Functional Properties of Silicon Oxycarbide-Based (Invited)

RIEDEL, Ralf[*1]
1. TU Darmstadt, Germany

9:00

(30-B1C-S13-02) Factors Affecting Electrical Conductivity of Liquid-Phase Sintered Silicon Carbide Ceramics (Invited)

KIM, Young-Wook[*1]
1. Department of Materials Science and Engineering, University of Seoul, Seoul 02504, Republic of Korea

9:30

(30-B1C-S13-03) Growth of tantalum oxynitride nanowires under high pressure and temperature

GAIDA, Nico Alexander[*1,2]; SASAKI, Takuya[1]; LIU, Zheng[3]; NIWA, Ken[1]; HIROZAWA, Masaki[1]; OHSUNA, Tetsu[1]; HASEGAWA, Masashi[1]
1. Department of Materials Physics, Nagoya University, Japan
2. Venture Business Laboratory, Nagoya University, Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:45

(30-B1C-S13-04) Preparation and properties of negative thermal expansion of partially substituted $Zr_2SP_2O_{12}$

UEHARA, Ryosuke[*1]; MATSUSHITA, Sachiko[1]; NAKAJIMA, Akira[1]; ISOBE, Toshihiro[1]
1. Tokyo Institute of Technology, Japan

(10:00) Coffee Break

Session Chairs: KIM, Young Wook, University of Seoul

10:15

(30-B1C-S13-05) Development of New Ceramic Materials for Cutting Tools (Invited)

KATSU, Yusuke[*1]
1. NGK SPARK PLUG CO., LTD., Japan

10:45

(30-B1C-S13-06) Development of Si_3N_4 Ceramic Tool for Friction Stir Welding (Invited)

FUNAKI, Kai[*1,2]; KATO, Masahiro[1]; FUKASAWA, Takayuki[1]; ABE, Yutaka[1]; FUJII, Hidetoshi[2]; MORISADA, Yoshiaki[2]
1. Toshiba Material Co., Ltd., Japan
2. Joining and Welding Research Institute, Osaka University, Japan

11:15

(30-B1C-S13-07) Non-destructive 3D visualization of voids, cracks and fibers in materials (Invited)

SUZUKI, Kazuhiro[*1]; TSUTSUMI, Masayoshi[1]; NISHIKAWA, Norio[1]; NAGATSUKA, Takehiro[1]; TERUI, Yuji[2]
1. Semiconductor Evaluation Laboratory, Toshiba Nanoanalysis Corp, Japan
2. Engineering and Operation Division, Toshiba Nanoanalysis Corp, Japan

11:45

(30-B1C-S13-08) Processing-induced defects formed during sintering of alumina observed by multiscale 3D X-ray tomography

OKUMA, Gaku[*1]; WATANABE, Shuhei[1]; SHINOBE, Kan[1]; NISHIYAMA, Norimasa[1]; WAKAI, Fumihiro[1]; TAKEUCHI, Akihisa[2]; UESUGI, Kentaro[2]; TANAKA, Satoshi[3]
1. Institute of Innovative Research, Tokyo Institute of Technology, JAPAN
2. Japan Synchrotron Radiation Research Institute, JASRI/SPring-8, JAPAN
3. Department of Materials Science and Technology, Nagaoka University of Technology, JAPAN

Session Chairs: KLEMM, Haigen, Fraunhofer IKTS

13:30

(30-B1C-S13-09) Engineering Processing and Microstructure Design of Silicon Nitride Bearing Balls (Invited)

LIN, Hua-Tay[*1]; WU, Jun-Jie[1]; GUO, Wei-Ming[1]
1. School of Electromechanical Engineering, Guangdong University of Technology, China

14:00

(30-B1C-S13-10) Effect of Carbon on Microstructure and Properties of Silicon Nitride (Invited)

KIM, Hai-Doo[*1]
1. KICET Icheon Branch, Korea

Session Chairs: LIN, Hua Tay, Guangdong University of Technology

14:30

(30-B1C-S13-11) Influence of sintering additives on matrix properties of non-oxide ceramic matrix composites (Invited)

KLEMM, Hagen[*1]; SCHOENFELD, Katrin[1]; STEINBORN, Clemens[1]
1. Fraunhofer IKTS Dresden, Germany

15:00

(30-B1C-S13-12) The potential of wet nonwovens for the manufacturing of ceramic matrix composites (CMC)

KESSEL, Fiona[*1]; KLOPSCH, Linda[1]; JEHLE, Volker[2]
1. German Aerospace Center, Germany
2. Reutlingen University, Germany

15:15

(30-B1C-S13-13) Processing and Properties of Textured Boron Carbide Ceramic with Alumina Additive Fabricated Under Rotating High Magnetic Field

FAJAR, Muhammad[*1]; GUBAREVICH, Anna[1]; SUZUKI, Tohru S.[2]; YANO, Toyohiko[1]; YOSHIDA, Katsumi[1]
1. Tokyo Institute of Technology, Japan
2. National Institute for Materials Science, Japan

(15:30) Coffee Break

Sintering

Session Chairs: SUZUKI, Tohru, NIMS

15:45

(30-B1C-S13-14) Effect of Mechanical Activation on the Densification Behavior of $MgAl_2O_4$ Spinel

OBRADOVIC, Nina[1]; FAHRENHOLTZ, William[*2]; FILIPOVIC, Suzana[1]; DORDEVIC, Pavle[1]; ROGAN, Jelena[3]; PAVLOVIC, Vladimir[1]
1. Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Serbia
2. Materials Science and Engineering, Missouri University of Science and Technology, United States
3. Department of General and Inorganic Chemistry, Faculty of Technology and Metallurgy, University of Belgrade, Serbia

16:00

(30-B1C-S13-15) Sintering mechanisms and dielectric properties of cold sintered (1-x) SiO2 - x PTFE composites

NDAYISHIMIYE, Arnaud[*1,2]; TSUJI, Kosuke[1,2]; WANG, Ke[1]; BANG, Sun-Hwi[1,2]; RANDALL, Clive A.[1,2]
1. Materials Research Institute,The Pennsylvania State University, University Park, PA, United States
2. Department of Materials Science and Engineering ,The Pennsylvania State University, University Park, PA, United States

16:15

(30-B1C-S13-16) Mechanics of Sintering in Formation and Disappearance of a Closed Pore

WAKAI, Fumihiro[*1]; OKUMA, Gaku[1]; NISHIYAMA, Norimasa[1]; GUILLON, Olivier[2]
1. Tokyo Institute of Technology, Japan
2. Forschungzentrum Julich, Germany

16:30

(30-B1C-S13-17) Sintering of Silicon Carbide Ceramics with Al_2O_3-TiO_2 Additives by Hot-Pressing and Its Properties

YOSHIDA, Katsumi[*1]; NAKANE, Tatsuya[2]; GUBAREVICH, Anna[1]; SHINODA, Yutaka[3]; SUZUKI, Yoshikazu[4]
1. Laboratory for Advanced Nuclear Energy, Institute of Innovative Research, Tokyo Institute of Technology, Japan
2. Department of Materials Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan
3. Department of Mechanical Engineering, National Institute of Technology, Ube College, Japan
4. Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

Session Chairs: OKUMA, Gaku, Tokyo Instititute of Technology

16:45

(30-B1C-S13-18) Sintering behavior of polycrystalline Al_2O_3 with Ti and Y dopants

NGUYEN, Huu Hien[*1]; SHIRAI, Takashi[1]; XIN, Yunzi[1]; NANKO, Makoto[2]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Department of Mechanical Engineering, Nagaoka University of Technology, Japan

17:00

(30-B1C-S13-19) Non-Uniform Densification and Grain Growth during Spark Plasma Sintering of Y_2O_3

KIM, Byung-Nam[*1]; LEE, Jihwoan[2]; MORITA, Koji[1]; SUZUKI, Tohru S.[1]; JANG, Byung-Koog[2]
1. National Institute for Materials Science, Japan
2. Kyushu University, Japan

17:15

(30-B1C-S13-20) Is sintering technology suitable for the densification of ultra-high temperature

ceramic matrix composites?
ZOLI, Luca[*1]; VINCI, Antonio[1]; GALIZIA, Pietro[1]; GUITERREZ-GONZALEZ, Carlos F.[2]; RIVERA, Sergio[2]; SCITI, Diletta[1]
1. CNR-ISTEC, Institute of Science and Technology for Ceramics, Italy
2. Nanoker Research S.L., Spain

17:30

(30-B1C-S13-21) Multifunctional nanocomposites ceramics with tunable electrical and thermal conductivity obtained in one step sintering
KENFAUI, Driss[2]; GUILLEMET-FRITSCH, Sophie[*1]; DUFOUR, Pascal[1]; TENAILLEAU, Christophe[1]; LOCATELLI, Marie Laure[2]; BLEY, Vincent[2]; LAUDEBAT, Lionel[2]; VALDEZ-NAVA, Zarel[2]
1. CIRIMAT Université de Toulouse CNRS INP UPS, France
2. LAPLACE Université de Toulouse CNRS INP UPS, France

■October 30 (Wed) (Room B4) ■

14:Advanced Structure Analysis and Characterization of Ceramic Materials

X-ray diffractometry

Session Chairs: MISTRE, Scott, Alfred University

8:30

(30-B4-S14-06) Powder Diffraction Method with Laboratory & Synchrotron Sources of X-ray (Invited)
IDA, Takashi[*1,2]
1. Nagoya Institute of Technology, Japan
2. Aichi Synchrotron Radiation Center, Japan

Dielectrics

Session Chairs: MISTRE, Scott, Alfred University

9:00

(30-B4-S14-07) Characterization of atomic structure in Pb-free relaxor ferroelectrics using quantum beams (Invited)
PRAMANICK, Abhijit[*1]; NAYAK, Sanjib[1]; VENKATESHWARLU, Sarangi[1]; BUDISUHARTO, Anthony B.[1]; DMOWSKI, Wojciech[2,3]; EGAMI, Takeshi[2,3]; MARLTON, Frederick P.[4]; JORGENSEN, Mads RV[4,5]; CHRISTIANSON, Andrew D[6]; ABERNATHY, Douglas L[7]; BORKIEWICZ, Olaf[8]; BEYER, Kevin A[8]
1. Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong SAR
2. Shull Wollan Center, Oak Ridge National Laboratory, USA
3. Department of Materials Science and Engineering, University of Tennessee, USA
4. Department of Chemistry and iNANO, Aarhus University, Denmark
5. Max IV Laboratory, Lund University, Sweden
6. Neutron Scattering Division, Oak Ridge National Laboratory, USA
7. Materials Science and Technology Division, Oak Ridge National Laboratory, USA
8. Advanced Photon Source, Argonne National Laboratory, USA

Session Chairs: PRAMANICK, Abhijit, City University of Hong Kong

9:30

(30-B4-S14-08) Study on local conductive path growth in degraded multi-layered ceramic capacitor
IZAWA, Kazuyoshi[*1]; KAWAGUCHI, Masaya[1]; SADA, Takao[1]; UTSUNOMIYA, Masashi[1]; NISHIMURA, Michiaki[1]; MATSUBARA, Kiyoshi[1]; YASUKAWA, Katsumasa[1]
1. KYOCERA Corporation, Japan

9:45

(30-B4-S14-09) Study of local structure for PMN-28PT at low temperature
WANG, Zhen[*1]; ZHANG, Nan[1]
1. Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, China

10:00

(30-B4-S14-10) Negative thermal expansion in ferroelectric-palaelectric transition driven by intermetallic charge transfer in $BiNi_{1-x}Fe_xO_3$
NISHIKUBO, Takumi[*1]; SAKAI, Yuki[1,2]; OKA, Kengo[3]; MACHIDA, Akihiko[4]; WATANUKI, Tetsu[4]; MIZUMAKI, Masaichiro[5]; HOJO, Hajime[6]; MIZOKAWA, Takashi[7]; AZUMA, Masaki[1,2]
1. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan
3. Department of Applied Chemistry, Chuo University, Japan
4. Synchrotron Radiation Research Center, National Institutes for Quantum and Radiological Science and Technology, Japan
5. Japan Synchrotron Radiation Research Institute, SPring-8, Japan
6. Department of Energy and Material Science, Kyushu University, Japan
7. Department of Applied Physics, Waseda University, Japan

Glass

Session Chairs: IDA, Takashi, Nagoya Institute of Technology

10:15

(30-B4-S14-11) Glass network variations probed by IR and Raman spectroscopy (Invited)
MONCKE, Doris[*1]
1. Alfred University, Inamori School of Engineering, NYSC of Ceramics, United States

10:45

(30-B4-S14-12) Nanoscale Investigation on Crack-resistant Aluminosilicate Glasses with STEM EELS
LIAO, Kun-Yen[*1]; MASUNO, Atsunobu[2]; INOUE, Hiroyuki[1]; MIZOGUCHI, Teruyasu[1]
1. Institute of Industrial Science, The University of Tokyo, Japan
2. Graduate School of Science and Technology, Hirosaki University, Japan

Optical method

Session Chairs: MONCKE, Doris, Alfred University

11:00

(30-B4-S14-13) Optical detection and structural analysis of creep behavior during sintering of ceramic parts using the versatile Thermo-Optical-Measurement technique TOM
DIEGELER, Andreas[*1]; STAAB, T.E.M[2]
1. Fraunhofer Institute for Silicate Research, Germany
2. University Würzburg, Dep. of Chemistry - LCTM, Germany

Optical material

Session Chairs: MONCKE, Doris, Alfred University

11:15

(30-B4-S14-14) The mechanism of solid-state single crystal growth method for planar waveguide laser materials
ZHANG, Ge[*1,2]; JIANG, Benxue[1]; ZHANG, Long[1,2,3]
1. Key Laboratory of Materials for High-Power Laser, Shanghai Institute of Optics and Fine Mechanics, China
2. University of Chinese Academy of Sciences, China
3. Collaborative Innovation Center of IFSA (CICIFSA), China

11:30

(30-B4-S14-15) Structure Polarity and Luminescence Properties Evolution on the $Na_{2-2x}Mg_{1-x}Si_{1+x}O_4$ ($0 \leq x \leq 1/3$) System
FERNANDEZ CARRION, Alberto Jose[*1]; YANG, Xiaoyan[1]; BECERRO, Ana Isabel[2]; AYDAR, Rakhmatullin[3], OCANA, Manuel[2]; ALLIX, Mathieu[3]; KUANG, Xiaojun[1]
1. MOE Key Laboratory of New Processing Technology for Nonferrous Metals and Materials, Guangxi Universities Key Laboratory of Non-ferrous Metal Oxide Electronic Functional Materials and Devices, College of Materials Science and Engineering, Guilin University of Technology, China
2. Instituto de Ciencia de Materiales de Sevilla (CSIC-Universidad de Sevilla), Spain
3. CNRS, UPR3079 CEMHTI, 1D avenue de la Recherche Scientifique, 45071 Orléans cedex2, France.

Oxide-ion conductors

Session Chairs: CHEN, Xiaolong, Institute of Physics, Chinese Academy of Sciences

13:30

(30-B4-S14-16) Defect structures in oxide ion conductors containing the tetrahedral moieties (Invited)

KUANG, Xiaojun[*1]

1. Guilin University of Technology, China

14:00

(30-B4-S14-17) Structure science of oxide-ion conductors - exploration of new oxide-ion conductors and investigation of oxide-ion conduction mechanisms - (Invited)

FUJII, Kotaro[*1]; YASHIMA, Masatomo[1]

1. Tokyo Institute of Technology, Japan

(14:30) Coffee Break

Superconductors and new materials

Session Chairs: KUANG, Xiaojun, Guilin University of Technology

14:45

(30-B4-S14-18) Discovery of novel CuAs-based superconductors (Invited)

CHEN, Xiaolong[*1,2,3]; GUO, Jian-gang[1,2,3]

1. Institute of Physics, Chinese Academy of Sciences, China
2. School of Physical Sciences, University of Chinese Academy of Sciences, China
3. Songshan Lake Materials Laboratory, China

15:15

(30-B4-S14-19) High Pressure Synthesis of a Novel Titanium Hydride: $BaCa_2Ti_2H_{14}$

YAJIMA, Takeshi[*1]; NAKAJIMA, Hotaka[1]; HONDA, Takashi[2]; HIROI, Zenji[1]

1. Univ. of Tokyo, Japan
2. KEK, Japan

15:30

(30-B4-S14-20) Superconductivity in Li-intercalated 1T-SnSe2 driven by electric field gating

GUO, Jian-gang[*1,3]; CHEN, Xiaolong[1,2,3]

1. Institute of Physics, Chinese Academy of Sciences, China
2. School of Physical Sciences, University of Chinese Academy of Sciences, China
3. Songshan Lake Materials Laboratory, China

■October 30 (Wed) (Room A2) ■

17:Green Processing and Green Energy Materials for Sustainable Society

Session Chairs: OHNO, Tomoya, Kitami Institute of Technology

8:45

(30-A2-S17-34) Why Soft (Green) Processing (= Low-Energy Production) of Advanced Materials is Difficult but Necessary for Sustainable Society?

YOSHIMURA, Masahiro[*1,2]

1. Department of Material Science and Engineering, National Cheng Kung University, Taiwan
2. Tokyo Institute of Technology, Japan

9:00

(30-A2-S17-35) Effect of Orientation of Substrate on Spontaneous Superlattice Formation and Electrical Properties of Sr-Ti-O Thin Film deposited by Dynamic Aurora PLD

WAKIYA, Naoki[*1]; HIRAIWA, Takuma[1]; KAWAGUCHI, Takahiko[1]; SAKAMOTO, Naonori[1]; SHINOZAKI, Kazuo[2]; SUZUKI, Hisao[1]

1. Shizuoka U., Japan
2. Tokyo Tech., Japan

9:15

(30-A2-S17-36) Fabrication of multi layered photocathodes by roll press method

ITO, Mizuki[*1]; WATANABE, Tomoaki[1]

1. Department of Applied Chemistry, Meiji University, Japan

Session Chairs: MATSUSHITA, Nobuhiro, Tokyo Institute of Technology

9:30

(30-A2-S17-37) Effect of UV and VIS light irradiation on CeO_2 nanoparticles prepared by low temperature solution process

UEKAWA, Naofumi[*1]; KOBAYASHI, Minoru[1]; INAGAKI, Yugo[1]; KOJIMA, Takashi[1]

1. Chiba University, Japan

9:45

(30-A2-S17-38) Mixed-Anion Photocatalysts for Energy Conversion and Environmental Remediation (Invited)

HOJAMBERDIEV, Mirabbos[*1]

1. Nagoya University, Japan

(10:15) Coffee Break

Session Chairs: SEKINO, Tohru, Osaka Univ.

10:30

(30-A2-S17-39) Design of metal halide perovskite film using time-resolved laser spectroscopy for solar cell application (Invited)

TACHIBANA, Yasuhiro[*1,2]

1. School of Engineering, RMIT University, Australia
2. Project Research Center for Fundamental Sciences, Faculty of Science, Osaka University, Japan

11:00

(30-A2-S17-40) Stress Induced High-Piezoelectricity of Lead-Free Bariumu Zirconate Titanate Thin Films on SUS substrate

SUZUKI, Hisao[*1]; KATAYAMA, Takaaki[2]; OHNO, Tomoya[3]; KAWAGUCHI, Takahiko[2]; SAKAMOTO, Naonori[1]; WAKIYA, Naoki[1]

1. Research Institute of Electronics, Shizuoka University, Japan
2. Graduate School of Integrated Science and Technology, Shizuoka University, Japan
3. Department of Materials Science, Kitami Institute of Technology, Japan

11:15

(30-A2-S17-41) Precursor-Structure of Low-Temperature Crystallized Cubic $Li_7La_2Zr_{1.75}Ta_{0.25}O_{12}$ for All Ceramic Li-ion Battery

SUZUKI, Hisao[*1]; YAMAZAKI, Tatsuya[2]; OHNO, Tomoya[3]; HIRAI, Shigeto[3]; KAWAGUCHI, Takahiko[2]; SAKAMOTO, Naonori[1]; WAKIYA, Naoki[1]

1. Research Institute of Electronics, Shizuoka University, Japan
2. Graduate School of Integrated Science and Technology, Shizuoka University, Japan
3. Department of Materials Science, Kitami Institute of Technology, Japan

Session Chairs: SUZUKI, Hisao, Shizuoka Univ.

11:30

(30-A2-S17-42) Preparation of $CuCrO_2$ hollow nanofibers from an electrospun Al_2O_3 template (Keynote)

WU, Shin-Rong[1]; WANG, Sheng-Siang[1]; SAKTHINATHAN, Subramanian[1]; CHIU, Te-Wei[*1]; LI, Shao-Sian[1,2]

1. Department of Materials and Mineral Resources Engineering, National Taipei University of Technology, Taiwan
2. Graduate Institute of Biomedical Optomechatronics, College of Biomedical Engineering, Taipei Medical University, Taiwan

■October 30 (Wed) (Room B3) ■

18:Additive Manufacturing and 3d Printing Techonologies

Emerging Technologies

Session Chairs: CHEN, Zhangwei, Shenzhen University

8:30

(30-B3-S18-07) Selective Laser Sintering of Advanced Ceramics, Challenges and Issues (Invited)

KONDO, Naoki[*1]; OHJI, Tatsuki[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:00

(30-B3-S18-08) Boron Nitride/Silicon Nitride Aqueous Suspensions Rheological Characteristics of Direct Ink Writing

YANG, Yitian[*1]; YANG, Zhihua[1]; JIA, Dechang[1]; ZHOU, Yu[1]

1. Institute for Advanced Ceramics, Harbin Institute of Technology, China

Session Chairs: KONDO, Naoki, AIST

9:15

(30-B3-S18-09) 3D Printing of Porous Ceramics for Advanced Applications (Invited)

CHEN, Zhangwei[*1]; LIU, Changyong[1]; FU, Yuelong[1]; LAO, Changshi[1]

1. Additive Manufacturing Institute, Shenzhen University, China

9:45

(30-B3-S18-10) Robocasting of Conformable Ceramics

ELIZAROVA, Iuliia[*1]; SAIZ, Eduardo[1]; VANDEPERRE, Luc[1]; GIULIANI, Finn[1]

1. Imperial College London, UK

10:00

(30-B3-S18-11) Fabrication of Functionally Graded Al2O3-ZrO2 3-Dimensional Structures

KIM, Jeehwan[*1,2]; PARK, Honghyun[1]; CHOI, Yeong-Jin[1]; YOON, Seok Young[2]; YUN, Hui-suk[1]

1. Advanced Biomaterials Research Group, Korea Institute of Materials Science, Korea
2. Department of Materials Science and Engineering, Pusan National University, Korea

■October 30 (Wed) (Room Theater) ■

20:Ceramics for Rechargeable Energy Storage

Solid-state battery

Session Chairs: AKIMOTO, Junji, AIST

8:30

(30-Theater-S20-01) Fabrication of garnet-type solid electrolyte using precursor material

HAMAO, Naoki[*1]; YAMAGUCHI, Yuki[1]; HAMAMOTO, Koichi[1]

1. National institute of Advanced Industriral Science and Technology, Japan

8:45

(30-Theater-S20-02) Synthesis and electrochemical characterization of Mg, Sr doped $Li_7La_3Zr_2O_{12}$ as Li ion conducting solid electrolyte

TAKEUCHI, Yuki[*1]; HIKOSAKA, Hideaki[1]; SHISHIHARA, Daisuke[1]; MIZUTANI, Hidetoshi[1]

1. NGK SPARK PLUG CO., LTD., Japan

9:00

(30-Theater-S20-03) Synthesis, Phase relation, Sinterability and Ionic conductivity of Ga and Sr-substituted $Li_7La_3Zr_2O_{12}$ Garnet-type oxides (Invited)

MORI, Daisuke[*1]; MATSUDA, Yasuaki[2]; TAMINATO, Sou[1]; IMANISHI, Nobuyuki[1]

1. Mie University, Japan
2. Osaka Institute of Technology, Japan

Session Chairs: MORI, Daisuke, Mie University

9:30

(30-Theater-S20-04) Low-Temperature Sintering Process of Garnet-type Solid Electrolytes (Invited)

YAMADA, Hirotoshi[*1]

1. Nagasaki University, Japan

(10:00) Coffee Break

Session Chairs: MORI, Daisuke, Mie University

10:15

(30-Theater-S20-05) Technical Barriers for Adoption of Ceramic Electrolytes for Li+ Batteries (Invited)

RAJ, Rishi[*1]

1. University of Colorado Boulder, USA

10:45

(30-Theater-S20-06) Fabrication of Li－soild electrolyte interface by ultrasonic-assisted thermal fusion bonding process

KITAURA, Hirokazu[*1]; HOSONO, Eiji[1]; ZHOU, Haoshen[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

Session Chairs: IRIYAMA, Yasutoshi, Nagoya University

11:00

(30-Theater-S20-07) Li Dendrite Suppression in Solid State Electrolyte Batteries (Invited)

WANG, Chunsheng[*1]

1. Department of Chemical and Biomolecular Engineering, Department of Chemistry and biochemistry, University of Maryland, USA

11:30

(30-Theater-S20-08) Stabilizing Li anodes using LLZO membrane technology (Invited)

SAKAMOTO, Jeff[*1,2,3]

1. Department of Mechanical Engineering, University of Michigan, USA
2. Department of Material Science and Engineering, University of Michigan, USA
3. Department of Macromolecular Science and Engineering, University of Michigan, USA

Session Chairs: YAMADA, Hirotoshi, Nagasaki University

13:30

(30-Theater-S20-09) Development of all-solid-state rechargeable batteries with ductile amorphous materials (Invited)

HAYASHI, Akitoshi[*1]; SAKUDA, Atsushi[1]; TATSUMISAGO, Masahiro[1]

1. Osaka Prefecture University, Japan

14:00

(30-Theater-S20-10) Research and development of garnet type single-crystal solid electrolyte by melt growth

KATAOKA, Kunimitsu[*1]; NAGATA, Hiroshi[1]; AKIMOTO, Junji[1]

1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

14:15

(30-Theater-S20-11) Cold sintering process for development of solid-state electrolytes and fabrication of all-solid-state Li batteries

SEO, Joo-Hwan[*1]; LEE, Wonho[2]; FAIR, Ryan[1]; LENG, Yongjun[3]; GOMEZ, Enrique D.[2]; WANG, Chao-Yang[3]; RAJAGOPALAN, Ramakrishnan[4]; MALLOUK, Thomas E.[5]; NAKAYA, Hiroto[6]; IWASAKI, Masato[6]; YAMAMOTO, Hiroshi[6]; RANDALL, Clive A.[7]

1. Department of Materials Science and Engineering, Pennsylvania State University, USA
2. Department of Chemical Engineering, Pennsylvania State University, University Park, USA
3. Department of Mechanical and Nuclear Engineering, Pennsylvania State University, University Park, USA

4. Department of Engineering, Pennsylvania State University, USA
5. Department of Chemistry, Pennsylvania State University, USA
6. Engineering R&D Group, NGK Spark Plug Co., Ltd., Japan
7. Materials Research Institute, Pennsylvania State University, USA

Session Chairs: SAKAMOTO, Jeff, University of Michigan

14:30

(30-Theater-S20-12) Oxide-based All-Solid-State Rechargeable Lithium Batteries using Aerosol Deposition (Invited)

IRIYAMA, Yasutoshi[*1,2]; SAKAKURA, Miyuki[1,2]; YAMAMOTO, Takayuki[1,2]; MOTOYAMA, Munekazu[1,2]
1. Nagoya University, Japan
2. JST ALCA-SPRING, Japan

(15:00) Coffee Break

Session Chairs: SAKAMOTO, Jeff, University of Michigan

15:15

(30-Theater-S20-13) Cathode design for rechargeable lithium-metal batteries with $Li_{6.25}Al_{0.25}La_3Zr_2O_{12}$ solid electrolyte (Invited)

MUNAKATA, Hirokazu[*1]; WAKASUGI, Jungo[1]; KOZUKA, Kyoko[1]; HONMOU, Katsuya[1]; SHOJI, Mao[1]; KIMURA, Takeshi[1]; KANAMURA, Kiyoshi[1]
1. Tokyo Metropolitan University, Japan

Session Chairs: KITAURA, Hirokazu, AIST

15:45

(30-Theater-S20-14) Toward large-scale all-solid-state lithium-ion batteries: Fabrication of sheet-type electrodes and electrolytes (Invited)

JUNG, Yoon Seok[*1]
1. Department of Energy Engineering, Hanyang University, South Korea

16:15

(30-Theater-S20-15) Effect of heat treatment on electrochemical properties of interface between $LiCoO_2$-Li_3BO_3 composite and ceramic type solid electrolyte formed by aerosol deposition method.

PARK, Jae-sang[*1]; YOSUKE, Kushida[1]; KYOSHI, Kanamura[1]
1. Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University, Japan

16:30

(30-Theater-S20-16) Ceramic-based Flexible Composite Sheet Electrolyte for Li-metal Batteries

CHENG, Eric Jianfeng[*1]; KIMURA, Takeshi[1]; MUNAKATA, Hirokazu[1]; KANAMURA, Kiyoshi[1]
1. Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University, Japan

Session Chairs: MUNAKATA, Hirokazu, Tokyo Metropolitan University

16:45

(30-Theater-S20-17) *Operando* soft X-ray analysis for active materials in all-solid-state Li-ion battery

HOSONO, Eiji[*1,2]; ASAKURA, Daisuke[1,2]; KITAURA, Hirokazu[1]; SUDAYAMA, Takaaki[1]; AKADA, Keishi[1,3]; NAGAMURA, Naoka[4,5]; HORIBA, Koji[6]; OSHIMA, Masaharu[7]; MIYAWAKI, Jun[7]; HARADA, Yoshihisa[2,3,7]
1. Research Institute for Energy Conservation, National Institute of Advanced Industrial Science and Technology, Japan
2. AIST-UTokyo Advanced Operando-Measurement Technology Open Innovation Laboratory, AIST, Japan
3. Institute for Solid State Physics, The University of Tokyo, Japan
4. Research Center for Advanced Measurement and Characterization, National Institute for Materials Science, Japan
5. Japan Science and Technology Agency, PRESTO, Japan
6. Photon Factory, Institute of Materials Structure Science, High Energy Accelerator Research Organization, Japan
7. Synchrotron Radiation Research Organization, Japan

17:00

(30-Theater-S20-18) Molten salt assisted cold sintering applied to solid state sodium ion battery materials

GRADY, Zane[*1]; NDAYISHIMIYE, Arnaud[1]; TSUJI, Kosuke[1]; SEO, Joo-Hwan[1]; RANDALL, Clive[1]
1. Department of Materials Science and Engineering, the Pennsylvania State University, USA

17:15

(30-Theater-S20-19) Crystalline $Na_3V_2(PO_4)_3$ Cathode Material Prepared by Glass-Ceramic Process

NIU, Sai[*1]; AKAMATSU, Hirofumi[1]; AKIYAMA, Yuto[1]; HASEGAWA, George[1]; HAYASHI, Katsuro[1]
1. Department of Applied Chemistry, Kyushu University, Japan

17:30

(30-Theater-S20-20) Fabrication of NASICON-type All-Solid-State Sodium-Ion Batteries

SASAKI, Naoya[*1]; HASEGAWA, George[1]; AKAMATSU, Hirofumi[1]; HAYASHI, Katsuro[1]
1. Department of Applied Chemistry, Graduate School of Engineering, Kyushu University, Japan

■October 30 (Wed) (Room C2) ■

21:Specific Reaction Field and Material Fabrication Design

Pioneering process (II)

Session Chairs: YIN, Shu, Tohoku University

8:30

(30-C2-S21-08) Preparation and properties of reaction bonded silicon carbide (RB-SiC) ceramics with high SiC percentage by two-step sintering using compound carbon sources (Invited)

ZHANG, Nan-long[1]; YANG, Jian-Feng[*1]; DENG, Yu-Chen[1]; WANG, Bo[1]; YIN, Ping[1]
1. State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an, 710049, China

Session Chairs: ENOMOTO, Naoya, National Institute of Technology, Ariake College

9:00

(30-C2-S21-09) Oxidative Catalytic Activities of Hydroxyapatite Materials Synthesized via Different Approaches

NAKAGAWA, Sohei[*1,2]; XIN, Yunzi[1]; INOMATA, Yoshihiko[2]; OYAMA, Ryo[2]; NAMIKAWA, Toshihiro[2]; YAMADA, Masami[2]; SHIRAI, Takashi[1]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. R&D Department, Taihei Chemical Industrial Co.,Ltd., Japan

9:15

(30-C2-S21-10) High Oxygen Storage Performance of YBaCo4O7+ δ with a Novel Synthesis Process

CHEN, Tingru[*1]; ASAKURA, Yusuke[1]; YIN, Shu[1]
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

9:30

(30-C2-S21-11) A Novel and Facile Synthesis of Silicon Nanocrystals Using Disproportion of SiO through the Mechanochemical Treatment

XU, Yuping[*1]; XIN, Yunzi[2]; LEE, Jeongbin[1]; SHIRAI, Takashi[1,2]
1. Department of Life Science and Applied Chemistry, Graduate School of Engineering, Nagoya Institute of Technology, Japan
2. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

Laser process

Session Chairs: HAYASHI, Yamato, Tohoku University

9:45

(30-C2-S21-12) Rapid Sintering of Ceramics using Nd:YAG Laser (Invited)

KIMURA, Teiichi[*1]; SUEHIRO, Satoshi[1]
1. Japan Fine Ceramics Center, Japan

Session Chairs: NAKAMURA, Takahiro, Tohoku University

10:15

(30-C2-S21-13) Direct writing of Cu-based micropatterns using femtosecond laser reduction of copper oxide nanoparticles (Invited)

MIZOSHIRI, Mizue[*1]
1. Nagaoka University of Technology, Japan

(10:45) Coffee Break

Session Chairs: SHIRAI, Takashi, Nagoya Institute of Technology

11:00

(30-C2-S21-14) Development of SiC ceramics using direct laser heating

SUEHIRO, Satoshi[*1]; KIMURA, Teiichi[1]
1. Japan Fine Ceramics Center, Japan

11:15

(30-C2-S21-15) Fabrication of $BaSnO_3$ thin films on SiO_2 glass substrates using excimer laser-assisted metal organic decomposition

MATSUBAYASHI, Yasuhito[*1]; NOMOTO, Junichi[1]; YAMAGUCHI, Iwao[1]; NISHIO-HAMANE, Daisuke[2]; TSUCHIYA, Tetsuo[1]
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology, Japan
2. Institute for Solid State Physics, University of Tokyo, Japan

Material fablication

Session Chairs: NAKAMURA, Takahiro, Tohoku University

11:30

(30-C2-S21-16) Preparation of Self-standing Hydrogels based on Biomass Nanofibers by Hydrothermal Gelation (Invited)

OSADA, Mitsumasa[*1]
1. Shinshu University, Japan

13:30

(30-C2-S21-17) Synthesis of $Li_2CoTi_3O_8$ nanoparticles via a citric acid method toward electrochemical capacitor applications

NAKAMURA, Yuya[*1]; SUZUKI, Yoshikazu[2]
1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Japan
2. Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

Session Chairs: NAKAMURA, Takahiro, Tohoku University

13:45

(30-C2-S21-18) Synthesis of Continuous Carbon Nanotube Fibers and Sheets and their properties

MOON, Sook Young[*1]; KANG, In Ji[1]
1. Korea Institute of Science and Technology, Japan

Nonequilibrium reaction field(II)

Session Chairs: KIMURA, Teiichi, Japan Fine Ceramics Center

14:00

(30-C2-S21-19) One-step Synthesis of Structurally Well-Controlled TiO_2 Photocatalyst in Specific Reaction Filed Induced by Single-Mode Magnetic Microwave

KATO, Kunihiko[*1]; XIN, Yunzi[2]; SHIRAI, Takashi[1,2]
1. Department of Life Science and Applied Chemistry, Graduate School of Engineering, Nagoya Institute of Technology, Japan
2. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

14:15

(30-C2-S21-20) High Pressure Synthesis and Characterization of $NbSn_2$ with the $CrSi_2$-type Structure

ISHIHARA, Hiroki[*1]; FUKUSHIMA, Jun[1]; HAYASHI, Yamato[1]; TAKIZAWA, Hirotsugu[1]
1. Department of Applied Chemistry, Graduate School of Engineering, Tohoku University, Japan

Pioneering process (III)

Session Chairs: KIMURA, Teiichi, Japan Fine Ceramics Center

14:30

(30-C2-S21-21) Influence of thermal decomposition process of organic solvent on reduction process of ceramic materials

SUEHARA, Kentaro[*1]; ISHIKAWA, Yoshie[2]; KOSHIZAKI, Naoto[1]; OMURA, Kazunobu[3]; NAGATA, Harunori[3]; YAMAUCHI, Yuji[1]
1. Division of Quantum Science and Engineering, Hokkaido University, Japan
2. Nanomaterials Research Institute, AIST, Japan
3. Division of Mechanical and Space Engineering, Hokkaido University, Japan

14:45

(30-C2-S21-22) Improved Electrical Property of Alumina/Carbon Composite via Iodine Impregnation

TAKEUCHI, Yuya[*1]; XIN, Yunzi[2]; NGUYEN, Huu Hien[2]; SHIRAI, Takashi[1,2]
1. Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan
2. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

■October 30 (Wed) (Room A3) ■

23:Geopolymer, Building Materials and Low Environmental Loading Construction Materials

Session Chairs: SAGAWA, Takahiro, Maebashi Insttitute of Technology

15:30

(30-A3-S23-01) The Influence of Storage Conditions on Quality of Cement

NAKAGAWA, Yuta[*1]; KUROKAWA, Daisuke[1]; UCHIDA, Shunichiro[1]; HIRAO, Hiroshi[1]
1. Central Research Laboratory, Taiheiyo cement Co., Japan

15:45

(30-A3-S23-02) Study on the application of EBSD to the estimation of burning process of cement clinker

BABA, Tomoya[*1]; NOZAWA, Risako[1]; HIKIDA, Tomoyuki[1]; HOSOKAWA, Yoshifumi[1]
1. Taiheiyo Cement Corporation, Japan

16:00

(30-A3-S23-03) Reaction of $3CaO{\cdot}Al_2O_3{\cdot}CaSO_4{\cdot}12H_2O$ and $CaCrO_4$ under highly alkaline conditions

OHYA, Junichi[*1]; SANGO, Hiroyuki[1]
1. Nihon University, Japan

16:15

(30-A3-S23-04) Analysis of early hydration of Fly ash cement with alkanolamine

SONG, Hyeonjin[*1]; ATARASHI, Daiki[2]; HOSOKAWA, Yoshifumi[3]; MIYAKAWA, Miho[4]
1. Graduate School of Science and Engineering, Shimane University, Japan
2. Science of Environmental Systems, Graduate School of Natural Science and Technology, Shimane University, Japan
3. Central Research Laboratory, TAIHEIYO CEMENT CORPORATION, Japan
4. R&D Engineer, GCP Chemicals K.K., Japan

16:30

(30-A3-S23-05) Properties of Fly Ash/Slag-based Geopolymer Exposed to High Temperature and Sulfuric Acid

SALUDUNG, Apriany[*1]; AZEYANAGI, Takumu[1]; OGAWA, Yuko[1]; KAWAI, Kenji[1]

1. Department of Civil and Environmental Engineering, Hiroshima University, Japan

Session Chairs: ATARASHI, Daiki, Shimane University

16:45

(30-A3-S23-06) Effect of chemical composition of slag on autogenous shrinkage of Portland cement-blast furnace slag system

SAGAWA, Takahiro[*1]
1. Maebashi Institute of Technology, Japan

17:00

(30-A3-S23-07) Development of Industrially-Viable Geopolymer Compositions

FISHBURN, Benjamin David[*1,2]; KOSHY, Pramod[2]; NUMATA, Takafumi[1]; RAWAL, Aditya[2]
1. Brickworks Ltd,, Australia
2. School of Materials Science and Engineering, UNSW Sydney, Australia

17:15

(30-A3-S23-08) Preparation of ceramic tiles from granulated blast furnace slag and CRT panel glass

TAKEDA, Miyako[*1]; SAWAGUCHI, Naoya[1]; INANO, Hiroyuki[2]; NOMURA, Takafumi[2]
1. Muroran Institute of Technology, Japan
2. Hokkaido Research Organization, Japan

17:30

(30-A3-S23-09) Fabrication of neutron shielding carbide ceramics using geopolymer

NAGATA, Yohei[*1]; HASHIMOTO, Shinobu[1]; ANDO, Kotaro[1]; HONDA, Sawao[1]; DAIKO, Yusuke[1]; IWAMOTO, Yuji[1]
1. Nagoya Institute of Technology, Japan

17:45

(30-A3-S23-10) Fabrication of thermal protection system materials using a hand-layup method with geopolymer binder

IMAI, Haruo[*1]; HASHIMOTO, Shinobu[1]; ANDO, Kotaro[1]
1. Nagoya Institute of Technology, Japan

■October 30 (Wed) (Room B6) ■

25:Direct Thermal-to-Electrical Energy Conversion Materials and Thermal Energy Harnessing Challenges

Low-D/Interfaces

Session Chairs: MORI, Takao (1) ; CAILLAT, Thierry (2), (1)NIMS, (2)California Institute of Technology

9:00

(30-B6-S25-06) Thermoelectric Transport in 2D structures (Keynote)

ZEBARJADI, Mona[*1,2]; LIU, Naiming[2]; ROSUL, Golam[1]; ZHU, Tianhui[1]
1. Department of Electrical and Computer Engineering, University of Virginia, USA
2. Department of Electrical and Computer Engineering, University of Virginia, USA

9:45

(30-B6-S25-07) The Thermoelectric Properties of SnSe Continue to Surprise: Extraordinary Electron and Phonon Transport (Invited)

ZHAO, Li-Dong[*1]
1. Beihang University, China

10:15

(30-B6-S25-08) Transport Properties of Silicon Clathrate System with Nano Scale Interface Calculated by Density Functional Theory and Non-Equilibrium Green's Function Method

ANNO, Hiroaki[*1]; OKAMOTO, Kazuya[1]
1. Department of Electrical Engineering, Sanyo-Onoda City University, Japan

(10:30) Coffee Break

Selenides

Session Chairs: ZEBARJADI, Mona (1), ZHAO, Li-Dong (2), (1)University of Virginia, (2)Beihang University

10:45

(30-B6-S25-09) Ultra-high Thermoelectric Figure-of-merit in Nano-inclusion Engineered Cu_2Se (Invited)

WANG, Xiaolin[*1,2]
1. ARC Centre of Excellence in Future Low-Energy Electronics Technologies (FLEET), University of Wollongong, Australia
2. Institute for Superconducting and Electronic Materials (ISEM), Australian Institute for Innovative Materials (AIIM), University of Wollongong, Australia

11:15

(30-B6-S25-10) Liquid-like Thermoelectric Materials (Invited)

SHI, Xun[*1]; QIU, Pengfei[1]; CHEN, Lidong[1]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

11:45

(30-B6-S25-11) Significantly Enhanced Near-Room-Temperature Thermoelectric Figure of Merit in α-Cu_2Se through Excess Cu Addition

TAK, Jang-Yeul[*1,2]; NAM, Woo Hyun[1]; LEE, Changhoon[3,4]; KIM, Sujee[4]; LIM, Young Soo[5]; KO, Kyungmoon[6]; LEE, Soonil[7]; SHIN, Weon Ho[1]; CHO, Jung Young[1]; SEO, Won-Seon[1]; CHO, Hyung Koun[2]; SHIM, Ji-Hoon[3,4]; PARK, Cheol-Hee[6]
1. Energy and Environment Division, Korea Institute of Ceramic Engineering and Technology, Korea
2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea
3. Department of Chemistry, Pohang University of Science and Technology, Korea
4. Division of Advanced Nuclear Engineering, Pohang University of Science and Technology, Korea
5. Department of Materials System Engineering, Pukyong National University, Korea
6. LG Chem./LG Science Park, Korea
7. School of Materials Science and Engineering, Changwon National University, Korea

Sulfides/Rattling

Session Chairs: WANG, Xiaolin (1) ; SHI, Xun (2), (1)FLEET-University of Wollongong-ISEM-AIIM, (2)Shanghai Institute of Ceramics-Chinese Academy of Sciences

13:30

(30-B6-S25-12) Mineral-Inspired Thermoelectric Sulphides (Invited)

POWELL, Anthony[*1]; VAQUEIRO, Paz[1]; LONG, Sebastian[1]; MANGELIS, Panagiotis[1]
1. University of Reading, UK

14:00

(30-B6-S25-13) Recent advances in ternary and quaternary bulk thermoelectric sulfides (Invited)

GUILMEAU, Emmanuel[*1]
1. CRISMAT, CNRS, Normandie Univ, France

14:30

(30-B6-S25-14) Strong phonon scattering in thermoelectric colusites and tetrahedrites (Invited)

SUEKUNI, Koichiro[*1,2]; OHTA, Michihiro[3]; LEE, Chul-Ho[3]; NISHIBORI, Eiji[4]; TADANO, Terumasa[5]; UMEO, Kazunori[6]; TAKABATAKE, Toshiro[6]; GUILMEAU, Emmanuel[7]; OHTAKI, Michitaka[1,2]
1. Department of Applied Science for Electronics and Materials, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. Transdisciplinary Research and Education Center for Green Technologies, Kyushu University, Japan
3. Research Institute for Energy Conservation, National Institute of Advanced Industrial Science and Technology (AIST), Japan
4. Division of Physics, Faculty of Pure and Applied Sciences, Tsukuba Research Center for Energy Materials Science (TREMS), University of Tsukuba, Japan
5. Research Center for Magnetic and Spintronic Materials, National

Institute for Materials Science (NIMS), Japan
6. Department of Quantum Matter, Graduate School of Advanced Sciences of Matter, Hiroshima University, Japan
7. Normandie Univ, ENSICAEN, UNICAEN, CNRS, CRISMAT, France

15:00

(30-B6-S25-15) Thermoelectric Zintl phases containing Na atoms disordered in tunnel frameworks

YAMADA, Takahiro*[1,2]; KANNO, Masahiro[1,3]; YAMANE, Hisanori[1]
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
2. PRESTO, Japan Science and Technology Agency, Japan
3. Graduate School of Engineering, Tohoku University, Japan

(15:15) Coffee Break

Chalcogenides

Session Chairs: POWELL, Anthony (1) ; SUEKUNI, Koichiro (2), (1)University of Reading, (2)Kyushu University

15:30

(30-B6-S25-16) Study on the Structures-Function Relationship on thermoelectric materials (Invited)

ZHOU, Xiaoyuan*[1,2]; ZHANG, Bin[2]; LU, Xu[1]; WANG, Guoyu[3,4]
1. Chongqing Key Laboratory of Soft Condensed Matter Physics and Smart Materials, College of Physics, P. R. China
2. Analytical and Testing Center, Chongqing University, P. R. China
3. Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, P. R. China
4. University of Chinese Academy of Sciences, P. R. China

16:00

(30-B6-S25-17) Thallium Silver Chalcogenides: from a *pnp* Conduction Switching Material to an Incommensurate Composite Structure with High Thermoelectric Performance (Invited)

SHI, Yixuan[1]; KLEINKE, Holger*[1]
1. University of Waterloo, Canada

16:30

(30-B6-S25-18) Understanding of the Van der Waals Gaps Enhanced Performance in GeTe based Thermoelectric Materials (Invited)

XIE, Lin[1]; WU, Di[1,2]; HE, Jiaqing*[1]
1. Department of Physics, Southern University of Science and Technology, China
2. School of Materials Science and Engineering, Shaanxi Normal University, China

17:00

(30-B6-S25-19) Chiral materials and their thermoelectric properties (Invited)

LI, Qiang*[1]
1. Brookhaven National Laboratory, USA

17:30

(30-B6-S25-20) High Thermoelectric Performance in Ge-Sb-Te via Vacancy Control (Invited)

WONG, D.P.[1,2]; BAYIKADI, K.S.[3]; WU, C.T.[4]; CHEN, L.C.[2]; RAMAN, S.[3]; CHEN, Kuei-Hsien*[1,2]
1. Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan
2. Center for Condensed Matter Sciences, National Taiwan University, Taiwan
3. Institute of Physics, Academia Sinica, Taiwan
4. Taiwan Semiconductor Research Institute, Taiwan

■October 30 (Wed) (Room B2) ■

28:Photo-functional Inorganic Materials

Session Chairs: TODA, Kenji, Niigata University

13:30

(30-B2-S28-01) Development of Long-Term Stable Halide Perovskite Quantum Dots for Wide Color Gamut Display (Keynote)

YOON, Dae Ho*[1,2]
1. School of Advanced Materials Science & Engineering, Sungkyunkwan University, Korea
2. SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU) , Korea

14:00

(30-B2-S28-02) Evidence and modeling of mechanoluminescence in a transparent glass particulate composite (Invited)

ROUXEL, Tanguy*[1]; DUBERNET, Marion[1]; GUEGUEN, Yann[1]; HOUIZOT, Patrick[1]; CELARIE, Fabrice[1]; BRUYER, Emilie[1]; ROCQUEFELTE, Xavier[1]
1. University of Rennes 1, France

Session Chairs: HAYAKAWA, Tomokatsu, Nagoya Institute of Technology

14:30

(30-B2-S28-03) Novel material-search method for transparent optical materials with high melting point using electric arc

KURASHIMA, Yutaro*[1]; KUROSAWA, Shunsuke[2]; MURAKAMI, Rikito[3]; YAMAJI, Akihiro[1]; KAMADA, Kei[2,3]; YOSHINO, Masao[1]; TOYODA, Satoshi[2]; SATO, Hiroki[2]; YOKOTA, Yuui[2]; OHASHI, Yuji[2]; YOSHIKAWA, Akira[1,2,3]
1. Institute for Materials Research, Tohoku University, Japan
2. New Industry Creation Hatchery Center, Tohoku University, Japan
3. C&A Corporation, Japan

14:45

(30-B2-S28-04) Deep Red Luminescence based on 3d Transition Metals in Lithium Aluminates

MATSUSHIMA, Yuta*[1]; TAMURA, Hideto[1]; KOBAYASHI, Riho[1]; KAMADA, Yuki[1]; ICHIKAWA, Joichiro[1]; SATO, Chika[1]; KOMINAMI, Hiroko[2]; HARA, Kazuhiko[3]; KAKIHANA, Masato[4]
1. Department of Chemistry and Chemical Engineering, Yamagata University, Japan
2. Department of Electronics and Materials Science, Shizuoka University, Japan
3. Research Institute of Electronics, Shizuoka University, Japan
4. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

15:00

(30-B2-S28-05) Stabilization of light emitting silver-clusters and efficient energy transfer to rare-earth ions in glasses and faujasite zeolites

YE, Song*[1]; WANG, Deping[1]; LIN, Jian[1]; YAO, Aihua[1]
1. School of Materials Science and Engineering, Tongji University, China

15:15

(30-B2-S28-06) Luminescence of Mn^{4+} phosphor with octahedral Si site

ITO, Sayaka*[1]; UEMATSU, Kazuyoshi[2]; YAMANASHI, Ryota[3]; OKURA, Hiroshi[3]; DERTINGER, Stephan[4]; TODA, Kenji[1]; SATO, Mineo[1]
1. Graduate School of science and Technology, Niigata University, Japan
2. Department of Chemistry and Chemical Engineering, Niigata University, Japan
3. Merck Ltd. Japan
4. Merck KGaA, Japan

(15:30) Coffee Break

Session Chairs: TODA, Kenji, Niigata University

15:45

(30-B2-S28-07) Controlling Eu2+/Eu3+ Luminescence of the Na2.74Sc2(PO4)3-x:0.13Eu Phosphors via Phosphate Group (Invited)

HUANG, Yu Shu[1]; SU, Chaochin[1]; LIN, Chun Che*[1]
1. Institute of Organic and Polymeric Materials, National Taipei University of Technology, Taiwan

Session Chairs: MATSUSHIMA, Yuta, Yamagata University

16:15

(30-B2-S28-08) Tunable Photoluminescence,

Afterglow and Thermoluminescence Properties of Eu2+ and Eu3+ Co-activated Ba1-x(Zr,Ti)Si3O9:xEu

ZHOU, Zhenzhen[*1,3]; XU, Xiaoke[1,3]; ZHANG, Ying[1,3]; WANG, Caiyan[1,2,3]; DENG, Mingxue[1,2,3]; ZHANG, Xiang[1,2,3]; LIU, Qian[1,3]
1. State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, China
3. Shanghai Institute of Materials Genome, China

16:30

(30-B2-S28-09) Phase-Pure Synthesis, Structural and Photoluminescence Properties of New Yellow-Emitting Eu^{+2}-Doped Sr-containing Phosphor Powders, $Sr_{1+x}Si_{28-2x}Al_{2+2x}N_{40}$ (x = 2)

ESTILI, Mehdi[*1]; TAKAHASHI, Kohsei[1]; XIE, Rong-Jun[2]; SUZUKI, Tohru[1]; HIROSAKI, Naoto[1]
1. National Institute for Materials Science (NIMS), Japan
2. Xiamen University, China

16:45

(30-B2-S28-10) Temperature dependence of the emission spectra shape in Zn deficient $ZnGa_2O_4$:Mn film

DAZAI, Takuro[*1]; YASUI, Shintaro[1]; TANIYAMA, Tomoyasu[1,2]; ITOH, Mitsuru[1]
1. Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
2. Department of Physics, Nagoya University, Japan

Session Chairs: TODA, Kenji, Niigata University

17:00

(30-B2-S28-11) Recent Advancement in Ultra long Persistent Phosphors with Long Wavelength (Invited)

WANG, YUHUA[*1]; GUO, HAIJIE[1]; FENG, PENG[1]; LIU, DONGWEI[1]; YE, QIANGFEI[1]
1. National & Local Joint Engineering Laboratory for Optical Conversion Materials and Technology, Lanzhou University, China

17:30

(30-B2-S28-12) Alcohol-assistant Growth of Narrow-Band Red-Emitting Fluoride phosphors for White-Light-Emitting Diodes (Invited)

ZHOU, Wenli[*1,2]; WANG, Ren-Hong[1,3]; LIU, Ru-Shi[1]
1. National Taiwan University, Taiwan
2. Hunan Normal University, China
3. National Taipei University of Technology, Taiwan

■October 30 (Wed) (Room C1) ■

29:Liquid-mediated Structuring of Ceramics and Organic-inorganic Hybrid Materials

Functional Materials

Session Chairs: NAKANISHI, Kazuki, Nagoya University

8:30

(30-C1-S29-06) Solution-based Green Processing of Hybrid Perovskites for Solar Cell Applications (Invited)

MATHUR, Sanjay[*2]; FISCHER, Thomas[1]; UENULUE, Feray[1]; KULKARNI, Ashish[2]; MIYASAKA, Tsutomu[2]
1. University of Cologne, Germany
2. Toin University of Yokohama, Japan

9:00

(30-C1-S29-07) Hot-Electron Effect and the Applications of Superblack Materials (Invited)

DU, Ai[*1,2]; WANG, Hongqiang[1,2]; SUN, Wei[1,2]; XIE, Peitao[3]; JI, Xiujie[1,2]; HE, Xinru[1,2]; WU, Guangming[1,2]; ZHOU, Bin[1,2]; FAN, Runhua[4]; SHEN, Jun[1,2]
1. Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology, Tongji University, P. R. China
2. School of Physics Science and Engineering, Tongji University, P. R. China
3. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China
4. College of Ocean Science and Engineering, Shanghai Maritime University, China

9:30

(30-C1-S29-08) Polymer precursors to ion conducting glasses (i.e. LiPON) for thin films, adhesives, binders, and sintering aids. Towards all solid-state Li-S batteries. (Invited)

LAINE, Richard M.[*1]; TEMECHE, Eleni[1]; ZHANG, Xinyu[1]
1. University of Michigan, USA

(10:00) Coffee Break

Porous Materials

Session Chairs: INNOCENZI, Plinio, University of Sassari

10:15

(30-C1-S29-09) Macroporous Monoliths with Modified Compositions and Structures (Invited)

NAKANISHI, Kazuki[*1,2]; KANAMORI, Kazuyoshi[1]; LU, Xuanming[1]; HARA, Yosuke[1]
1. Department of Chemistry, Graduate School of Science, Kyoto University, Japan
2. Institute of Materials and Systems for Sustainability, Nagoya University, Japan

10:45

(30-C1-S29-10) Synthetic strategies toward ordered macroporous metal-organic frameworks monoliths

HARA, Yosuke[*1]; KANAMORI, Kazuyoshi[1]; NAKANISHI, Kazuki[2]
1. Kyoto University, Japan
2. Nagoya University, Japan

11:00

(30-C1-S29-11) Directing pores in framework compounds via heteroepitaxial approach (Invited)

TAKAHASHI, Masahide[*1]
1. Osaka Prefecture University, Japan

11:30

(30-C1-S29-12) Oriented Covalent-organic framework (COF) films grown on metal-hydroxides

IKIGAKI, Ken[*1]; OKADA, Kenji[1]; TOKUDOME, Yasuaki[1]; FALCARO, Paolo[2]; TARZIA, Andrew[3]; COLEMAN, Christopher[3]; DOONAN, Christian[3]; TAKAHASHI, Masahide[1]
1. Department of Materials Science, Osaka Prefecture University, Japan
2. Institute of Physical and Theoretical Chemistry, Graz University of Technology, Austria
3. Department of Chemistry, The University of Adelaide, Australia

11:45

(30-C1-S29-13) Preparation of hierarchically porous low valence transition metal (Mn, Co, Cu) based monoliths with 3D interconnected structures

LU, Xuanming[*1]; KANAMORI, Kazuyoshi[1]; NAKANISHI, Kazuki[2]
1. Department of Chemistry, Graduate School of Science, Kyoto University, Japan
2. Institute of Materials and Systems for Sustainability, Nagoya Univsertiy, Japan

Session Chairs: TAKAHASHI, Masahide, Osaka Prefecture University

13:30

(30-C1-S29-14) 2D-materials and dots embedded in hybrid matrices for sensing and optical applications (Invited)

INNOCENZI, Plinio[*1]
1. LMNT- Department of Chemistry and Pharmacy, University of Sassari, Italy

14:00

(30-C1-S29-15) Soft Chemical Approaches for

Preparation of Silica-Based Porous Materials (Invited)
KURODA, Kazuyuki[*1]
1. Waseda University, Japan

14:30
(30-C1-S29-16) Preparation of amino-functionalized flexible polysiloxane porous materials from organoalkoxysilane having urea bond and their characterizations
SHIGETAKE, Rikuo[*1]; NAKANISHI, Kazuki[2]; KANAMORI, Kazuyoshi[1]
1. Department of Chemistry, Graduate School of Science, Kyoto University, Japan
2. Institute of Materials and Systems for Sustainability, Nagoya University, Japan

14:45
(30-C1-S29-17) Preparation of Mesoporous Crystalline Silica with Large Crystallite Domains
MATSUNO, Takamichi[*1]; NAKAYA, Takamichi[1]; KURODA, Yoshiyuki[2]; WADA, Hiroaki[1]; SHIMOJIMA, Atsushi[1,3]; KURODA, Kazuyuki[1,3]
1. Department of Applied Chemistry, Waseda University, Japan
2. Green Hydrogen Research Center, Graduate School of Engineering, Yokohama National University, Japan
3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

15:00
(30-C1-S29-18) Crystallization behavior of zeolite beta from dried gel precursor prepared from metal-organic compounds with organic structure-directing agents.
HONDA, Sawao[*1]; MATSUDA, Yuma[1]; DAIKO, Yusuke[1]; IWAMOTO, Yuji[1]
1. Nagoya Institute of Technology, Japan

(15:15) Coffee Break

Silxoane-based Materials

Session Chairs: LAINE, Richard M., University of Michigan

15:30
(30-C1-S29-19) Preparation, Structural Analyses, and Properties of Multi-Chain Polysiloxanes (Invited)
KANEKO, Yoshiro[*1]; NOBAYASHI, Misaki[1]
1. Kagoshima University, Japan

16:00
(30-C1-S29-20) Revisiting Organic-Inorganic Hybrid Aerogels toward Advanced Transparency and Mechanical Flexibility
KANAMORI, Kazuyoshi[*1]; UEOKA, Ryota[1]; NAKANISHI, Kazuki[2]
1. Department of Chemistry, Graduate School of Science, Kyoto University, Japan
2. Institute of Materials and Systems for Sustainability, Nagoya University, Japan

16:15
(30-C1-S29-21) Photomechanical crystals consisting of diarylethenes modified with cage-type silsesquioxanes
KAJIYA, Ryota[*1]; SAKAKIBARA, Seiya[2]; IKAWA, Hanako[1]; HIGASHIGUCHI, Kenji[2]; MATSUDA, Kenji[2]; WADA, Hiroaki[1]; KURODA, Kazuyuki[1,3]; SHIMOJIMA, Atsushi[1,3]
1. Department of Applied Chemistry, Waseda University, Japan
2. Department of Synthetic Chemistry and Biological Chemistry, Kyoto University, Japan
3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

Novel Synthesis

Session Chairs: MATHUR, Sanjay, Toin University of Yokohama

16:30
(30-C1-S29-22) Tailoring porosity in freeze-casted ceria based materials (Invited)
KUMAR, Ravi[*1]; SHARMA MVSS, Raghunath[1]; PAPAKOLLU, Kousik[1]; GHOSH, Ritam[2]
1. Indian Institute of Technology - Madras (IIT Madras), India
2. VNIT Nagpur, India

17:00
(30-C1-S29-23) Preparation of Porous Indium Tin Oxides with Large Crystallite Sizes by Using Silica Colloidal Crystals as a Template
SAITO, Yumi[*1]; MATSUNO, Takamichi[1]; SHIMOJIMA, Atsushi[1,2]; WADA, Hiroaki[1]; KURODA, Kazuyuki[1,2]
1. Department of Applied Chemistry, Waseda University, Japan
2. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

17:15
(30-C1-S29-24) Chemie Douce Approach to the Synthesis of Template-Free Porous Ceramics (Invited)
RIEDEL, Ralf[*1]
1. TU Darmstadt, Germany

17:45
(30-C1-S29-25) Robust Structurally Colored Coating Films Prepared via the Electrophoretic Deposition Method
KATAGIRI, Kiyofumi[*1]; UESUGI, Ryo[1]; UEMURA, Kensuke[1]; INUMARU, Kei[1]; UCHIKOSHI, Tetsuo[2]; TAKEOKA, Yukikazu[3]
1. Department of Applied Chemistry, Hiroshima University, Japan
2. National Institute for Materials Science, Japan
3. Department of Molecular and Macromolecular Chemistry, Nagoya University, Japan

■October 30 (Wed) (Room C2) ■

30:Advanced Materials and Processing for Power Electronics Application

Highly heat-resistant resistor

Session Chairs: TSUCHIYA, T., AIST

15:15
(30-C2-S30-01) Conduction mechanisms and degradation behavior in RuO_2-based heat-resistant resistors (Invited)
MIYAYAMA, Masaru[*1]; NAKAMURA, Yoshinobu[1]; KITANAKA, Yuuki[1]
1. The University of Tokyo, Japan

15:45
(30-C2-S30-02) Optical Observation of the Thermal Degradation of a RuO_2 Resistor Designed for Power Module Application
NAKAMURA, Yoshinobu[*1]; KITANAKA, Yuuki[1]; ITO, Takeshi[2]; NAGATA, Hisakazu[2]; MASTUI, Takahiro[2]; NAKAJIMA, Tomohiko[3]; TSUCHIYA, Tetsuo[3]; MIYAYAMA, Masaru[1]
1. The University of Tokyo, Japan
2. KOA, Japan
3. AIST, Japan

Session Chairs: NAKAMURA, Y., The University of Tokyo

16:00
(30-C2-S30-03) A Strategy for Making High Temperature Tolerant Ceramic Chip Resistors Based on Durability Control of Multi-layered Metal Electrodes
NAKAJIMA, Tomohiko[*1]; NAGATA, Hisakazu[2]; ITO, Takeshi[2]; NAKAMURA, Yoshinobu[3]; MATSUI, Takahiro[2]; KITANAKA, Yuki[3]; MIYAYAMA, Masaru[3]; TSUCHIYA, Tetsuo[1]
1. National Institute of Advanced Industrial Science and Technology, Japan
2. KOA Corporation, Japan
3. The University of Tokyo, Japan

16:15
(30-C2-S30-04) Development of flexible RuO2 Thin Films for SiC power module by Photo Assisted

Metal Organic Deposition (ELAMOD)
TSUCHIYA, Tetsuo[*1]; UZAWA, Yuko[1]; NAKAJIMA, Tomohiko[1]; YAMAGUCHI, Iwao[1]; NOMOTO, Juichi[1]; CHRISEY, Douglas. B.[2]
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Department of Physics and Engineering Physics, Tulane University, USA

(16:30) Coffee Break

Power Electronics Application

Session Chairs: NAKAMURA, Y., The University of Tokyo

16:45
(30-C2-S30-05) Development of SiC Power Module for Next Generation Power Electronics (Invited)
YAMAGUCHI, Hiroshi[*1]
1. National Institute of Advanced Industrial Science and Technology, Japan

17:15
(30-C2-S30-06) Corundum-structured oxides for power device applications fabricated by Mist CVD technique (Invited)
KANEKO, Kentaro[*1,2,3]; SHINOHE, Takashi[4]; FUJITA, Shizuo[2,3]
1. Engineering Education Research Center, Kyoto University, Japan
2. Department of Electronic Science and Engineering, Kyoto University, Japan
3. Photonics and Electronics Science and Engineering Center, Kyoto University, Japan
4. FLOSFIA Inc., Japan

Session Chairs: TSUCHIYA, T., AIST

17:45
(30-C2-S30-07) Direct Observation of Interstitial-divacancy Complexes in beta-Ga2O3 Using Atomic Scale Scanning Transmission Electron Microscopy
JOHNSON, Jared[1]; VARLEY, Joel[2]; JACKSON, Christine[3]; AREHART, Aaron[3]; RINGEL, Steven[3]; VAN DE WALLE, Chris[4]; HWANG, Jinwoo[*1]
1. Department of Materials Science and Engineering, The Ohio State University, USA
2. Lawrence Livermore National Laboratory, USA
3. Department of Electrical and Computer Engineering, The Ohio State University, USA
4. Materials Department, University of California, USA

■October 30 (Wed) (Room B1A) ■

31:Porous Ceramics: From Innovative Processing to Advanced Applications and Functionalities

High SSA ceramics II

Session Chairs: LU, Yanxia Ann, Corning, Inc

8:30
(30-B1A-S31-26) Water adsorption on micro- and mesoporous materials (Invited)
ENDO, Akira[*1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:00
(30-B1A-S31-27) Ultrafast Synthesis of Zeolites: Breakthrough, Progress and Perspective (Invited)
WAKIHARA, Toru[*1]
1. The University of Tokyo, Japan

9:30
(30-B1A-S31-28) Metal Oxide Nanowires and Nanotubes for Environmental Applications (Invited)
LOCKMAN, Zainovia[*1]; ALIAS, Nurhaswani[2]; ROSLI, Siti Azlina[3]; RAHMAT, Subagja Toto[4]; TAN, Wai Kian[5]; KAWAMURA, Go[6]; NBELAYIM, Pascal[7]; MATSUDA, Atsunori[8]
1. Universiti Sains Malaysia, Malaysia
2. Universiti Sains Malaysia, Malaysia
3. Universiti Sains Malaysia, Malaysia
4. Universiti Sains Malaysia, Malaysia
5. Toyohashyi University of Technology, Japan
6. Toyohashyi University of Technology, Japan
7. Toyohashyi University of Technology, Japan
8. Toyohashyi University of Technology, Japan

10:00
(30-B1A-S31-29) Improvement of Hydrothermal Stability of Zeolites
IYOKI, Kenta[*1]; KIKUMASA, Kakeru[1]; ONISHI, Takako[1]; YONEZAWA, Yasuo[1]; CHOKKALINGAM, Anand[1]; OKUBO, Tatsuya[1]; WAKIHARA, Toru[1]
1. The University of Tokyo, Japan

10:15
(30-B1A-S31-30) Particle Stabilized Foams and Emulsions as Pastes for 3D Printing Multiscale Porous Ceramics
FRANKS, George[*1]; CHAN, Shareen[1]; SESSO, Mitchell[1,2]
1. University of Melbourne, Australia
2. LaTrobe University, Australia

■October 30 (Wed) (Room B2) ■

32:Crystalline Materials for Electrical, Optical and Medical Applications

Scintillator II

Session Chairs: ZHURAVLEVA, Mariya, University of Tennessee

8:30
(30-B2-S32-26) Characterization of Sm-doped alkaline-earth halide single crystalline scintillators
NAKAUCHI, Daisuke[*1]; OKADA, Go[2]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan
2. Kanazawa Institute of Technology, Japan

8:45
(30-B2-S32-27) Inverse proportional relationship of scintillators and dosimeter materials based on energy conservation law (Invited)
YANAGIDA, Takayuki[*1]; KAWAGUCHI, Noriaki[1]
1. Nara Institute of Science and Technology, Japan

9:15
(30-B2-S32-28) Development of Non-hygroscopic Inorganic Scintillators for Neutron Detection (Invited)
KAWAGUCHI, Noriaki[*1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

9:45
(30-B2-S32-29) Analysis of Energy Transfer and Relaxation in Fluoride Scintillators Using Transient Absorption Spectroscopy (Invited)
KOSHIMIZU, Masanori[*1]; MUROYA, Yusa[2]; YAMASHITA, Shinichi[3]; YAMAMOTO, Hiroki[4]; YANAGIDA, Takayuki[5]; FUJIMOTO, Yutaka[1]; ASAI, Keisuke[1]
1. Tohoku University, Japan
2. Osaka University, Japan
3. The University of Tokyo, Japan
4. National Institutes for Quantum and Radiological Science and Technology, Japan
5. Nara Institute of Science and Technology, Japan

(10:15) Coffee Break

Session Chairs: TAO, Xutang, Shandong University

10:30
(30-B2-S32-30) Optically stimulated luminescence properties of Tl-doped RbBr transparent ceramics with different Tl concentrations
KIMURA, Hiromi[*1]; KATO, Takumi[1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

10:45
(30-B2-S32-31) Radiation induced luminescence in

Sn-doped BaO-Gd_2O_3-Al_2O_3-SiO_2 glasses
SHIRATORI, Daiki[*1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

11:00
(30-B2-S32-32) Evaluation of optical and scintillation properties of Ti-doped $CaHfO_3$ crystal synthesized by the floating zone method
FUKUSHIMA, Hiroyuki[*1]; NAKAUCHI, Daisuke[1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

11:15
(30-B2-S32-33) Scintillation properties of Nd-doped $Gd(Ga_x,Al_{1-x})O_3$ crystals synthesized by the Floating Zone method
AKATSUKA, Masaki[*1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

11:30
(30-B2-S32-34) The research and application progress of GGAG:Ce ceramic scintillators
LUO, Zhaohua[*1]; JIANG, Haochuan[1]
1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, China

11:45
(30-B2-S32-35) Non-doped CaF_2 ceramics as a new radio-photoluminescence (RPL) material
KATO, Takumi[*1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

■October 30 (Wed) (Room B1B) ■

33:Multifunctional Coatings for Structural, Energy and Environmental Applications JFCA/ADCAL and Cross-sectoral Research cooperation of Ceramic Coating support Symposia

Novel Coating Processes in Engineering Ceramics

Session Chairs: SHINODA, Kentaro, AIST

8:30
(30-B1B-S33-32) Thermal Spray Processes to Achieve Nano-Structured Coatings for Extreme Environments (Invited)
BERNDT, Christopher C.[*1]; ANG, Andrew[1]
1. Mechanical and Production Design Engineering, Surface Engineering for Advanced Materials, "SEAM", Swinburne University of Technology, Australia

9:00
(30-B1B-S33-33) Evaluation for microstructure and material properties of Zirconia coatings by AD method (Invited)
TAKIZAWA, Ryoto[*1]; ASHIZAWA, Hiroaki[1]; KIYOHARA, Masakatsu[1]
1. TOTO LTD., Japan

9:30
(30-B1B-S33-34) Coatings of zirconium carbide and its composites by laser chemical vapor deposition using metal organic precursors
KATSUI, Hirokazu[*1]; HARADA, Katsuyoshi[2]; HOTTA, Mikinori[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Institute of Materials and Systems for Sustainability (IMaSS), Nagoya University, Japan

9:45
(30-B1B-S33-35) Functional Coatings using SiO_2 Nanoparticle
SUGIYAMA, Naota[*1]; IHARA, Taiki[1]
1. 3M Japan Limited, Japan

10:00
(30-B1B-S33-36) Plasma Spraying of Fine Ceramic Particles
SUZUKI, Masato[*1]; SHAHIEN, Mohammed[1]
1. National Institute of Advanced Industrial Science and Technology, AIST, Japan

(10:15) Coffee Break

Smart and Functional Coatings

Session Chairs: SUZUKI, Masato, AIST

10:45
(30-B1B-S33-37) Energy-efficient Strategy of VO_2-based Smart Coatings (Invited)
CAO, Xun[*1]; LUO, Hongjie[2]; SUN, Guangyao[1]; JIN, Ping[1,3]
1. State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai institute of Ceramics, Chinese Academy of Sciences, China.
2. School of Materials Science and Engineering, Shanghai University, China
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:15
(30-B1B-S33-38) Reactive arc-plasma coating to achieve on demand oxide films exhibiting tailored functions for wide applications (Invited)
YAMAMOTO, Tetsuya[1]; FURUBAYASHI, Yutaka[*1]
1. Kochi University of Technology, Japan

11:45
(30-B1B-S33-39) Mo_2N-Graphite Composite Supercapacitor Electrodes Deposited by Solution Precursor Plasma Spray (Invited)
CAOUETTE-FRITSCH, Hugo[1,2]; COYLE, Thomas William[*1,2]
1. Centre for Advanced Coating Technologies, University of Toronto, Canada
2. Department of Materials Science and Engineering, University of Toronto, Canada

35:Virtual Materials Design and Ceramic Genome

Novel materials and structures

Session Chairs: CHING, Wai-Yim, University of Missouri, USA

13:30
(30-B1B-S35-01) From Computing Grain Boundary Diagrams to Understanding Interfacial Superstructures (Keynote)
LUO, Jian[*1]; HU, Chongze[1]; YU, Zhiyang[2]
1. University of California, USA
2. Fuzhou University, China

14:00
(30-B1B-S35-02) Density Functional Theory Calculations of Oxygen Vacancy Formation in Metal Oxides
HINUMA, Yoyo[*1,2]; TOYAO, Takashi[3,4]; KAMACHI, Takashi[4,5]; MAENO, Zen[3]; TAKAKUSAGI, Satoru[3]; FURUKAWA, Shinya[3,4]; TAKIGAWA, Ichigaku[6,7]; SHIMIZU, Ken-ichi[3,4]
1. Center for Frontier Science, Chiba University, Japan
2. Center for Materials Research by Information Integration, Research and Services Division of Materials Data and Integrated System, National Institute for Materials Science, Japan
3. Institute for Catalysis, Hokkaido University, Japan
4. Elements Strategy Initiative for Catalysts and Batteries, Kyoto University, Japan
5. Department of Life, Environment and Materials Science, Fukuoka Institute of Technology, Japan
6. RIKEN Center for Advanced Intelligence Project, Japan
7. Institute for Chemical Reaction Design and Discovery, Hokkaido University, Japan

14:15
(30-B1B-S35-03) Novel nitride and oxide thin-film materials for thermoelectrics studied by experiments and theory (Invited)
EKLUND, Per[*1]

1. Energy Materials Unit, Thin Film Physics Division, Dept. of Physics, Chemistry and Biology (IFM), Linköping University, Sweden

14:45

(30-B1B-S35-04) Structural vacancies in CALPHAD modelling of zirconium carbide

DAVEY, Theresa[*1]; CHEN, Ying[1]
1. School of Engineering, Tohoku University, Japan

(15:00) Coffee Break

Session Chairs: EKLUND, Per, Link?ping University, Sweden

15:15

(30-B1B-S35-05) Origin of the existence of inter-granular glassy films in β-Si3N4 (Keynote)

CHING, Wai-Yim[*1]
1. University of Missouri-Kansas City, USA

15:45

(30-B1B-S35-06) Discovery of Novel Materials through Stability Prediction with Machine Learning (Invited)

KOYAMA, Yukinori[*1]; SEKO, Atsuto[1,2]; TANAKA, Isao[1,2]; FUNAHASHI, Shiro[3]; HIROSAKI, Naoto[3]
1. Research and Services Division of Materials Data and Integrated System, National Institute for Materials Science, Japan
2. Department of Materials Science and Engineering, Kyoto University, Japan
3. Research Center for Functional Materials, National Institute for Materials Science, Japan

16:15

(30-B1B-S35-07) Ternary-layered borides MAB phases: a class of damage-tolerant ceramics (Invited)

BAI, Yuelei[*1]; QI, Xinxin[1]; LI, Ning[1]; SUN, Dongdong[1]; HE, Xiaodong[1]; ZHENG, Yongting[1]; WANG, Rongguo[1]
1. National Key Laboratory of Science and Technology on Advanced Composites in Special Environments, Harbin Institute of Technology, P. R. China

16:45

(30-B1B-S35-08) Synthesis and characteristics of new germanate system oxide ion conductors found by materials informatics

TAJIMA, Shin[*1]; OHBA, Nobuko[1]; SUZUMURA, Akitoshi[1]; MASUOKA, Yumi[1]; KAJITA, Seiji[1]; ASAHI, Ryoji[1]
1. Toyota Central R&D Labs., Inc., Japan

17:00

(30-B1B-S35-09) Application of high-throughput structure screening in the design of new polar metals (Invited)

FANG, Yuewen[1,2]; CHEN, Hanghui[*2,3]
1. Kyoto University, Japan
2. New York University Shanghai, China
3. New York University, USA

■October 30 (Wed) (Room A3) ■

36:Second Young Professional Forum (YPF) in PACRIM

On the Design and Development of Novel Ferroelectrics and Perovskites

Session Chairs: MATSUNAGA, Chika, AIST

8:30

(30-A3-S36-17) Microstructure and Properties of $KSr_2Nb_5O_{15}$ Lead-free Ferroelectric Ceramics (Invited)

CHEN, Qian[1]; CAO, Shuyao[1]; WANG, Min[1]; LIU, Liangliang[1]; GAO, Feng[*1]
1. State Key Laboratory of Solidification Processing, School of Materials Science and Engineering, Northwestern Polytechnical University, P.R. China

9:00

(30-A3-S36-18) Hybrid Organic-Inorganic Perovskite Optoelectronic Conversion Devices (Invited)

LI, Liang[*1]
1. Soochow University, P. R. China

9:30

(30-A3-S36-19) New positive τf compensators for typical low-permittivity microwave dielectric ceramics and their applications (Invited)

LEI, Wen[*1,2]; DU, Kang[1,2]; SONG, Xiao-Qiang[1,2]; ZOU, Zheng-Yu[1,2]; ZHANG, Hai-Bo[3]; LU, Wen-Zhong[1,2]
1. School of Optical and Electronic Information, Huazhong University of Science and Technology, China
2. Key Lab of Functional Materials for Electronic Information (B), Ministry of Education, China
3. School of Optical and Electronic Information, Huazhong University of Science and Technology, China

10:00

(30-A3-S36-20) Colossal negative thermal expansion in Bi- and Pb-3d transition metal perovskites (Invited)

SAKAI, Yuki[*1,2]; AZUMA, Masaki[1,2]
1. Kanagawa Institute of Industrial Science and Technology, Japan
2. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan

■October 31 (Thu) (Room B1A) ■

03:Advanced Structural Ceramics for Extreme Environments

Fiber reinforced CMCs

Session Chairs: COSTA, Gustavo, NASA Glenn Research Center

9:00

(31-B1A-S03-21) Mechanical Performance of TiC-Reinforced Mo-Si-B-Based Ultrahigh Temperature Materials (Keynote)

YOSHIMI, Kyosuke[*1]
1. Tohoku University, Department of Materials Science, Japan

9:30

(31-B1A-S03-22) Short fiber reinforced CMCs: A cost-efficient approach for net-shaped components (Keynote)

KRENKEL, Walter[*1]; PUCHAS, Georg[1]; WINKELBAUER, Jonas[1]; LIENSDORF, Tom[1]
1. University of Bayreuth, Department of Ceramic Materials Engineering, Universitätsstraße 30, Germany

10:00

(31-B1A-S03-23) New generation ceramic brake discs based on circular knitted fabrics

KLOPSCH, Linda[*1]; CEPLI, Daniel[1]; SHI, Yuan[1]; JEMMALI, Raouf[1]; LANGHOF, Nico[2]; BALZER, Thorsten[2]
1. Department of Ceramic Composites and Structures; German Aerospace Center, Germany
2. Ceramic Materials Engineering; University of Bayreuth, Germany

(10:15) Coffee Break

Polymer derived ceramics

Session Chairs: KRENKEL, Walter, University of Bayreuth

10:30

(31-B1A-S03-24) Orientation grain growth and texture formation in h-BN matrix composite ceramics

DUAN, Xiaoming[*1,2,3]; YANG, Zhihua[1,2,3]; JIA, Dechang[1,2,3]; ZHOU, Yu[1,2]
1. Key Laboratory of Advanced Structural-Functional Integration Materials & Green Manufacturing Technology, Harbin Institute of Technology, China
2. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, China
3. State Key Laboratory of Advanced Welding and Joining, Harbin Institute of Technology, Harbin Institute of Technology, Harbin, 150001, China

10:45

(31-B1A-S03-25) The effect of glycerol on the prepreg-based manufacturing of oxide fiber composites (OFC)

PUCHAS, Georg[*1]; KRENKEL, Walter[1]
1. University of Bayreuth, Department of Ceramic Materials Engineering, Germany

11:00

(31-B1A-S03-26) Polymer-Derived Ceramic Nanocomposites for Applications at High Temperatures and in Harsh Environments (Invited)

IONESCU, Emanuel[*1]
1. TU Darmstadt, Institute for Materials Science, Germany

11:30

(31-B1A-S03-27) Mechanical and ablation properties of hot-pressed Si-B-C-N-Zr monoliths

ZHU, Qishuai[*1,2]; YANG, Zhihua[1,2,3]; JIA, Dechang[1,2,3]; ZHOU, Yu[1,2]
1. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, China
2. Key Laboratory of Advanced Structrual-Functional Integration Materials & Green Manufacturing Technology, Harbin Institute of Technology, China
3. State Key Laboratory of Advanced Welding and Joining, Harbin Institute of Technology, China

Oxide, carbide, boride, and nitride based ceramics and composites

Session Chairs: IONESCU, Emanuel, TU Darmstadt

13:30

(31-B1A-S03-29) Thermochemistry of Protective Coatings and Molten Silicate Debris (Invited)

COSTA, Gustavo[*1]; HARDER, Bryan[1]; KOWALSKI, Benjamin[1]; BANSAL, Narottam[1]; STOKES, Jamesa[1,2]; USHAKOV, Sergey[3]; NAVROTSKY, Alexandra[3]
1. NASA Glenn Research Center, USA
2. Department of Materials Science and Engineering, The Pennsylvania State University, USA
3. Peter A. Rock Thermochemistry Laboratory and NEAT ORU, University of California Davis, USA

14:00

(31-B1A-S03-30) The Thermal Stability of the Mechanically Alloyed 2SiB3CN Ceramic

ZHANG, Pengfei[*1]; HE, Huanju[1]; YU, Renhong[1]; XU, Panpan[1]; JIA, Dechang[2]; YANG, Zhihua[2]
1. Henan University of Science and Technology, China
2. Harbin Institute of Technology, China

14:15

(31-B1A-S03-31) Phase and microstructure evolution in the SiC materials with sintering additives of Yb_2O_3 and Al_2O_3 during high-temperature oxidation in air

HUANG, Bo[*1]; KAWASAKI, Kanjiro[1]; SHINODA, Fujio[1]; HINOKI, Tatsuya[1]
1. Institute of Advanced Energy, Kyoto University, Japan

14:30

(31-B1A-S03-32) Surface modification of B4C - SiC composite ceramics and the effects on sliding properties

KITA, Hideki[*1]; ZHANG, Wei[1]; YAMASHITA, Seiji[1]; NORIMATSU, Wataru[1]; KUMAZAWA, Takeshi[2]; OZEKI, Fumihito[2]; HYUGA, Hideki[3]
1. Nagoya University, Japan
2. Mino Ceramic CO., LTD, Japan
3. Advanced Industrial Science and Technology, Japan

14:45

(31-B1A-S03-33) $Y_3Al_5O_{12}$- α -Al_2O_3 composites with eutectic composition and fine-grained microstructure

PRNOVA, Anna[1,2]; VALUCHOVA, Jana[1,2]; PARCHOVIANSKY, Milan[2]; WISNIEWSKI, Wolfgang[1]; SVANCAREK, Peter[1,2]; KLEMENT, Robert[2]; HRIC, Lubomir[3]; GALUSEK, Dusan[*1,2]
1. Joint Glass Centre of the IIC SAS, Slovakia
2. Centre for Functional and Surface Functionalised Glass, Alexander Dubcek University of Trencin, Slovakia
3. RHP-Technology GmbH, Forschungs-und Technologiezentrum, Austria

15:00

(31-B1A-S03-34) A two-steps self-healing process and mechanical properties of Y2Ti2O7-Y2TiO5/TiC system

OKAWA, Ayahisa[*1]; NGUYEN, Thanh Son[2]; WIFF, Juan Paulo[3]; IWASAWA, Hirokazu[1]; NAKAYAMA, Tadachika[1]; DUNG, Do Thi Mai[1]; SUEMATSU, Hisayuki[1]; SUZUKI, Tsuneo[1]; GOTO, Takashi[3]; NIIHARA, Koichi[1]
1. Extreme Energy-Density Research Institute, Nagaoka University of Technology, Japan
2. Department of Creative Engineering, Kushiro National College of Technology, Japan
3. Department of Science of Technology Innovation, Nagaoka University of Technology, Japan

15:15

(31-B1A-S03-35) Enhancing toughness and strength of SiC ceramics with reduced graphene oxide by HP sintering

HUANG, Yihua[*1]
1. Shanghai Institute of Ceramics, CAS, China

15:30

(31-B1A-S03-36) Synthesis of conductive nano-sized Magnéli-phase Ti_4O_7 with a core@shell structure

TAKIMOTO, Daisuke[*1]; TODA, Yosuke[2]; TOMINAKA, Satoshi[3]; MOCHIZUKI, Dai[2]; SUGIMOTO, Wataru[1,2]
1. Research Initiative for Supra-Materials (RISM), Shinshu University, Japan
2. Faculty of Textile Science and Technology, Shinshu University, Japan
3. International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS)

■October 31 (Thu) (Room Theater) ■

06:Environmental Functional Materials

Photocatalyst, energy

Session Chairs: IRIE, Hiroshi, Universitiy of Yamanashi

8:30

(31-Theater-S06-12) Anaerobic alcohol conversion to carbonyl compounds over doped $SrTiO_3$ under visible light

ZHAO, Guixia[*1]; MUHLER, Martin[1]
1. Laboratory of Industrial Chemistry, Faculty of Chemistry and Biochemistry, Ruhr-Universität Bochum, Germany

8:45

(31-Theater-S06-13) Synthesis of (B/A)-TiO_2 polymorphic structure and their heterostructures with carbon dots for enhanced photocatalytic activities

KHAN, Sovann[*1]; SUZUKI, Norihiro[1]; NAKATA, Kazuya[2]; TERASHIMA, Chiaki[1]; FUJISHIMA, Akira[1]; KATSUMATA, Ken-ichi[1]
1. Photocatalysis International Research Center, Tokyo University of Science, JAPAN
2. Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology, JAPAN

9:00

(31-Theater-S06-14) Mechanism of photocatalytic dry reforming of methane on Rh/$SrTiO_3$

SHOJI, Shusaku[*1]; XIAOBO, Peng[2]; YAMAGUCHI, Akira[1]; WATANABE, Ryo[3]; FUKUHARA, Choji[3]; CHO, Yohei[1]; YAMAMOTO, Tomokazu[4]; MATSUMURA, Syo[4]; ISHII, Satoshi[2]; FUJITA, Takeshi[5]; ABE, Hideki[2]; MIYAUCHI, Masahiro[1]
1. Tokyo Institute of Technology, Japan
2. National Institute for Materials Science, Japan
3. Shizuoka University, Japan
4. Kyushu University, Japan
5. Kochi University of Technology, Japan

9:15

(31-Theater-S06-15) Visible-light-driven Dry Reforming of Methane Using Semiconductor Supported Catalyst

CHO, Yohei[*1]; SHOJI, Shusaku[1]; YAMAGUCHI, Akira[1]; HOSHINA, Takuya[1]; FUJITA, Takeshi[2]; ABE, Hideki[3]; MIYAUCHI, Masahiro[1]
1. Tokyo Institute of Technology, Japan
2. Kochi University of Technology, Japan
3. National Institute for Materials Science, Japan

Photocatalyst, general

Session Chairs: NISHIMOTO, Shunsuke, Okayama University

9:30

(31-Theater-S06-16) Photocatalytic Reduction of Cr(VI) using Au core-Cu_2O shell particle loaded TiO_2 (Rutile)

YANAGIDA, Sayaka[*1]; YAJIMA, Takumi[1]; TAKEI, Takahiro[1]; KUMADA, Nobuhiro[1]
1. Center for Crystal Science and Technology, University of Yamanashi, Japan

9:45

(31-Theater-S06-17) Post-illumination Activity from Photocatalytic "Memory" Effect for Environmental Applications

LI, Qi[*1,2]
1. College of Materials Science and Engineering, Southwest Jiaotong University, China
2. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

10:00

(31-Theater-S06-18) Preparation and decomposition activity of MnO_x-modified ($Ce_{0.73}$, $Bi_{0.27}$)$O_{2-\delta}$ on 2-naphthol in water in the dark or under visible light

OTSUKA, Nobutomo[*1]; ISOBE, Toshihiro[1]; MATSUSHITA, Sachiko[1]; NAKAJIMA, Akira[1]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan

(10:15) Coffee Break

Session Chairs: NISHIMOTO, Shunsuke, Okayama University

10:30

(31-Theater-S06-19) The role of the WO_x cluster on the photocatalytic activity of Ti-HAp

ISHISONE, Kana[*1]; ISOBE, Toshihiro[1]; MATSUSHITA, Sachiko[1]; WAKAMURA, Masato[2]; OSHIKIRI, Mitsutake[3]; NAKAJIMA, Akira[1]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan
2. Market Exploration Group, Fujitsu Laboratories Ltd., Japan
3. International Center for Materials Nanoarchitectonics, National Institute of Materials Science, Japan

Session Chairs: YANAGIDA, Sayaka, Universitiy of Yamanashi

10:45

(31-Theater-S06-20) Synthesis, characterization and photocatalytic activities of visible-light driven Dy-doped ZnO photocatalyst by tartaric acid-assisted combustion method

SA-NGUANPRANG, Surisa[*1]; PHURUANGRAT, Anukorn[1]
1. Department of Materials Science and Technology, Faculty of Science, Prince of Songkla University, Thailand

11:00

(31-Theater-S06-21) Effect on photocatalytic activity of applying transition metal addition and chemical treatment to titania nanotubes

KONDO, Yoshifumi[*1,2]; GOTO, Tomoyo[2]; CHO, Sung Hun[2]; NISHIDA, Hisataka[2]; SEKINO, Tohru[2]
1. Graduate School of Engineering, Osaka University, Japan
2. The Institute of Scientific and Industrial Research, Osaka University, Japan

11:15

(31-Theater-S06-22) Microplastic pollution remediation: photocatalytic degradation of LDPE and HDPE microplastics using N-TiO_2

LLORENTE GARCIA, Brenda Estefania[*1]; HERNANDEZ LOPEZ, Juan Manuel[1]; RUIZ VALDES, Juan Jacobo[1]; SILIGARDI, Cristina[2]; CEDILLO GONZALEZ, Erika Iveth[1]
1. Universidad Autónoma de Nuevo León, Mexico
2. Univesitá degli Studi di Modena e Reggio Emilia, Italia

Invited

Session Chairs: YANAGIDA, Sayaka, Universitiy of Yamanashi

11:30

(31-Theater-S06-23) Coprecipitation process of hydroxides preparation for efficient removal of toxic elements from wastewater (Invited)

TOKORO, Chiharu*1
1. Waseda University, Japan

Catalyst

Session Chairs: MIYAUCHI, Masahiro, Tokyo Institute of Technology

13:30

(31-Theater-S06-24) Bifunctional $CoFe_2O_4$/CNT nanohybrid electrocatalyst for oxygen reduction and oxygen evolution reaction

JEON, Jae Eun*1,2; PARK, Kyoung Ryeol1,2; LEE, Jaewoong2; OH, Nuri1; BANG, Junghwan2; MHIN, Sungwook2
1. Department of Materials Science and Engineering, Hanyang University, Korea
2. Korea Institute of Industrial Technology, Korea

13:45

(31-Theater-S06-25) Synthesis of rod-type cobalt-manganese oxide nanostructures as efficient electrocatalysts for oxygen evolution reaction

PARK, Kyoung Ryeol*1,2; JEON, Jae Eun1,2; LEE, Jaewoong2; OH, Nuri1; MHIN, Sungwook2
1. Hanyang University, Korea
2. Korea Institute of Industrial Technology, Korea

14:00

(31-Theater-S06-26) The effect of Cation Mixing on Activity and Durability toward Oxygen Evolution Reaction in $LiNiO_2$

YAMAGUCHI, Ryusei*1; UCHIYAMA, Tomoki1; YAMAMOTO, Kentaro1; MATSUNAGA, Toshiyuki1; NAKANISHI, Koji1,2; UCHIMOTO, Yoshiharu1
1. Kyoto University, Japan
2. University of Hyogo, Japan

14:15

(31-Theater-S06-27) High-Temperature NO Decomposition over Ceramics Catalysts - Alkaline Earth Containing Yttrium Oxide Based Composite Oxide Catalysts -

TAKENAKA, Keita*1; HAYASHI, Yuji1; HANEDA, Masaaki1
1. Nagoya Institute of Technology, Japan

Membrane

Session Chairs: FUJIMURA, Takuya, Shimane University

14:30

(31-Theater-S06-28) Preparation of micro-porous carbon membranes by glucose hydrothermal method

NAKAMURA, Yosuke*1; SANO, Shoya1; SHIMAMURA, Yuta1; MATSUSHITA, Sachiko1; NAKAJIMA, Akira1; ISOBE, Toshihiro1
1. Tokyo Institute of Technology, Japan

Antibacterial

Session Chairs: FUJIMURA, Takuya, Shimane University

14:45

(31-Theater-S06-29) Preparation of hydrophobic $La_2Mo_2O_9$ ceramics with antibacterial and antiviral properties

MATSUMOTO, Takumi*1; NAGAI, Takeshi2; SUNADA, Kayano2; ISOBE, Toshihiro1; MATSUSHITA, Sachiko1; ISHIGURO, Hitoshi2; NAKAJIMA, Akira1
1. Department of Materials Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan
2. Antibacterial and Antiviral Research Group, Kanagawa Institute of Industrial Science and Technology, Japan

(15:00) Coffee Break

Sensor

Session Chairs: OGAWA, Makoto, Vidyasirimedhi Institute of Science and Technology

15:15

(31-Theater-S06-30) CdO-activated Sn on the sensing propertie of ZnO nanoparticles for ethanol

JINXIAO, Wang1; JUN, Yang1; JIANFENG, Yang*1
1. State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China
2. School of Metallurgical Engineering, Xi'an University of Architecture and Technology, China

15:30

(31-Theater-S06-31) Highly Water Durable Ammonia Gas Sensor Based on Aluminum Ion Conducting Solid Electrolyte with Ammonium Rare Earth Niobate

TAMURA, Shinji*1; YAMASHITA, Ryo1; SHIBATA, Makiko2; IMANAKA, Nobuhito1
1. Osaka University, Japan
2. Yazaki Energy System Corporation, Japan

15:45

(31-Theater-S06-32) CO sensing properties of lanthanum-doped magnesium ferrite nanopowder

OBATA, Kenji*1; MATSUSHIMA, Shigenori1
1. National Institute of Technology (KOSEN), Kitakyushu College, Japan

Recycle

Session Chairs: NAKAJIMA, Akira, Tokyo Institute of Technology

16:00

(31-Theater-S06-33) Study of Sugarcane Bagasse Ash (SCBA) as Source Of SiO_2 for the Synthesis of Vitreous Materials

PEREZ-CASAS, Jesus A.1; ZALDIVAR-CADENA, Antonio A.2; RUIZ-VALDES, Juan J.1,3; LOPEZ-PEREZ, David C.4; SANCHEZ-VAZQUEZ, Astrid I.*1
1. Universidad Autónoma de Nuevo León, Facultad de Ciencias Químicas, Laboratorio de Materiales III, México.
2. Universidad Autónoma de Nuevo León, Facultad de Ingeniería Civil, Laboratorio del CA Materiales Alternativos, México
3. Universidad Autónoma de Nuevo León, Facultad de Ciencias Químicas, Laboratorio de Pruebas e Investigación en Cerámica, México.
4. Universidad Autónoma de Nuevo León, Facultad de Ingeniería Civil, Departamento de Hidráulica, México

Process

Session Chairs: NAKAJIMA, Akira, Tokyo Institute of Technology

16:15

(31-Theater-S06-34) Structural Investigation of 1T and 2H Phase of Bulk MoS_2 Prepared Using Hydrothermal Method

PAN, Zhigang*1; YAN, Weitao1; SHAN, Songting1; TAO, Yaqiu1; SHEN, Xiaodong1
1. College of Materials Science and Engineering, Nanjing Tech University, P. R. China.

16:30

(31-Theater-S06-35) Application of extractive fermentation on the recuperation of exopolysaccharide from *Rhodotorula mucilaginosa* UANL-001L

MEDINA-RAMIREZ, Carlo Franco1,2; MORONES-RAMIREZ, Jose Ruben1,2; GOMEZ-LOREDO, Alma*1,2
1. Universidad Autónoma de Nuevo León, Facultad de Ciencias Químicas, Mexico
2. Centro de Investigacion en Biotecnologia y Nanotoxicologia, Facultad de Ciencias Quimicas, Universidad Autonoma de Nuevo Leon. Parque de Investigacion e Innovacion Tecnologica, Mexico

■October 31 (Thu) (Room A1) ■

07:Dielectric, Piezoelectric, and Ferroelectric Materials: Advances for Emerging Applications

Lead-Free II Tungsten bronze

Session Chairs: AOYAGI, Rintaro, AIST

8:30

(31-A1-S07-37) Crossover from Normal Ferroelectric to Relaxor in Filled Tungsten Bronze Ceramics (Invited)

CHEN, Xiang Ming[*1]; ZHU, Xiao Li[1]; FENG, Wen Bin[1]; YANG, Zi Jin[1]; LIU, Xiao Qiang[1]
1. School of Materials Science and Engineering, Zhejiang University, China

9:00

(31-A1-S07-38) Electronic structure and optical properties of La-doped KSr2Nb5O15: A first-principles investigation

CHEN, Qian[*1]; XU, Jie[1]; CAO, Shuyao[1]; GUO, Yiting[1]; GAO, Feng[1]; CHENG, Guanghua[2]
1. State Key Laboratory of Solidification Processing, MIIT Key Laboratory of Radiation Detection Materials and Devices, USI Institute of Intelligence Materials and Structure, NPU-QMUL Joint Research Institute of Advanced Materials and Structure, School of Materials Science and Engineering, Northwestern Polytechnical University, P.R. China
2. State Key Laboratory of Transient Optics and Photonics, Xi' an Institute of Optics and Precision Mechanics of Chinese Academy of Sciences, P.R. China

Lead-Free III Single crystals and composite

Session Chairs: TERANISHI, Takashi, Okayama University

9:30

(31-A1-S07-40) Fabrication of dense $(K_{0.5}Na_{0.5})NbO_3$ single crystals by solid-state crystal growth method

FUJII, Ichiro[*1]; UENO, Shintaro[1]; WADA, Satoshi[1]
1. University of Yamanashi, Japan

9:45

(31-A1-S07-41) Enhanced Piezoelectric and Dielectric Responses of Mesocrystalline BaTiO3/Bi0.5K0.5TiO3 Nanocomposites

ZHAO, Weixing[*1,2]; ZHANG, Wenxiong[1]; YU, Han[1]; YAO, Fangyi[1]; LI, Sen[1]; FENG, Qi[1]
1. Department of Advanced Materials Science, Faculty of Engineering and Design, Kagawa University, Japan
2. Faculty of Chemistry and Chemical Engineering, Baoji University of Arts and Science, Japan

10:00

(31-A1-S07-42) Electronic Structure of Ferroelectric BaTiO3/Bi0.5Na0.5TiO3 Nanocomposite by Soft X-ray Absorption Spectroscopy

ZHANG, Wenxiong[*1]; FENG, Qi[2]; HOSONO, Eiji[3,4]; ASAKURA, Daisuke[3,4]; MIYAWAKI, Jun[1]; HARADA, Yoshihisa[1,4]
1. Institute for Solid State Physics, The University of Tokyo, Japan
2. Department of Advanced Materials Science, Kagawa University, Japan.
3. Research Institute for Energy Conservation, National Institute of Advanced Industrial Science and Technology, Japan
4. AIST-UTokyo Advanced Operando-Measurement Technology Open Innovation Laboratory (OPERANDO-OIL), National Institute of Advanced Industrial Science and Technology (AIST), Japan.

(10:15) Coffee Break

Lead-Free III Titanate piezo-ceramics

Session Chairs: KAKIMOTO, Ken-ichi, Nagoya Institute of Technology

10:30

(31-A1-S07-43) Structural Studies of Lead-Free Piezoelectric (1-x)$Ba(Zr_{0.2}Ti_{0.8})O_3$-x$(Ba_{0.7}Ca_{0.3})TiO_3$ Using Total Scattering and Diffraction to Understand the Mechanisms of Electromechanical Strain (Invited)

MANJON-SANZ, Alicia[1,2]; CULBERTSON, Charles[1]; HOU, Dong[3,4]; JONES, Jacob[4]; DOLGOS, Michelle[*1,5]
1. Department of Chemistry, Oregon State University, USA
2. CELLS-ALBA Synchrotron Light Facility, Cerdanyola del Valles, Spain
3. Department of Materials Science and Engineering, North Carolina State University, USA
4. Department of Materials Science and Engineering, Faculty of Natural Sciences, Norwegian University of Science and Technology, Norway
5. Department of Chemistry, University of Calgary, Canada

11:00

(31-A1-S07-44) Fabrication of Lead-Free Nb-Doped $BaTiO_3$-$(Bi_{1/2}K_{1/2})$ TiO_3 PTCR Ceramics for High Temperature

TAKEUCHI, Nobuyuki[*1]; MIYAGAWA, Takayuki[1]
1. Kyoto Institute of Technology, Japan

Session Chairs: TSUKADA, Shinya, Shimane University

11:15

(31-A1-S07-45) Doping Effects and Aging Behavior of Piezoelectric Properties of $Ba(Zr,Ti)O_3$-$(Ba,Ca)TiO_3$-based Lead-free Piezoelectric Ceramics

NAGATA, Hajime[*1]; TOMINAGA, Takuo[1]; TAKAGI, Yuka[1]; TAKENAKA, Tadashi[1]
1. Tokyo University of Science, Japan

11:30

(31-A1-S07-46) Giant Electrostrictive Effect In Lead-Free Barium Titanate-Based Ceramics Via A-Site Ion-Pairs Engineering

HUANG, Yanli[*1]; ZHAO, Chunlin[1]; YIN, Jie[1]; LV, Xiang[1]; WU, Jiagang[1]
1. Sichuan University, China

11:45

(31-A1-S07-47) $(Bi_{1/2}K_{1/2})TiO_3$–$SrTiO_3$ Solid Solutions for High-Temperature Capacitor Applications

HAGIWARA, Manabu[*1]; SHIGA, Minami[1]; FUJIHARA, Shinobu[1]
1. Keio University, Japan

Nitride Piezoelectrics

Session Chairs: DOLGOS, Michelle, Oregon State University

13:30

(31-A1-S07-48) Search and development of piezoelectric nitride materials (Invited)

YAMADA, Hiroshi[*1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

14:00

(31-A1-S07-49) Polarization inverted ScAlN films and new high k_t^2 YbAlN films for BAW device applications (Invited)

YANAGITANI, Takahiko[*1,2,3]
1. Waseda University, Japan
2. ZAIKEN, Japan
3. JST PRESTO, Japan

Session Chairs: YAMADA, Hiroshi, AIST

14:30

(31-A1-S07-50) Improvement of crystalline orientation and k_t^2 of ScAlN thin films by suppression of negative ions generation from sputtering target

KIHARA, Rui[*1,2]; TAKAYANAGI, Shinji[4]; YANAGITANI, Takahiko[1,2,3]
1. Department of Electrical Engineering and Bioscience, Waseda University, Japan
2. ZAIKEN, Waseda University, Japan
3. JST-PRESTO, Japan Science and Technology Agency, Japan
4. Doshisha University, Japan

14:45

(31-A1-S07-51) Measurement of lattice strain change in ScAlN piezoelectric films by XRD for k_t^2 estimation without removing substrate

SOTOME, Takumi[*1,2]; YANAGITANI, Takahiko[1,2,3]
1. Graduate School of Advanced Science and Engineering, Waseda

University, Japan
2. ZAIKEN, Japan
3. JST-PRESTO, Japan

15:00

(31-A1-S07-52) BAW type transformer with ScAlN multilayer for rectifying antenna

KINOSHITA, Sarina[*1,2]; YANAGITANI, Takahiko[1,2,3]
1. Waseda University, Japan
2. ZAIKEN, Waseda University, Japan
3. JST-PREST, Japan

(15:15) Coffee Break

Lead-Free IV Niobate piezo-ceramics

Session Chairs: NAGATA, Hajime, Tokyo University of Science

15:30

(31-A1-S07-53) Characterization of Fatigued Alkali Niobate Piezoceramics (Invited)

KAKIMOTO, Ken-ichi[*1,2]; MAEDA, Shinsaku[1]; ITO, Yuichiro[1]
1. Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan
2. Frontier Research Institute for Materials Science, Nagoya Institute of Technology, Japan

16:00

(31-A1-S07-54) Comprehensive investigation of structural and electrical properties of KNNS-xBC-BKZ-Fe2O3 ceramics

XIE, Lixu[*1]; XING, Jie[1]; TAN, Zhi[1]; CHENG, Yuan[1]; CHEN, Qiang[1]; WU, Jiagang[1]; ZHANG, Wen[1]; XIAO, Dingquan[1]; ZHU, Jianguo[1]
1. Sichuan University, China

Session Chairs: FUJII, Ichiro, University of Yamanashi

16:15

(31-A1-S07-55) Eco-friendly Highly Sensitive Transducers Based on KNN-based Piezoelectric Ceramics with High Piezoelectric Properties

JIANG, Laiming[1]; XING, Jie[1]; WU, Jiagang[1]; ZHOU, Qifa[2]; ZHU, Jianguo[*1]
1. College of Materials Science and Engineering, Sichuan University, China
2. Roski Eye Institute, Keck School of Medicine, University of Southern California, USA

16:30

(31-A1-S07-56) $BiFe_{0.9}Co_{0.1}O_3$ doped KNN-based lead-free ceramics with good electrical performances and temperature stability

XING, Jie[*1]; TAN, Zhi[1]; WU, Bo[2]; JIANG, Laiming[1]; XIE, Lixu[1]; CHENG, Yuan[1]; WU, Jiagang[1]; XIAO, Dingquan[1]; ZHU, Jianguo[1]
1. Sichuan University, China
2. Chengdu University of Information Technology, China

■October 31 (Thu) (Room B3) ■

09:Science and Applications of Amorphous Materials

Mechanical properties

Session Chairs: KITAMURA, Naoyuki, AIST

9:00

(31-B3-S09-21) The Fracture Toughness of Inorganic Glasses: Experimental methods and composition dependence (Invited)

ROUXEL, Tanguy[*1]; CELARIE, Fabrice[1]; TO, Theany[1]; LACONDEMINE, Tanguy[1]; GUEGUEN, Yann[1]; HOUIZOT, Patrick[1]
1. University of Rennes 1, France

9:30

(31-B3-S09-22) Point stress evaluation and structural investigation in chemically strengthened glass by micro-Raman spectroscopy

TERAKADO, Nobuaki[*1]; SASAKI, Ryusei[1]; EBUKURO, Shingo[1]; TAKAHASHI, Yoshihiro[1]; FUJIWARA, Takumi[1]; ORIHARA, Shuji[2]; ORIHARA, Yoshio[2]
1. Tohoku University, Japan
2. Orihara Industrial Co., Ltd., Japan

Session Chairs: BENINO, Yasuhiko, Okayama University

9:45

(31-B3-S09-23) Variation of Structural and Chemical Strengthening Properties of Sodium Aluminosilicate Glasses by P_2O_5 and B_2O_3 Addition

PARK, Kyeong Dae[*1]; HAN, Karam[1]; CHOI, Yong Gyu[2]; CHUNG, Woon Jin[1]
1. Institute for Rare Metals and Div. of Advanced Materials Eng., Kongju National Univ, Republic of Korea
2. Dept. of Materials Sci. and Eng., Korea Aerospace Univ., Republic of Korea

10:00

(31-B3-S09-24) Analysis of fracture mechanism in a drop event for smartphone

KANEHARA, Kazuki[*1]; IMAKITA, Kenji[1]; KOBAYASHI, Yusuke[1]; KOIKE, Akio[1]
1. AGC Co. Ltd., Japan

10:15

(31-B3-S09-25) High technology of in-line continuous Heat Soak Test to avoid spontaneous breakage

SAKAI, Chihiro[*1]
1. Research and Development, NIPPON SHEET GLASS CO., LTD., Japan

(10:30) Coffee Break

Session Chairs: KISHI, Tetsuo, Tokyo Institute of Technology

10:45

(31-B3-S09-26) Stress Mapping Glass-to-Metal Seals using Photoluminescence Spectroscopy

STRONG, Kevin Thomas[*1]; MESEROLE, Steve[2]; DIEBOLD, Thomas[1]; PARIHAR, Shailendra[1]; DAI, Steve[1]
1. Material Mechanics and Tribology Group, Sandia National Laboratories, USA
2. Applied Optical/Plasma Science Group, Sandia National Laboratories, USA

11:00

(31-B3-S09-27) Determination of Interfacial Properties in Glass to Metal seals using Pin Push-out Test

PARIHAR, Shailendra[*1]; STRONG, Kevin[1]; DIEBOLD, Thomas[1]
1. Sandia National Laboratories, Japan

11:15

(31-B3-S09-28) Estimating the effects of glass composition on the stress-relaxation of ion-exchanged, soda-lime glass below the glass transition temperature

SUN, Huan[*1]; DUGNANI, Roberto[1]
1. University of Michigan - Shanghai Jiao Tong University Joint Institute, China

Session Chairs: MATSUOKA, Jun, The University of Shiga Prefecture

11:30

(31-B3-S09-29) Molecular dynamics simulation of stress relaxation around glass transition temperature

TANIGUCHI, Taketoshi[*1]; KATO, Yasumasa[2]
1. Innovative Technology Research Center, AGC Inc., Japan
2. Production Technology Division, AGC Inc., Japan

11:45

(31-B3-S09-30) Viscoelastic study of alkali and alkaline earth alumino-phosphate glasses

KITAMURA, Naoyuki[*1]; HAYASHIDO, Takahiko[2]; MATSUSHITA, Nana[2]; FUKUMI, Kohei[1]; UCHIYAMA, Hiroaki[2]; KOZUKA, Hiromitu[2]
1. National Institute of Advanced Industrial Science and

Technology, Japan
2. Kansai University, Japan

Structure II

Session Chairs: ROUXEL, Tanguy, University of Rennes 1

13:30

(31-B3-S09-31) Local Structure and Infrared Transmission of Mixed-Chalcogen Ge-Sb-S-Se Glasses (Keynote)

SHIN, Sang Yeol[1]; LEE, Jun Ho[1]; MASAI, Hirokazu[2]; INA, Toshiaki[3]; CHOI, Yong Gyu[*1]
1. Korea Aerospace University, South of Korea
2. AIST, Japan
3. Japan Synchrotron Radiation Research Institute, Japan

14:00

(31-B3-S09-32) Characterization of diffusion space and polarizability of Li_2S-P_2S_5 solid state electrolytes

OHKUBO, Takahiro[*1]; TSUCHIDA, Eiji[2]
1. Graduate School of Engineering, Chiba University, Japan
2. Research Center for Computational Design of Advanced Functional Materials, National Institute of Advanced Industrial Science and Technology, Japan

14:15

(31-B3-S09-33) Topological and Energetical Aspects of Ternary Ge-Sb-Se Glasses Screened for Use as Molded Infrared-Transmitting Lenses

KIM, Hyun[*1]; LEE, Jun Ho[1]; LEE, Woo Hyung[1]; SHIN, Sang Yeol[1]; LEE, Ji In[1]; KO, Se Young[1]; CHOI, Yong Gyu[1]
1. Department of Materials Science and Engineering, Korea Aerospace University, Goyang 10540, Korea

Session Chairs: CHOI, Yong Gyu, Korea Aerospace University

14:30

(31-B3-S09-34) Improved Thermal Stability of TiN Nanocylinder Arrays by Dielectric Protection Layers

GOYA, Shinya[*1]; MURAI, Shunsuke[1]; TANAKA, Katsuhisa[1]
1. Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Japan

14:45

(31-B3-S09-35) Thermal Conduction of Phosphate and Other Oxide Glasses in Relation to their Network Structure

MATSUOKA, Jun[*1]; TANAKA, Maki[1]; YAMADA, Akihiro[1]; YOSHIDA, Satoshi[1]
1. The University of Shiga Prefecture, Japan

15:00

(31-B3-S09-36) Precise Determination of Medium Range Atomic Ordering in Glasses Using 4-Dimensional Scanning Transmission Electron Microscopy

IM, Soohyun[1]; CALDERON, Gabriel[1]; ABBASI, Mehrdad[1]; HWANG, Jinwoo[*1]
1. Department of Materials Science and Engineering, The Ohio State University, USA

(15:15) Coffee Break

Session Chairs: MASAI, Hirokazu, AIST

15:30

(31-B3-S09-37) Influence of atomic structure on thermal and chemical properties in vanadate glass (Invited)

AOYAGI, Takuya[*1,2]; KOHARA, Shinji[3,4,5,6]; NAITO, Takashi[1]; ONODERA, Yohei[7,4]; KODAMA, Motomune[1]; ONODERA, Taigo[1]; TAKAMATSU, Daiko[1]; TAHARA, Shuta[4,8]; SAKATA, Osami[3]; MIYAKE, Tatsuya[1]; SUZUYA, Kentaro[9]; OHARA, Koji[6]; USUKI, Takeshi[10]; HAYASHI, Yamato[2]; TAKIZAWA, Hirotsugu[2]
1. Hitachi Research Laboratory, Hitachi Ltd., Japan
2. Tohoku University, Japan
3. Light/Quantum Beam Field, Research Center for Advanced Measurement and Characterization, National Institute for Material Science (NIMS), Japan
4. Center for Materials Research by Information Integration (CMI2) Research and Services Division of Materials Data and Integrated System (MaDIS), NIMS, Japan
5. PRESTO, Japan Science and Technology Agency, Japan
6. Research and Utilization Division, Japan Synchrotron Radiation Research Institute/SPring-8, Japan
7. Institute for Integrated Radiation and Nuclear Science, Kyoto University, Japan
8. University of the Ryukyus, Japan
9. Japan Atomic Energy Agency/J-PARC, Japan
10. Yamagata University, Japan

16:00

(31-B3-S09-38) Coloration and Antibacterial Activity by Silver Species Ion-Exchanged via Position-Selective Non-Dipping Process in Sodium-Containing Silicate Glasses

LEE, Ji In[*1]; KIM, Hyun[1]; LEE, Woo Hyung[1]; KO, Se Young[1]; CHOI, Yong Gyu[1]
1. Department of Materials Science and Engineering, Korea Aerospace University, Korea

Session Chairs: AOYAGI, Takuya, Hitachi Research Laboratory

16:15

(31-B3-S09-39) Effect of bond valence sum constraints on the structural modeling of lead borate glass

NAGAO, Masaaki[*1]; SAKIDA, Shinichi[1]; BENINO, Yasuhiko[1]; NANBA, Tokuro[1]; MUKUNOKI, Atsushi[2]; CHIBA, Tamotsu[2]; KIKUCHI, Takahiro[2]; SAKURAGI, Tomofumi[3]
1. Okayama University, Japan
2. JGC Corporation, Japan
3. Radioactive Waste Management Funding and Research Center, Japan

16:30

(31-B3-S09-40) Structure of silicate glass revisited: Reconciling the mixed alkali effect

ONODERA, Yohei[*1,2]; TAKIMOTO, Yasuyuki[3]; HIJIYA, Hiroyuki[4]; TANIGUCHI, Taketoshi[3]; URATA, Shingo[3]; INABA, Seiji[4]; FUJITA, Sanae[4]; OBAYASHI, Ippei[5,6]; HIRAOKA, Yasuaki[7,5,6,2]; KOHARA, Shinji[8,2,9,10]
1. Institute for Integrated Radiation and Nuclear Science, Kyoto University, Japan
2. Center for Materials research by Information Integration (CMI2), Research and Services Division of Materials Data and Integrated System (MaDIS), National Institute for Materials Science (NIMS), Japan
3. Innovative Technology Research Center, AGC Inc., Japan
4. New Product R & D Center, AGC Inc., Japan
5. Center for Advanced Intelligence Project, RIKEN, Japan
6. CREST, Japan Science and Technology Agency, Japan
7. Kyoto University Institute for Advanced Study, WPI-ASHBi, Kyoto University, Japan
8. Research Center for Advanced Measurement and Characterization, NIMS, Japan
9. PREST, Japan Science and Technology Agency, Japan
10. Research & Utilization Division, Japan Synchrotron Radiation Research Institute (JASRI, SPring-8), Japan

16:45

(31-B3-S09-41) Examination of Phosphate Glasses by Combination of Different Analysis Methods

MASAI, Hirokazu[*1]; KOHARA, Shinji[2]; ONODERA, Yohei[3]; KOREEDA, Akitoshi[4]; OHKUBO, Takahiro[5]
1. National Institute of Advanced Industrial Science and Technology, Japan
2. National Institute for Materials Science, Japan
3. Kyoto University, Japan
4. Ritsumeikan University, Japan
5. Chiba University, Japan

■October 31 (Thu) (Room T1) ■

10:Bioceramics and Bioinspired Materials

Calcium phosphate

Session Chairs: YAMADA, Shinya, Olympus Terumo Biomaterials Corp

8:30

(31-T1-S10-23) Hydroxyapatite mesocrystal formation by hydrothermal treatment of octacalcium phosphate with incorporated dicarboxylate ions

YOKOI, Taishi[*1]; GOTO, Tomoyo[2]; NAKAMURA, Jin[3]; OHTSUKI, Chikara[3]; KATO, Takeharu[4]; TAKAHASHI, Seiji[1]
1. Materials Research and Development Laboratory, Japan Fine Ceramics Center, Japan
2. The Institute of Scientific and Industrial Research, Osaka University, Japan
3. Graduate School of Engineering, Nagoya University, Japan
4. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

8:45

(31-T1-S10-24) Local Environment of Zn^{2+} on Surface of Hydroxyapatite

MURATA, Hidenobu[*1]; NAKAHIRA, Atsushi[1]
1. Department of Materials Science, Osaka Prefecture University, Japan

Session Chairs: CHEN, Min-Hua, Chung Yuan Christian University

9:00

(31-T1-S10-25) Nano-bio ceramic composite prepared by low-temperature sintering

HASSAN, Muhmood ul[*1]; RAZA, Ahmad[1]; CHAN, Yoo Sung[2]; RYU, Ho Jin[1,2]
1. Dept. of Nuclear and Quantum Engineering, Korea Advanced Institute of Science and Technology, Daejeon, S. Korea
2. Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, S. Korea

9:15

(31-T1-S10-26) Porous Carbonate Apatite Bone Substitute

ISHIKAWA, Kunio[*1]; HAYASHI, Koichiro[1]; TSUCHIYA, Akira[1]; KISHIDA, Ryo[1]
1. Kyushu University, Japan

Session Chairs: ISHIKAWA, Kunio, Kyushu University

9:30

(31-T1-S10-27) Formation Processes of Carbonated Hydroxyapatite in Aqueous Solution Systems

HAGIWARA, Yuki[*1]; TAKASAKI, Mihiro[1]; OAKI, Yuya[1]; IMAI, Hiroaki[1]
1. Keio University, Japan

9:45

(31-T1-S10-28) Fabrication of boron-containing apatite ceramics with well-controlled chemical composition by reaction sintering method and their cellular response to immunocytes

NAKAGAWA, Daiki[*1]; KAGAMI, Sanae[1]; NAGAI, Shigenori[2]; AIZAWA, Mamoru[1]
1. Meiji University, Japan
2. Tokyo Medical and Dental University, Japan

10:00

(31-T1-S10-29) Additive Manufacturing of Bisphosphonate Loaded Calcium Phosphate Scaffolds for Bone Tissue Engineering

RAJA, Naren[*1]; CHOI, Yeong-jin[1]; PARK, Honghyun[1]; YUN, Hui-suk[1,2]
1. Korea Institute of Materials Science (KIMS), Korea
2. Korea University of Science and Technology (UST), Korea

Session Chairs: YOSHIOKA, Tomohiko, Okayama University

10:15

(31-T1-S10-30) Preparation of Bismuth Oxide-based Composite Powders and Their Application as Dental Filling and Radiopacifying Materials (Invited)

CHEN, May-Show[1,2,3]; CHANG, Pei-Jung[3]; CHEN, Chin-Yi[4]; LIN, Chung-Kwei[*3,5]
1. Department of Dentistry, Taipei Medical University Hospital, Taiwan
2. School of Dentistry, College of Oral Medicine, Taipei Medical University, Taiwan
3. Research Center of Digital Oral Science and Technology, College of Oral Medicine, Taipei Medical University, Taiwan
4. Department of Materials Science and Engineering, Feng Chia University, Taiwan
5. School of Dental Technology, College of Oral Medicine, Taipei Medical University, Taiwan

(10:45) Coffee Break

Particle

Session Chairs: RAJA, Naren, Korea Institute of Materials Science

11:00

(31-T1-S10-31) Micro-sized bio-ceramic microsphere as functional bone substitute

PARK, Honghyun[*1]; BYUN, Kyubin[1,2]; YUN, Hui-suk[1,2]
1. Department of Advanced Biomaterials Research, Korea Institute of Materials Science, Korea
2. Advanced Materials Engineering, University of Science & Technology (UST), Korea

11:15

(31-T1-S10-32) Structural analysis of magnetic calcium phosphate-based submicrospheres fabricated by laser-assisted one-pot process

NAKAMURA, Maki[*1]; OYANE, Ayako[1]
1. Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:30

(31-T1-S10-33) Synthesis, characterization and antibacterial activity of Ag-Zn co-doped beta-tricalcium phosphate prepared by spray pyrolysis

CHOU, Yu-Jen[*1]; NINGSIHA, Henni Setia[2]; SHIH, Shao-Ju[2]
1. Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taiwan
2. Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan

Session Chairs: OYANE, Ayako, AIST

11:45

(31-T1-S10-34) Ceramic-based nanoparticles for use as radiosensitizers in cancer treatment

CHEN, Min-Hua[*1]; LIN, Feng-Huei[2]
1. Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan
2. Department of Biomedical Engineering, National Taiwan University, Taiwan

13:30

(31-T1-S10-35) Rapid Bone Formation Assisted by High-Purity Calcite Granules - Effect of Porosity -

UNUMA, Hidero[*1,2]; FURUSAWA, Toshitake[1,2]; UMEMOTO, Shota[3]
1. Yamagata University, Japan
2. Tohoku Oral Implant Association, Japan
3. Shiraishi Central Laboratories Co., Ltd., Japan

13:45

(31-T1-S10-36) Fabrication of cell laden organic/inorganic hybrid bead with phytoestrogen for osteoporotic bone tissue regeneration

KIM, Jueun[*1,2]; PARK, Honghyun[2]; CHOI, Yeong-Jin[2]; YUN, Hui-suk[1,2]
1. Korea University of Science and Technology (UST), Daejeon, south Korea
2. Korea Institute of Materials Science, Changwon, South Korea

Session Chairs: UNUMA, Hidero, Yamagata University

14:00

(31-T1-S10-37) Biomimetic Self-assembly Synthesis of Highly Regulated Single-nm Thick Layered Oxides and their Physicochemical Properties (Invited)

OHTAKI, Michitaka[*1,2]
1. Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. Transdisciplinary Research and Education Center for Green Technologies, Kyushu University, Japan

(14:30) Coffee Break

Titanium implant

Session Chairs: SHIROSAKI, Yuki, Kyushu Institute of Technology

14:45

(31-T1-S10-38) Introduction of Inorganic Ion to Titanium Substrate Decorated with Layered Phosphate Compound

NAKAMURA, Jin[*1]; ENDO, Kanta[1]; KANAOKA, Hiroaki[1]; SUGAWARA-NARUTAKI, Ayae[1]; OHTSUKI, Chikara[1]
1. Graduate School of Engineering, Nagoya University, Japan

15:00

(31-T1-S10-39) Highly anti-thrombogenic surface preparation by formation of titania nanotubes followed by polarization

MURALIDAHAR, Jyorthana[1,2]; SAKTHIVEL, Kabilan[1,2]; SRIDHARAN, Madanagurusamy[2]; NAGAI, Akiko[3]; YAMASHITA, Kimihiro[3]; KIKUCHI, Masanori[*1]
1. National Institute for Materials Science, Japan
2. SASTRA University, India
3. Tokyo Medical and Dental University, Japan

15:15

(31-T1-S10-40) Cell culture tests of hydroxyapatite/collagen bone-like nanocomposite coated on Ti by modified electrophoretic deposition method

IWANAMI-KADOWAKI, Kaori[*1,2]; UCHIKOSHI, Tetsuo[3]; UEZONO, Masayoshi[1]; KIKUCHI, Masanori[2]; MORIYAMA, Keiji[1]
1. Department of Maxillofacial Orthognathics, Graduate School of Tokyo Medical and Dental University, Japan
2. Bioceramics Group, National Institute for Materials Science, Japan
3. Materials Processing Unit, National Institute for Materials Science, Japan

Glass

Session Chairs: CHOU, Yu-Jen, National Taiwan University of Science and Technology

15:30

(31-T1-S10-41) Preparation of bioactive glass/poly(lactic acid) composite fibermats for controlling bone quantity and quality

LEE, Sungho[*1,2]; NAGATA, Fukue[1]; KASUGA, Toshihiro[3]; NAKANO, Takayoshi[2]
1. National Institute of Advanced Industrial Science and Technology, Japan
2. Division of Materials and Manufacturing Science, Osaka University, Japan
3. Division of Advanced Ceramics, Nagoya Institute of Technology, Japan

15:45

(31-T1-S10-42) Bioactive Silicon Oxycarbide Glasses with Highly Connected Networks

IONESCU, Emanuel[*1]
1. TU Darmstadt, Institute for Materials Science, Germany

Nanopattern

Session Chairs: NAKAMURA, Jin, Nagoya University

16:00

(31-T1-S10-44) Nanostructured Diamond for Medical Applications

NARAYAN, Roger[*1]
1. North Carolina State University, USA

Coating

Session Chairs: LEE, Sungho, AIST

16:15

(31-T1-S10-45) Laser-assisted pseudo-biomineralization on human dentin for tooth surface coating

OYANE, Ayako[*1]; SAKAMAKI, Ikuko[1]; NAKAMURA, Maki[1]; KOGA, Kenji[1]; SHITOMI, Kanako[2]; MAYUMI, Kayoko[2]; MIYAJI, Hirofumi[2]
1. Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Faculty of Dental Medicine, Hokkaido University, Japan

16:30

(31-T1-S10-46) The Application of Pulse Electrolysis to the Sol-Gel Deposition of Bioactive Gel Films

YOSHIOKA, Tomohiko[*1]; HAYASHI, Takuya[2]; HAYAKAWA, Satoshi[1]
1. Graduate School of Interdisciplinary Science and Engineering in Health Systems, Okayama University, Japan
2. Faculty of Engineering, Okayama University, Japan

■October 31 (Thu) (Room B1C) ■

13:Engineering Ceramics: Processing and Characterization

Fracture and deformation

Session Chairs: WAKAI, Fumihiro, Tokyo Instititute of Technology

8:30

(31-B1C-S13-22) Dynamics of Dislocation, Fracture and Twin Formation in Alumina (Invited)

IKUHARA, Yuichi[*1,2,3]
1. Institute of Engineering Innovation, The University of Tokyo, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan
3. Advanced Institute for Materials Research, Tohoku University, Japan

9:00

(31-B1C-S13-23) Mechanical behavior of multiscale textured alumina obtained by Direct Ink Writing

M'BARKI, Amin[1]; LACONDEMINE, Tanguy[*1]; STEVENSON, Adam[1]; RICHAUD, Stephane[1]; MAIRE, Eric[2]; ADRIEN, Jerome[2]; FRANCHIN, Girogia[3]; COLOMBO, Paolo[3]
1. LSFC Laboratoire de Synthèse et de Fonctionnalisation des Céramiques, UMR 3080 CNRS/Saint-Gobain CREE, Saint-Gobain Research Provence, France
2. MATEIS Matériaux : Ingénierie et Science, INSA Lyon, UMR CNRS 5510, France
3. CMBM Centre for Mechanics of Biological Materials, University of Padova, Italia

9:15

(31-B1C-S13-24) Development of the BOF tap hole sleeve and improvement of BOF operational ratio

SATO, Takafumi[*1]; MATSUI, Shunsuke[1]; TSUTSUI, Yasushi[1]; TANI, Kohei[2]; TOMITA, Daisuke[2]; ITO, Hirotaka[2]
1. Nippon Steel Corporation, Japan
2. Krosaki Harima Corporation, Japan

9:30

(31-B1C-S13-25) Exploring the influence of talc on the water absorption and pyroplastic deformation of alumina strengthened porcelain

HAO, Dong[*1]; AKATSU, Takashi[1,2]; KAMOCHI, Nobuaki[3]
1. Ceramic Research Center, Saga University, Japan
2. Faculty of Art and Regional Design, Saga University, Japan
3. Saga Ceramics Research Laboratory, Japan

Session Chairs: YOSHIDA, Katsumi, Tokyo Instititute of Technology

9:45

(31-B1C-S13-26) Mechanical properties of single crystal, bicrystal and amorphous SiC measured using microcantilever beam specimens

TATAMI, Junichi[*1,2]; IMOTO, Yumi[1]; YAMAGUCHI, Hiroshi[1]; NAKANO, Hiromi[3]; YAHAGI, Tsukaho[2]; TAKAHASHI, Takuma[2]; IIJIMA, Motoyuki[1,2]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan
3. Toyohashi University of Technology, Japan

10:00

(31-B1C-S13-27) Preparation of HfO_2 Thick Films Using Chemical Vapor Deposition and Their Mechanical Properties Measured with Microcantilever Beam

MATSUMOTO, Shogen[*1]; TATAMI, Junichi[1,2]; ITO, Akihiko[1]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

10:15

(31-B1C-S13-28) Plasma Corrosion Behavior of Yttrium Oxide Coating prepared by Aerosol Deposition Method (Invited)

ASHIZAWA, Hiroaki[*1,2]; KIYOHARA, Masakatsu[1]; YOSHIDA, Katsumi[2]
1. TOTO Ltd., Japan
2. Tokyo Institute of Technology, Japan

10:45

(31-B1C-S13-29) Investigation of the degradation mechanism in intermittent condition

HAN, Jimin[*1,2]; KIM, Jongwon[1]; PARK, Chusik[1]; JEONG, Seonguk[1]; JUNG, Kwangjin[1]; KIM, Youngho[2]; KANG, Kyoungsoo[1]
1. Hydrogen Laboratory, New and Renewable Energy Institute, Korea Institute of Energy Research (KIER), Republic of Korea
2. Department of Chemical Engineering and Applied Chemistry, Chungnam National University (CNU), Republic of Korea

Characterization

Session Chairs: ASHIZAWA, Hiroshi, TOTO Ltd.

11:00

(31-B1C-S13-30) Band Gaps of $(Ca_{1-x}\square_x)_2MnO_4$

YAMASHITA, Toru[*1]; HOSHI, Fumiya[2]
1. National Institute of Technology, Tomakomai College, Japan
2. JSR Co., Japan

11:15

(31-B1C-S13-31) Color variation of oxygen defective monoclinic-ZrO_{2-x} film formed by oxidation of Zr metal

HIMENO, Yuta[*1]; MATSUDA, Mitsuhiro[2]; SHIDA, Kenji[3]; MATSUDA, Motohide[2]
1. Department of Materials Science and Engineering, Graduate School of Science and Technology Kumamoto University, Japan
2. Division of Materials Science and Chemistry, Faculty of Advanced Science and Technology Kumamoto University, Japan
3. Technical Division, Faculty of Engineering, Kumamoto University, Japan

11:30

(31-B1C-S13-32) FIB-SEM Microstructural Characterization of Sintered Refractories

BEAUGNON, Florian[*1]; LAUTE, Clement[2]; HARA, Yuka[1]; CETIN, Deniz[3]; BOLORE, Damien[3]; LEPLAY, Paul[4]; HARA, Toru[1]; LECHEVALIER, David[5]; OHASHI, Naoki[1]
1. National Institue for Materials Science, Japan
2. Université de Limoges, France
3. Saint-Gobain Research North America, U.S.A.
4. Saint-Gobain Research Provence, France
5. Saint-Gobain K.K, Japan

11:45

(31-B1C-S13-33) Hydrogen storage kinetics of a compacted metal hydride with graphite addition

LEE, Pyoungjong[*1,2]; KIM, Jongwon[1]; JEONG, Seonguk[1]; KANG, Kyoungsoo[1]; JUNG, Kwangjin[1]; KIM, Youngho[2]; PARK, Chusik[1]
1. Hydrogen Laboratory, New and Renewable Energy Institute, Korea Institute of Energy Research (KIER), Republic of Korea
2. Department of Chemical Engineering and Applied Chemistry, Chungnam National University (CNU), Republic of Korea

■October 31 (Thu) (Room A2) ■

20:Ceramics for Rechargeable Energy Storage

Mg-ion battery

Session Chairs: ISHIDA, Naoya, Tokyo University of Science

8:30

(31-A2-S20-21) Synthesis of Porous Spinel-Type $MgMn_2O_4$ as a Positive Electrode Material for Magnesium Rechargeable Batteries

FUKUMI, Yu[*1]; SONE, Kazuki[1]; ISE, Ryuta[1]; ISHII, Kanji[1]; OAKI, Yuya[1]; MANDAI, Toshihiko[2]; YAGI, Shunsuke[3]; IMAI, Hiroaki[1]
1. Keio University, Japan
2. National Institute for Materials Science(NIMS), Japan
3. The University of Tokyo, Japan

Li-O2 battery

Session Chairs: ISHIDA, Naoya, Tokyo University of Science

8:45

(31-A2-S20-22) Copper/cobalt-doped $LaMnO_3$ Perovskite Oxide as Bifunctional Catalyst for Rechargeable Li-O_2 Batteries

HU, Xiulan[*1,2,3]; LV, Yue[1]; YU, Yawei[1]; SHEN, Xiaodong[1,2,3]
1. College of Materials Science and Engineering, Nanjing Tech University, China
2. The Synergetic Innovation Center for Advanced Materials, China
3. Jiangsu Collaborative Innovation Center for Advanced Inorganic Function Composites, Nanjing Tech University, China

Li-S battery

Session Chairs: ISHIDA, Naoya, Tokyo University of Science

9:00

(31-A2-S20-23) Sulfur-Copolymer Chemistry Based Lithium-ion Sulfur Batteries (Invited)

NGUYEN, Dan Thien[1]; HOEFLING, Alexander[2]; YEE, Minha[1]; NGUYEN, Giang Thi Huong[1]; THEATO, Patrick[2,3]; LEE, Young Joo[2]; SONG, Seung-Wan[*1]
1. Chungnam National University, Korea
2. University of Hamburg, Germany
3. Karlsruhe Institute of Technology, Germany

Ag-ion battery

Session Chairs: HOSONO, Eiji, AIST

9:30

(31-A2-S20-24) Operando X-ray Absorption Imaging Analysis of Ag-ion All-solid-state Rechargeable Battery

ORIKASA, Yuki[*1]; KANODORI, Koji[1]
1. Ritsumeikan University, Japan

Al-ion coductor

Session Chairs: HOSONO, Eiji, AIST

9:45

(31-A2-S20-25) Al^{3+} ion Conducting Aluminum Tungstate Crystals Oriented by Strong Magnetic Field

OZBILGIN, Cem Eren[*1,2]; TAMURA, Shinji[3]; IMANAKA, Nobuhito[3]; SUZUKI, Tohru S.[2]
1. Department of Nanoscience and Nanoengineering, Waseda University, Japan
2. Ceramic Processing Group, National Institute for Materials Science, Japan
3. Department of Applied Chemistry, Osaka University, Japan

(10:00) Coffee Break

Na-ion battery

Session Chairs: HOSONO, Eiji, AIST

10:15

(31-A2-S20-26) Structural analysis and DFT

calculation for Na diffusive mechanism of high Na^+ ion conductive $Na_2V_3O_7$ electrode

TANIBATA, Naoto[*1,2]; MAEDA, Masaki[1]; CHOTARD, Jean-Noel[3]; TAKEDA, Hayami[1,2]; NAKAYAMA, Masanobu[1,2,4]; MASQUELIER, Christian[3]
1. Department of Advanced Ceramics, Nagoya Institute of Technology, Japan
2. Elements Strategy Initiative for Catalysts and Batteries (ESICB), Kyoto University, Japan
3. Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, France
4. Global Research Center for Environment and Energy based on Nanomaterials Science (GREEN), National Institute for Materials Science (NIMS), Japan

Session Chairs: HAYASHI, Akitoshi, Osaka Prefecture University

10:30

(31-A2-S20-27) Ti-based Layered Oxides for Sodium Storage Applications (Invited)

NAOAKI, Yabuuchi[*1]
1. Yokohama National University, Japan

11:00

(31-A2-S20-28) Rational Design of Manganese Based Layered Oxides for Sodium Ion Batteries (Invited)

KANG, Yong-Mook[*1]
1. Dongguk University, Republic of Korea

Session Chairs: YABUUCHI, Naoaki, Yokohama National University

11:30

(31-A2-S20-29) Reversible oxygen-redox chemistry for large-capacity sodium-ion battery cathodes (Invited)

OKUBO, Masashi[*1]
1. The University of Tokyo, Japan

Li-ion battery

Session Chairs: YABUUCHI, Naoaki, Yokohama National University

13:30

(31-A2-S20-30) Developing electrode materials for Li-ion batteries: High Rate capability in polyanion materials (Invited)

KIM, Minkyu[1]; KIM, Minkyung[2]; KANG, Byoungwoo[*3]
1. Department of Materials Science and Engineering, POSTECH, Korea
2. Department of Materials Science and Engineering, POSTECH, Korea
3. Department of Materials Science and Engineering, POSTECH, Korea

Session Chairs: KANG, Byoungwoo, POSTECH

14:00

(31-A2-S20-31) Synthesis and electrochemical properties of $LiMn_{1-x}Fe_xPO_4$/C secondary particles

YAMASHITA, Hiroki[*1]; IKEGAMI, Jun[1]; HIRAYAMA, Yuko[1]; OGAMI, Takaaki[1]; YAMADA, Yuto[2]; KANAMURA, Kiyoshi[2]
1. Taiheiyo Cement Corporation, Japan
2. Tokyo Metropolitan University, Japan

14:15

(31-A2-S20-32) Investigation of process-structure-property-relationships of hierarchically structured $LiFe_{0.2}Mn_{0.8}PO_4$/C-composites: influence of primary particle size and carbon coating

WAGNER, Amalia Christina[*1]; BOHN, Nicole[1]; THAUER, Elisa[2]; KLINGELER, Ruediger[2]; BINDER, Joachim Rudolf[1]
1. Institute for Applied Materials (IAM-ESS), Karlsruhe Institute of Technology, Germany
2. Kirchhoff Institute of Physics, Heidelberg University, Germany

14:30

(31-A2-S20-33) Understanding Interfacial Reaction of $LiCoO_2$ Positive Electrode in Aqueous Lithium-Ion Batteries (Invited)

OH, Hyunjung[1,2]; YAMAGISHI, Hirona[3]; YAMANAKA, Keisuke[3]; OHTA, Toshiaki[3]; BYON, Hye Ryung[*1,2]
1. Korea Advanced Institute of Science and Technology (KAIST), South Korea
2. Advanced Battery Center, NanoCentury, KAIST Institute, South Korea
3. Synchrotron Radiation Center, Ritsumeikan University, Japan

(15:00) Coffee Break

Session Chairs: OKUBO, Masashi, The University of Tokyo

15:15

(31-A2-S20-34) Average and Local Structure and Chemical Analysis of $LiMn_{1-x}(Ni,Ti)_xO_2$ Prepared by Na/Li Ion Exchange (Invited)

ISHIDA, Naoya[*1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]; AKIMOTO, Junji[2]
1. Tokyo University of Science, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan

15:45

(31-A2-S20-35) Effect of Surface Oxysulfidation on $LiNi_{0.5}Mn_{1.5}O_4$ Single Crystals Shapes and Their Electrochemical Characterization

ZETTSU, Nobuyuki[*1,2]; KIM, Dae-wook[1]; SHIIBA, Hiromasa[2]; TESHIMA, Katsuya[1,2]
1. Department of Materials Chemistry, Faculty of Engineering, Shinshu University, Japan
2. Research Initiative for Supra-Materials (RISM), Japan

16:00

(31-A2-S20-36) Benefits of Porous Nano-Structured NCM Cathodes for Li-Ion Batteries

MUELLER, Marcus[*1]; BOHN, Nicole[1]; BINDER, Joachim[1]; BAUER, Werner[1]
1. Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

Session Chairs: ZETTSU, Nobuyuki, Shinshu University

16:15

(31-A2-S20-37) Enhanced electrochemical performance of the lithium ion secondary battery using solid electrolyte LICGC™

KATOH, Takashi[*1]; SATOH, Ryouhei[1]; TERAMOTO, Jun[1]; NAKAJIMA, Kousuke[1]
1. OHARA Inc., Japan

16:30

(31-A2-S20-38) Core-shelled Ni-MnCO3@Mn-NiCO3/RGO composite: one-step Synthesis and Excellent Performance for Lithium-Ion Batteries

HUANG, Xiaoxiao[*1]; ZHANG, Rui[1]; WEN, Guangwu[2]
1. School of Materials Science and Engineering, Harbin Institute of Technology, China
2. School of Materials Science and Engineering, Shandong University of Technology, China

16:45

(31-A2-S20-39) Applied SiO nano-layer for the negative electrode of Li-ion battery

MAMIYA, Mikito[*1]; AKIMOTO, Junji[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

■October 31 (Thu) (Room B1C) ■

24:Advanced Wear Resistant Materials: Tribology, Coatings and Reliability

Advanced Wear Resistant Coating I

Session Chairs: MOON, Kyoung Il, KITECH

14:00

(31-B1C-S24-01) Advanced Hard Nanocoatings Deposited By Magnetron Sputtering: Present State And Trends (Keynote)

MUSIL, Jindrich[*1,2]

1. Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Czech Republic
2. Institute of Physics v.v.i., Academy of Sciences of the Czech Republic, Czech Republic

14:30

(31-B1C-S24-02) Tribo-mechanical durability of SiC and SiCN coatings – effect of composition and thermal treatment (Invited)

CTVRTLIK, Radim[*1,2]; TOMASTIK, Jan[1,2]; VACLAVEK, Lukas[1]
1. Institute of Physics of the Czech Academy of Sciences, Joint Laboratory of Optics of Palacky University and Institute of Physics AS CR, Czech Republic
2. Regional Centre of Advanced Technologies and Materials, Joint Laboratory of Optics of Palacky University and Institute of Physics AS CR, Faculty of Science, Palacky University, Czech Republic

15:00

(31-B1C-S24-03) The mechanical properties of Zr-Cu-Si-N coatings deposited by magnetron sputtering process with single alloying target

LEE, Han Chan[*1]; YOON, Hae Won[1]; KIM, Soo Bin[1]; JUNG, Hun[1]; OH, Se Pil[1]; MOON, Kyoung-Il[1]
1. Heat treatment R&D group, Korea Institute of Industrial Technology, South Korea

15:15

(31-B1C-S24-04) Microstructural characteristics and mechanical properties of Zr-Cu-Si-N nanocomposite coatings

YOON, Hae Won[*1,2]; LEE, Han Chan[1]; KIM, Soo Bin[1]; MOON, Kyoung-Il[1]
1. Korea Institute of Industrial Technology, Korea
2. Pusan National University, Korea

Advanced Wear Resistanct Coating II

Session Chairs: BYUNG-KOOG, Jang, Kyushu University

15:30

(31-B1C-S24-05) Air-based Sputtering Deposition of Transition Metal Oxynitride Thin Films (Keynote)

LU, Fu-Hsing[*1]; LIOU, Yu-Chen[1]; CHAN, Mu-Hsuan[1]
1. National Chung Hsing University, Taiwan

16:00

(31-B1C-S24-06) Molecular simulation on adsorption behavior of polymethacrylate (PMA) on metal surface (Invited)

HIRAMOTO, Takuya[*1]; MANABE, Yoshitaka[2]; ONUMATA, Yasushi[2]; TAKABA, Hiromitsu[1]
1. Department of Environmental and Energy Chemistry, Kogakuin University, Japan
2. JXTG Nippon Oil & Energy Corporation, Japan

16:30

(31-B1C-S24-07) Evaluation of Hamaker constant of hematite particles in water

SAYANO, Akio[*1]; SHINOZAKI, Kazuo[1]; YASUDA, Kouichi[1]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan

16:45

(31-B1C-S24-08) Damage and Wear Resistance of CNTs, SiC Reinforced Al2O3 Composites

JANG, Byung-Koog[*1]; LEE, Kee Sung[2]
1. Interdisciplinary Graduate School of Engineering Science, Kyushu University, Japan
2. School of Mechanical Engineering, Kookmin University, Korea

■October 31 (Thu) (Room B6) ■

25:Direct Thermal-to-Electrical Energy Conversion Materials and Thermal Energy Harnessing Challenges

Oxides

Session Chairs: LEE, Soonil (1) ; GUILMEAU, Emmanuel (2), (1)Changwon National University, (2)CRISMAT

9:00

(31-B6-S25-21) Recent advances in thermoelectric thin films (Invited)

MELE, Paolo[*1]
1. Shibaura Institute of Technology, Japan

9:30

(31-B6-S25-22) Microstructure and thermoelectric properties of [001]c grain-aligned Ca3Co4O9 ceramics prepared by template grain growth

SHI, Zongmo[*1,3]; XU, Jie[1,3]; QIN, Mengjie[1,3]; ZHANG, Yi[1,3]; TONG, Gao[2,3]; ZHU, Jihong[2,3]; GAO, Feng[1,3]
1. State Key Laboratory of Solidification Processing, MIIT Key laboratory of Radiation Detection Materials and Devices, School of Material Science and Engineering, Northwestern Polytechnical University, P.R. China
2. State IJR Center of Aerospace Design and Additive Manufacturing, MIIT Lab of Metal Additive Manufacturing and Innovative Design, Northwestern Polytechnical University, P. R. China
3. NPU-QMUL Joint Research Institute of Advanced Materials and Structure, Northwestern Polytechnical University, P. R. China

9:45

(31-B6-S25-23) Microstructure and thermoelectric properties of $Sr_{0.9}La_{0.1}TiO_3$ ceramics with nano-sized metal particles as additive

QIN, Mengjie[*1,2]; GAO, Feng[1,2]; XU, Jie[1,2]; SHI, Zongmo[1,2]; ZHANG, Yi[1,2]; REECE, Mike[2,3]; YAN, Haixue[2,3]
1. State Key Laboratory of Solidification Processing, MIIT Key Laboratory of Radiation Detection Materials and Devices, USI Institute of Intelligence Materials and Structure, School of Materials Science and Engineering, Northwestern Polytechnical University, China
2. NPU-QMUL Joint Research Institute of Advanced Materials and Structure, Northwestern Polytechnical University, China
3. School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom

10:00

(31-B6-S25-24) Thermoelectric Performance of Porous Nb- and Ni-doped $SrTiO_3$ Containing Ni Nanoparticles Exsolved by Reducing Post-treatment

OHTAKI, Michitaka[*1,2]; HIRATA, Shinji[1]; SUEKUNI, Koichiro[1,2]
1. Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. Transdisciplinary Research and Education Center for Green Technologies, Kyushu University, Japan

(10:15) Coffee Break

High-temperature Materials

Session Chairs: MELE, Paolo (1) ; CHEN, Kuei-Hsien (2), (1)Shibaura Institute of Technology, (2)Institute of Atomic and Molecular Sciences-Academia Sinica-National Taiwan University

10:30

(31-B6-S25-25) Charge and Phonon Transport Engineering in Oxide Thermoelectrics (Invited)

RAHMAN, Jamil Ur[1]; LIM, Chang-Hyun[1]; NAM, Woo Hyun[1]; SHIN, Weon Ho[1]; CHO, Jung Young[1]; SEO, Won-Seon[1]; LEE, Soonil[*2]
1. Korea Institute of Ceramic Engineering and Technology, Korea
2. Changwon National University, Korea

11:00

(31-B6-S25-26) Investigation of transition metals-based chalcogenide and silicide thermoelectric materials (Invited)

BERTHEBAUD, David[*1]
1. CNRS-Saint Gobain-NIMS, UMI 3629, Laboratory for Innovative Key Materials and Structures (LINK), National Institute for Materials Science, Japan

11:30

(31-B6-S25-27) Features of Electrical Resistivity and Thermal Conductivity in Modulation Doped $Si_{75}Ge_{25}$

KHOVAYLO, Vladimir[*1]; SERGIENKO, Ilia[1]; IVANOVA, Alexandra[1]; MORI, Takao[2]
1. National University of Science and Technology "MISIS", Russia
2. International Center for Materials Nanoarchitectonics, National Institute for Materials Science, Japan

11:45

(31-B6-S25-28) Ultra-high temperature thermoelectric ceramic materials and possible applications

MORI, Takao[*1,2]
1. National Institute for Materials Science (NIMS), Japan
2. University of Tsukuba, Japan

■October 31 (Thu) (Room B4) ■

26:Ceramic Materials for Nuclear Energy

Ceramics for Nuclear Energy

Session Chairs: FOX, Kevin, Savannah River National Laboratory

8:30

(31-B4-S26-01) Fuel Behavior Analysis Code FEMAXI-ATF Development for SiC Cladding Analysis for LWRs (Invited)

YAMASHITA, Shinichiro[*1]; SHIRASU, Noriko[1]; SAITO, Hiroaki[1]
1. Japan Atomic Energy Agency, Japan

9:00

(31-B4-S26-02) Mastering the development of oxide fuel microstructure (Invited)

VAUDEZ, Stephane[*1]; LECHELLE, Jacques[2]
1. CEA, DEN, MAR, DMRC, SFMA, LFC, F-30207 Bagnols-sur-Cèze Cedex, France
2. CEA, DEN, CAD, DEC, SESC, LM2C, F-13108 Saint-Paul-les-Durance Cedex, France

9:30

(31-B4-S26-03) Innovative processes for MOX fuel fabrication

LA LUMIA, Florian[1]; MOUGARD-CAMACHO, Pierre-Francois[1]; RAMOND, Laure[*1]; BERNARD-GRANGER, Guillaume[1]; PAGNOUX, Cecile[2]; DOREAU, Franck[1]; VALETTE, Rudy[3]; LEMONT, Florent[1]
1. CEA, DEN, DMRC, SFMA, LFC, F30207 Bagnols sur Cèze Cedex, France
2. Institute of Research for Ceramics (IRCER), 12 rue Atlantis, F87068 Limoges, France
3. MINES ParisTech, CEMEF, CNRS UMR 7635, F06904 Sophia Antipolis Cedex, France

9:45

(31-B4-S26-04) Effects of heating conditions on the particle characteristics of uranium oxide powders synthesized from uranyl nitrate solutions via microwave heating

SEGAWA, Tomoomi[*1]; KAWAGUCHI, Koichi[1]; ISHII, Katsunori[1]; FUKASAWA, Tomonori[2]; FUKUI, Kunihiro[2]
1. Japan Atomic Energy Agency, Japan
2. Department of Chemical Engineering, Graduate School of Engineering, Hiroshima University, Japan

10:00

(31-B4-S26-05) Direct synthesis of morphology-controlled UO_{2+x} through hydrothermal conversion of uranium (IV) carboxylates

MANAUD, Jeremie[1]; TRILLAUD, Victor[1]; MAYNADIE, Jerome[1]; MESBAH, Adel[1]; DACHEUX, Nicolas[1]; PODOR, Renaud[1]; CLAVIER, Nicolas[*1]
1. ICSM, CEA, CNRS, ENSCM, Univ. Montpellier, Site de Marcoule, BP 17171, 30207 Bagnols/Cèze, France

(10:15) Coffee Break

Ceramics and Glass for Nuclear Waste Management

Session Chairs: CLAVIER, Nicolas, ICSM, CEA, CNRS, ENSCM, Univ. Montpellier, Site de Marcoule

10:45

(31-B4-S26-06) Transmutation target of Am-Zr hydride to reduce nuclear wastes by fast reactor (Invited)

KONASHI, Kenji[*1]; HIRAI, Mutsumi[2]; MUTA, Hiroaki[3]; HIBI, Koki[4]; IKEDA, Kazuo[5]
1. Institute for Materials Research, Tohoku University, Japan
2. Nippon Nuclear Fuel Development Co. Ltd., Oarai, Ibaraki-ken, 311-1313, Japan
3. Division of Sustainable Energy and Environmental Engineering, Graduate School of Engineering, Osaka University, Suita, Osaka-fu, 565-0871, Japan
4. Mitsubishi FBR Systems, Inc., Shibuya, Tokyo, 150-0001, Japan
5. Nuclear Development Corporation, Tokai-mura, Ibaraki-ken, 319-1111 Japan

11:15

(31-B4-S26-07) Phosphate based matrices for the specific conditioning of actinides (Invited)

MESBAH, Adel[*1]; QIN, Danwen[1]; RAFIUDDIN, Mohamed Ruwaid[1]; CLAVIER, Nicolas[1]; SZENKNECT, Stephanie[1]; DESCHANELS, Xavier[1]; DACHEUX, Nicolas[1]
1. ICSM, CEA, CNRS, ENSCM, Univ Montpellier, Site de Marcoule, Bat 426, 30207 Bagnols Sur Ceze, France

11:45

(31-B4-S26-08) Coupling Damage and Transport in Complex Oxides

KRELLER, Cortney R[1]; VALDEZ, James A[2]; PILANIA, Ghanshyam[2]; PERRIOT, Romain[3]; JANISH, Matthew T[2]; UBERUAGA, Blas P[*2]
1. Materials Physics and Applications Division, Los Alamos National Laboratory,USA
2. Materials Science and Technology Division, Los Alamos National Laboratory, USA
3. Theoretical Division, Los Alamos National Laboratory, USA

Session Chairs: FOX, Kevin, Savannah River National Laboratory

13:30

(31-B4-S26-09) Hot Isostatic Pressing and Chemical Alteration of Zirconolite Ceramics for the Immobilisation of Surplus Plutonium

BLACKBURN, Lewis Robert[*1]; HYATT, Neil[1]; STENNETT, Martin[1]; CRAWFORD, Rachel[1]; CORKHILL, Claire[1]; SUN, Shikuan[1]; GARDNER, Laura[1]; WALLING, Samuel[1]
1. Immobilisation Science Laboratory, Department of Materials Science and Engineering, University of Sheffield, United Kingdom

13:45

(31-B4-S26-10) Solidification of concrete wastes from decommissioning of nuclear power plants with magnesium phosphate cements

PYO, Jae-Young[*1]; HEO, Jong[1]
1. Division of Advanced Nuclear Engineering, Pohang University of Science and Technology (POSTECH), Korea

14:00

(31-B4-S26-11) Development of inorganic composite (SiO_2-Al_2O_3-P_2O_5) to treat radioactive salt waste generated from pyroprocess

KI RAK, Lee[*1]; HWAN-SEO, Park[1]; JUNG-HOON, Choi[1]; HYUN WOO, Kang[1]
1. KOREA ATOMIC ENERGY RESEARCH INSTITUTE (KAERI), Korea

14:15

(31-B4-S26-12) Synthesis, Characterization and Corrosion of Simulant Chernobyl and Fukushima Nuclear Fuel Debris (Invited)

GAUSSE, Clemence[1]; STENNETT, Martin[1]; BAILEY, Daniel[1]; BARLOW, Sean[1]; DING, Hao[1]; HYATT, Neil[1]; KRASNOV, Viktor[2]; SAYENKO, Sergey[3]; WASHIYA, Tadahiro[4]; UESAKA, Mitsuru[5]; SHIBA, Tomooki[4]; CORKHILL, Claire[*1]
1. NucleUS Immobilisation Science Laboratory, University of Sheffield, Sheffield, UK
2. Institute for Safety Problems of Nuclear Power Plants, National Academy of Sciences of Ukraine, Kyiv, Ukraine.
3. National Science Center Kharkov Institute of Physics and

Technology, Kharkov, Ukraine.
4. Collaborative Laboratories for Advanced Decommissioning Science (CLADS), Japan
5. Department of Bioengineering, The University of Tokyo, Tokyo, Japan

14:45

(31-B4-S26-13) Radioactive Waste Management by Novel Ceramic Cold-sintering (Invited)

UL HASSAN, Muhmood[1]; RYU, Ho Jin[*1]
1. Department of Nuclear and Quantum Engineering, Korea Advanced Institute of Science and Technology, Korea

15:15

(31-B4-S26-14) Valence state of noble metal Pd in nuclear waste borosilicate glass aged around Tg

YANO, Tetsuji[*1]; MIDORIKAWA, Mio[1]; MATSUSHITA, Nobuhiro[1]; KISHI, Tetsuo[1]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan

(15:30) Coffee Break

Session Chairs: CLAVIER, Nicolas, ICSM, CEA, CNRS, ENSCM, Univ. Montpellier, Site de Marcoule

16:00

(31-B4-S26-15) Modelling radiation damage in glasses: increasing disorder

DICKS, Oliver[*1]; DIVER, Aaron[1]; TRACHENKO, Kostya[1]
1. Queen Mary University of London, UK

16:15

(31-B4-S26-16) Tellurite Glasses for Immobilization of Highly Volatile Radioactive Nuclides

HEO, Jong[*1]; LEE, Cheong Won[1]; PYO, Jae-Young[1]
1. Pohang University of Science and Technology, Korea

16:30

(31-B4-S26-17) Improved Melter Technologies and Glass Formulations for HLW Vitrification

SAKAI, Akira[*1]
1. Japan Nuclear Fuel Limited, Japan

16:45

(31-B4-S26-18) Observations of Crystal Settling in a Full-Scale Nuclear Waste Glass Melter Test System

FOX, Kevin M.[*1]; FOWLEY, Mark D.[1]; KRUGER, Albert A.[2]
1. Savannah River National Laboratory, USA
2. U.S. Department of Energy Office of River Protection, USA

■October 31 (Thu) (Room B2) ■

28:Photo-functional Inorganic Materials

Session Chairs: HASEGAWA, Takuya, Kochi Univbersity

8:30

(31-B2-S28-13) Tunable trap depth in rare earth doped $Zn_3Ga_2Si_2O_{10}$ persistent luminescence materials for information storage applications

ZHANG, Ying[*1,2]; DENG, Mingxue[1]; WANG, Caiyan[1]; ZHENG, Zhehan[1]; ZHANG, Xiang[1]; ZHOU, Zhenzhen[1]; XU, Xiaoke[1]; LIU, Qian[1]; SONG, Zhitang[2]
1. The Key Laboratory of Inorganic Functional Materials and Devices, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Micro-system and Information Technology, Chinese Academy of Sciences, China

8:45

(31-B2-S28-14) Synthesis and Luminescence Properties of $Ba_2LiSi_{7-x}Al_{1+x}N_{12-x}O_x$:Eu Phosphor

TAKEDA, Takashi[*1]; KATO, Kousuke[2]; KIYONO, Hajime[2]; HIROSAKI, Naoto[1]
1. National Institute for Materials Science, Japan
2. Shibaura Institute of Technology, Japan

Session Chairs: TODA, Kenji, Niigata University

9:00

(31-B2-S28-15) Modeling of Emission Properties of Structural Distortion Induced Substituted Halide Perovskites (Invited)

TAKABA, Hiromitsu[*1]; KIMURA, Shou[1]; OONO, Takaya[1]
1. Department of Environmental Chemistry and Chemical Engineering, School of Advanced Engineering, Kogakuin University, Japan

9:30

(31-B2-S28-16) Study on Red-Emission Scintillation Materials ~Crystals & powders~ (Invited)

KUROSAWA, Shunsuke[*1]; KURASHIMA, Yutaro[1]; YAMAJI, Akihiro[1]; KODAMA, Shohei[1]; TOYODA, Satoshi[1]; YOSHINO, Masao[1]; SATO, Hiroki[1]; KAMADA, Kei[1]; YOKOTA, Yuui[1]; OHASHI, Yuji[1]; YOSHIKAWA, Akira[1]
1. Tohoku Univ., Japan

Session Chairs: TODA, Kenji, Niigata University

10:15

(31-B2-S28-17) Photocatalyst materials for artificial photosynthesis (Invited)

KUDO, Akihiko[*1]
1. Tokyo University of Science, Japan

Session Chairs: IDA, Shintaro, Kumamoto University

10:45

(31-B2-S28-18) Thermal Treatment Effect on Peroxo-lepidocrocite Titanate Nanotube and its Photocatalytic Activity

PARK, Hyunsu[*1]; GOTO, Tomoyo[1]; CHO, Sunghun[1]; SEKINO, Tohru[1]
1. Department of Advanced Hard Materials, The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan

11:00

(31-B2-S28-19) Construction of a hierarchical Z-scheme photocatalyst composed of zinc rhodium oxide and bismuth vanadate for overall water splitting

TAKASHIMA, Toshihiro[*1]; MORIYAMA, Narumi[2]; FUJISHIRO, Yukitaka[2]; OHTANI, Bunsho[3]; IRIE, Hiroshi[1]
1. Clean Energy Research Center, University of Yamanashi, Japan
2. Department of Applied Chemistry, Faculty of Engineering, University of Yamanashi, Japan
3. Institute for Catalysis, Hokkaido University, Japan

11:15

(31-B2-S28-20) Formation mechanism of hexagonal platelet delafossite $CuGaO_2$ by hydrothermal synthesis

HAYASHI, Naoki[*1]; CHOI, Min Uk[1,2]; HAYAKAWA, Tomokatsu[1,2]
1. Field of Advanced Ceramics, Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan
2. Frontier Research Institute of Materials Science (FRIMS), Nagoya Institute of Technology, Japan

Session Chairs: TODA, Kenji, Niigata University

11:30

(31-B2-S28-21) Two-dimensional Nanomaterials for Artificial Photosynthesis: Turning CO_2 into a Valuable Resource (Invited)

CHEN, Li-Chyong[*1,2]; SHOWN, Indrajit[3]; DU, He-Yun[1,2]; LIEN, Hsiang-Ting[1,2]; CHANG, Yu-Chung[1]; CHEN, Kuei-Hsien[1,3]
1. Center for Condensed Matter Sciences, National Taiwan University, Taiwan
2. Center of Atomic Initiative for New Materials, National Taiwan University, Taiwan
3. Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan

Session Chairs: MASUI, Toshiyuki, Tottori University

13:30

(31-B2-S28-22) Hydrothermal synthesis of $CuGaO_2$ and $CuGaO_2$/ZnO hybrids and their photocatalytic properties

CHOI, Minuk[*1,2]; YAGI, Sota[3]; OHTA, Yasuhiro[3]; KIDO, Kenji[3];

HAYAKAWA, Tomokatsu[1,2]
1. Field of Advanced Ceramics, Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan
2. Frontier Research Institute of Materials Science (FRIMS), Nagoya Institute of Technology, Japan
3. KAWAI LIME INDUSTRY Co. Ltd., Japan

13:45

(31-B2-S28-23) Preparation and Photocatalytic Activity of Calcium Tantalum Oxynitride Nanosheets (Invited)

IDA, Shintaro[*1]; IDETA, Takumi[1]; AWAYA, Keisuke[1]; KOINUMA, Michio[1]
1. Faculty of Advanced Science and Technology, Kumamoto Univeristy, Japan

14:15

(31-B2-S28-24) 1.3 nm-thick $Ti_{0.91}O_2$/$Ni(OH)_{1.76}$ Nanosheet Bilayer pn Junction

AWAYA, Keisuke[*1]; KOINUMA, Michio[1]; IDA, Shintaro[1]
1. Graduate School of Science and Technology, Kumamoto University, Japan

Session Chairs: KUROKI, Yuichiro, Salesian Polytechnic

14:30

(31-B2-S28-25) Nanoscale 3-D Performance of Thin Film Photovoltaics

SONG, Jingfeng[1]; MARTIN, Michael[1]; ATAMANUK, Katherine[1]; HUEY, Bryan[*1]
1. University of Connecticut, Dept. of Materials Science and Engineering, USA

14:45

(31-B2-S28-26) Bismuth chalcogenide iodides of Bi13S18I2: Solvothermal Synthesis, Photoelectronic Behavior, and Photovoltaic Performance

LI, Sen[*1]; XU, Linfeng[1]; QI, Feng[1]
1. Kagawa University, Japan

Session Chairs: HAMAGAMI, Junichi, Kanto Gakuin University

15:00

(31-B2-S28-27) Novel Inorganic Black Pigments Based on Ca_2MnO_4 for High Near-Infrared (NIR) Reflectance

OKA, Ryohei[*1]; IWASAKI, Senri[2]; MASUI, Toshiyuki[2,3]
1. Graduate School of Engineering, Tottori University, Japan
2. Faculty of Engineering, Tottori University, Japan
3. Center for Research on Green Sustainable Chemistry, Tottori University, Japan

15:15

(31-B2-S28-28) Development of $Ba_2(Si_{1-x}Mn_x)O_4$ as novel blue pigments

HANADA, Ryu[*1]; UEMATSU, Kazuyoshi[2]; TODA, Kenji[1]; SATO, Mineo[1]; MASUI, Toshiyuki[3]
1. Graduate School of science and Technology, Niigata University, Japan
2. Department of Chemistry and Chemical Engineering, Niigata University, Japan
3. Department of Chemistry and Biotechnology, Graduate School of Engineering, Tottori University, Japan

15:30

(31-B2-S28-29) Soft Chemical Synthesis of Non-Oxide Phosphors Using Novel Water-Assisted Solid-State Reaction method

TODA, KENJI[*1]; YOON, DAE HO[2,3]
1. Niigata Univ., Japan
2. School of Advanced Materials Science & Engineering, Sungkyunkwan Univ., Korea
3. SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan Univ., Korea

■October 31 (Thu) (Room C1) ■

29:Liquid-mediated Structuring of Ceramics and Organic-inorganic Hybrid Materials

Novel Synthesis

Session Chairs: SUGAHARA, Yoshiyuki, Waseda University

8:45

(31-C1-S29-26) Nitrides via precursor chemistry and processing (Invited)

BERNARD, Samuel[*1]
1. Univ. Limoges, CNRS, IRCER, UMR 7315, France

9:15

(31-C1-S29-27) Additive Manufacturing of Ceramics from Preceramic Polymers (Invited)

COLOMBO, Paolo[*1]; SCHMIDT, Johanna[1,2]; FRANCHIN, Giorgia[1]; ELSAYED, Hamada[1]; HUANG, Kai[1]
1. University of Padova, Italy
2. Schunk Group, Germany

9:45

(31-C1-S29-28) Sol-gel like chemistry in supercritical fluids for advanced nanostructured ceramics and organic-inorganic hybrid materials (Invited)

AYMONIER, Cyril[*1]; AUXEMERY, Aimery[1]; PHILIPPOT, Gilles[1]; ELISSALDE, Catherine[1]; MAGLIONE, Mario[1]
1. CNRS, Univ. Bordeaux, Bordeaux INP, ICMCB, UMR 5026, France

(10:15) Coffee Break

Nanomaterials

Session Chairs: BERNARD, Samuel, CNRS

10:30

(31-C1-S29-29) Nano-hybridization of Titania Nanotubes using Facile In-situ Solution-based Process and Their Structures and Functions (Invited)

TSUKATANI, Kota[1]; EOM, Sunghun[1]; TSUKUDA, Satoshi[2]; GOTO, Tomoyo[1]; CHO, Sung Hun[1]; SEKINO, Tohru[*1]
1. The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan
2. Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, Japan

11:00

(31-C1-S29-30) Microwave-assisted metal-induced crystallization in solution of mesostructured TiO_2 microspheres (Invited)

DRISKO, Glenna L.[*1]; DANTY, Paul M. P.[1]; CORMARY, Benoit[1]; MAZEL, Antoine[1]; DE MARCO, Maria L.[1]; ALLOUCHE, Joachim[2]; FLAHAUT, Delphine[2]; DELVILLE, Marie-Helene[1]
1. CNRS, Université de Bordeaux, Bordeaux INP, ICMCB, UMR 5026, France
2. CNRS, Univ. Pau & Pays Adour, E2S UPPA, Institut des Sciences Analytiques et de Physicochimie pour l'Environnement et les Matériaux, UMR 5254, France

11:30

(31-C1-S29-31) Preparation of Titania Hollow Spheres with Thin Shell Using Peroxotitanium Complex and Silica Template

SASAKI, Moe[*1]; YAMAMOTO, Eisuke[2]; MATSUNO, Takamichi[1]; WADA, Hiroaki[1]; SIMOJIMA, Atsushi[1,3]; KURODA, Kazuyuki[1,3]
1. Department of Applied Chemistry, Waseda University, Japan
2. Institute of Materials and Systems for Sustainability, Nagoya University, Japan
3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

11:45

(31-C1-S29-32) Reactivity of Vinyl Group on the Surface of TiO2 Nanoparticles Modified with Vinylphosphonic Acid

MIKI, Anri[*1]; IDOTA, Naokazu[2]; GUEGAN, Regis[3]; SUGAHARA, Yoshiyuki[1,4]
1. Department of Applied Chemistry, School of Advanced Science and Engineering, Waseda University, Japan
2. Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan
3. Global Center for Science and Engineering, Waseda University, Japan
4. Kagami Memorial Institute for Materials Science and Technology, Waseda University, Japan

Session Chairs: AYMONIER, Cyril, CNRS

13:30

(31-C1-S29-33) Solution-phase Syntheses of Multinary Semiconductor Nanocrystals Composed of Less-toxic Elements and Their Photochemical Properties (Invited)

TORIMOTO, Tsukasa[*1]; KAMEYAMA, Tatsuya[1]; KUWABATA, Susumu[2]
1. Graduate School of Engineering, Nagoya University, Japan
2. Graduate School of Engineering, Osaka University, Japan

14:00

(31-C1-S29-34) Synthesis, Morphology and Crystallography of Cobalt Thiolates Nanoparticles

MATSUKAWA, Yuko[*1]; HASEGAWA, George[1]; AKAMATSU, Hirofumi[1]; HAYASHI, Katsuro[1]
1. Department of Applied Chemistry, Kyushu University, Japan

14:15

(31-C1-S29-35) Preparation of Fe_3O_4 nanoparticles modified with *n*-dodecylphosphonic acid *via* a one-pot nonaqueous process using an oxidation of tetrachloroferrate (III) anions

KAMURA, Atsuo[*1]; IDOTA, Naokazu[2]; SUGAHARA, Yoshiyuki[1,3]
1. Kagami Memorial Res. Inst. Mater. Sci. Tech., Waseda University, Japan
2. Faculty of Bioscience and Applied chemistry, Hosei University, Japan
3. Department of Applied chemistry, Waseda University, Japan

Session Chairs: SEKINO, Tohru, Osaka University

14:30

(31-C1-S29-36) Hydrothermal Synthesis of layered Niobium Phosphates and delaminated

YOSHIDA, Yuichiro[*1]; HASEGAWA, George[1]; AKAMATSU, Hirofumi[1]; HAYASHI, Katsuro[1]
1. Kyushu University, Japan

14:45

(31-C1-S29-37) Preparation of water dispersible Janus nanosheets using layered hexanaibate and their interfacial behavior

NAGAI, Tomoki[*1]; SUZUKI, Ryoko[2]; GUEGAN, Regis[3]; NISHIMI, Taisei[4]; ONITSUKA, Emika[5]; KUNITAKE, Masashi[5]; SUGAHARA, Yoshiyuki[1,2]
1. Department of Applied Chemistry, School of Advanced Science and Engineering, Waseda University, Japan
2. Kagami Memorial Institute for Materials Science and Technology, Waseda University, Japan
3. Grobal Center for Science and Engineering, Waseda University, Japan
4. Japan Technological Research Association of Artificial Photosynthetic Chemical Process (ARPChem), Japan
5. Graduate School of Science and Technology, Kumamoto University, Japan

15:00

(31-C1-S29-38) Interlayer Grafting of Kaolinite with Trimethylphosphate

MACHIDA, Shingo[*1]; IDOTA, Naokazu[2]; SUGAHARA, Yoshiyuki[1,3]
1. Department of Applied Chemistry, School of Advanced Science and Engineering, Waseda University, Japan
2. Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan
3. Kagami Memorial Institute for Materials Science and Technology, Waseda University, Japan

■October 31 (Thu) (Room C2) ■

30:Advanced Materials and Processing for Power Electronics Application

Highly-heat-resistant capacitors

Session Chairs: TAKEDA, Hiroaki, Tokyo Institute of Technology

9:00

(31-C2-S30-08) Development of Ceramic Film Capacitors for High-Temperature Power Electronics (Keynote)

BALACHANDRAN, U (Balu)[*1]; MA, Beihai[1]; LEE, Tae[1]; DORRIS, Stephen[1]
1. Argonne National Laboratory, USA

Session Chairs: BALACHANDRAN, U (Balu), Argonne National Laboratory

9:45

(31-C2-S30-09) Development of Dielectric Materials for Heat Resistant Capacitor (Invited)

TSURUMI, Takaaki[*1]; TAKEDA, Hiroaki[1]; HOSHINA, Takuya[1]
1. Tokyo Institute of Technology, Japan

(10:15) Coffee Break

Session Chairs: BALACHANDRAN, U (Balu), Argonne National Laboratory

10:30

(31-C2-S30-10) Bi-containing complex perovskite ceramic dielectrics for high-temperature/high-energy capacitor applications (Invited)

KWON, Do-Kyun[*1]; GOH, Yumin[1]; SONG, Taeyoung[1]
1. Department of Materials Engineering, Korea Aerospace University, KOREA

Session Chairs: KWON, Do-Kyun, Korea Aerospace University

11:00

(31-C2-S30-11) Structure and Piezoelectric Property of $Ba_3TaGa_3Si_2O_{14}$ Single Crystals Grown by Czochralski Method

TAKEDA, Hiroaki[*1]; USUI, Haruki[1]; HOSHINA, Takuya[1]; TSURUMI, Takaaki[1]
1. Tokyo Institute of Technology, Japan

11:15

(31-C2-S30-12) High temperature analysis by Nyquist diagrams for $CaZrO_3$ based dielectric capacitors

SUZUKI, Muneyasu[*1,2]; USHIJIMA, Hiroshi[1]; TSUCHIYA, Tetsuo[2]; SAITO, Kenji[3]; NAKADA, Yosuke[3]; MIZUNO, Youichi[3]
1. Human Augmentation Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. R&D Center, TAIYO YUDEN Co., LDT., Japan

Electronic packaging?for power device

Session Chairs: SUGAWARA, T., Osaka University

13:15

(31-C2-S30-13) Packaging Material Technology for Wide Band Gap Power Devices and Its Performance/Reliability Evaluation (Invited)

SUGANUMA, Katsuaki[*1]; CHEN, Chuantong[1]; SUGAHARA, Toru[1]; NAGAO, Shijo[1]; SATO, Naoki[1]; SUETAKE, Atsushi[1]; CHOE, Chanyan[1]; KIM, Donjin[1]; TAKATA, Shuhei[1]
1. Osaka University, Japan

13:45

(31-C2-S30-14) Structural strategy for low temperature sintering of copper (Invited)

YONEZAWA, Tetsu[*1]
1. Hokkaido University, Japan

14:15

(31-C2-S30-15) Ag and Si particles sintering

technology for SiC power device (Invited)
UESHIMA, Minoru[*1]; MOTOTSUJI, Tomoaki[2]; ISONO, Yusuke[2]; HAGA, Motoharu[1]
1. Daicel Corpration, Japan
2. Osaka University, Graduate School of Engineering, Japan

14:45
(31-C2-S30-16) Influence of Temperature on Welding Process of CLCC-3 Package Components Using AuSn20 Solder
ZHAO, Zhihuan[*1,2,3]; GONG, Guanghao[1]; LIU, Weili[2]; CHEN, Chuanzhong[1]; PAN, Yingyue[2]; WANG, Feng[2]; ZHANG, Li[3]; LIU, Lili[3]
1. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Department of Materials Science and Engineering, Shandong University, China
2. School of Mechanical and Electronic Engineering, Shandong Agricultural and Engineering University, China
3. Jinan Semiconductor Research Institute, China

(15:00) Coffee Break

Ceramic circuit boards

Session Chairs: HIRAO, K., AIST

15:15
(31-C2-S30-17) Development of High-Thermal-Conductivity Silicon Nitride Substrates (Invited)
ZHOU, You[*1]; HYUGA, Hideki[1]; MIYAZAKI, Hiroyuki[1]; HIRAO, Kiyoshi[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

15:45
(31-C2-S30-18) Ceramics and metal-based substrate for power electronics application (Invited)
HIROTUSU, Hideki[*1]; TANIGUCHI, Yoshitaka[2]; IWAKIRI, Shoji[2]
1. Denka, Japan
2. Denka, Japan

Session Chairs: NAKAJIMA, Tomohiko, AIST

16:15
(31-C2-S30-19) Characterization of epoxy resin composites loaded with combustion synthesized silicon nitride
SHIMAMURA, Akihiro[*1]; HYUGA, Hideki[1]; HOTTA, Yuji[1]; HOTTA, Mikinori[1]; HIRAO, Kiyoshi[1]
1. National Institute of Advanced Industrial Science and Technology, Japan

16:30
(31-C2-S30-20) Investigation of aluminum and ceramic substrates joined samples with thermal stress relieving layers
KITA, Ken'ichiro[*1]; KONDO, Naoki[1]; HOTTA, Mikinori[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

16:45
(31-C2-S30-21) Assessment of thermal fatigue during high temperature cycling for active metal brazing ceramic substrates
HIRAO, Kiyoshi[*1]; MIYAZAKI, Hiroyuki[1]; ZHOU, You[1]; HYUGA, Hideki[1]
1. National Institute of Advanced Industrial Science and technology (AIST), Japan

■October 31 (Thu) (Room A3) ■

34:Analysis of Cultural Heritage: Discoveries and Understanding

Analysis of Cultural Heritage

Session Chairs: GATES, Glenn, Walters Art Museum

9:00
(31-A3-S34-01) Micro-Raman spectroscopy and complementary techniques (OM, SEM-EDS and FTIR) applied to the study of a Mahamayuri Vidyarajni Sutra
LIU, Liu[*1,2]; GONG, Decai[2]
1. Institute of Culture and Heritage, Northwestern Polytechnical University, China
2. Basic Research Center of Conservation Science, Department of History of Science and Scientific Archaeology, University of Science and Technology of China, China

9:15
(31-A3-S34-02) Studies on the Pigments in Ancient Thai Manuscripts
BUNTEM, Radchada[*1,2]; RUEANGYODJANTANA, Jutamas[2]
1. Department of Chemistry, Faculty of Science, Silpakorn University, Thailand
2. Center of Excellence in Design Materials, Faculty of Science, Silpakorn University, Thailand

9:30
(31-A3-S34-03) Discrimination between Soot-Based Inks Using Raman Spectroscopy
GIACCAI, Jennifer[*1,2]; MILLER, J. Houston[2]
1. Freer|Sackler Galleries, Smithsonian Institution, USA
2. Department of Chemistry, George Washington University, USA

10:00
(31-A3-S34-05) Nanostructured materials for the preservation and conservation of artefacts of artistic and archeological interest (Invited)
SALADINO, MARIA LUISA[*1]
1. Dipartimento Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche - STEBICEF and INSTM UdR - Palermo, Università di Palermo, Italy

10:30
(31-A3-S34-06) Origin of colors in glazes from the "Manufacture of Sèvres"
CORMIER, Laurent[*1]; VERGER, Louisiane[1,2]; NOIROT, Cecile[1]; DARGAUD, Olivier[2]
1. IMPMC, Sorbonne Université, CNRS, MNHN, IRD, France
2. Cité de la Céramique, France

(10:45) Coffee Break

Session Chairs: MCCARTHY, Blythe, Freer Sackler, Smithsonian Institution

11:15
(31-A3-S34-07) Far from the Mainland: The History and Conservation of Okinawan Ceramics (Keynote)
DANI, Anya Ruth[*1]
1. Okinawa Institute of Science & Technology, Japan

11:45
(31-A3-S34-08) Technical Spectral Imaging of a 13th Century Japanese Handscroll
CLARKE, Matthew L.[1]; ROWBERG, Kathryn L.[2]; GABRIELI, Francesca[3,4]; HARE, Andrew[1]; MCCARTHY, Blythe[*1]; DELANEY, John K.[3]
1. Department of Conservation and Scientific Research, Freer Gallery of Art and Arthur M. Sackler Gallery, USA
2. Department of Chemistry & Physics, Purdue University Northwest, USA
3. Scientific Research Department, National Gallery of Art, USA
4. Scientific Department, Rijksmuseum, Netherlands

12:15
(31-A3-S34-10) Accurate Identification of the Liquor Contained in Excavated Plum Vase
ZHU, Zhanyun[*1]; YU, Chunlei[2]
1. Institute of Culture and Heritage, Northwestern Polytechnical University, China
2. Shaanxi Provincial Institute of Archaeology, China

12:30
(31-A3-S34-11) Vitrified Hillforts: Ancient Buildings of Glass from Stone
MCCLOY, John[*1,2,3]; MARCIAL, Jose[2,3]; AHMADZADEH, Mostafa[2]; PEARCE, Carolyn[3]; SCHWEIGER, Mike[3]; WEAVER, Jamie[4]; VICENZI, Edward[5]; OGENHALL, Erik[6]; SJOBLOM, Rolf[7]; KRUGER, Albert[8]

1. Washington State University, USA
2. University of Sheffield, UK
3. Pacific Northwest National Laboratory, France
4. National Institute of Standards and Technology, USA
5. Museum Conservation Institute, Smithsonian Institute, USA
6. Arkeologerna, Geoarchaeological Laboratory, National Historical Museums, Sweden
7. Luleå University of Technology, Sweden
8. US Department of Energy, USA

■October 31 (Thu) (Room B1B) ■

35:Virtual Materials Design and Ceramic Genome

Modeling of performances

Session Chairs: UBERUAGA, Blas, Los Alamos National Laboratory, USA

8:30

(31-B1B-S35-10) Computer Simulation of Radiation Effects of GaAs/AlAs Superlattice (Invited)

XIAO, Haiyan[*1]; JIANG, Ming[1]; ZU, Xiaotao[1]
1. School of Physics, University of Electronic Science and Technology of China, China

9:00

(31-B1B-S35-11) Modeling Radiation Damage in Ceramics (Keynote)

WEBER, William[*1,2]; ZARKADOULA, Eva[2]; ZHANG, Yanwen[2,1]
1. Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN 37996, USA
2. Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA

9:30

(31-B1B-S35-12) Mechanical modeling of SiC/SiC composites via damage mechanics, difficulties and solutions. (Invited)

BARANGER, Emmanuel[*1]
1. LMT, ENS Paris-Saclay, CNRS, Université Paris-Saclay, France

10:00

(31-B1B-S35-13) Multiscale modelling approach to explain size effect in UHTCMCs

JAIN, Neraj[*1]; HYSA, Ilda[1]; GALIZIA, Pietro[2]; VINCI, Antonio[2]; KOCH, Dietmar[1]; SCITI, Diletta[2]
1. Department of Ceramic Composites and Structures, German Aerospace Centre, Germany
2. National Research Council of Italy-Institute of Science and Technology for Ceramics, Italy

(10:15) Coffee Break

Genome, informatics and machine learning

Session Chairs: WEBER, William, University of Tennessee, USA

10:30

(31-B1B-S35-14) Yet Another Way to Control Thermal Expansion to Elongate Lifetime of Environmental Barrier Coatings for CMC-based Jet Engine Turbine Blades (Invited)

YOSHIYA, Masato[*1,2]; YAMAMOTO, Shotaro[1]; SUMI, Yusuke[1]; FUJII, Susumu[1,2]
1. Department of Adaptive Machine Systems, Osaka University, Japan
2. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

11:00

(31-B1B-S35-15) Phonon Engineering in multifunctional thermal and environmental barrier coating materials (Invited)

WANG, Jingyang[*1]
1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

11:30

(31-B1B-S35-16) Defect Dynamics in Perovskite Oxide Superlattices (Invited)

XU, Haixuan[*1]
1. Department of Materials Science and Engineering, The University of Tennessee, USA

Session Chairs: TOYOURA, Kazuaki, Kyoto University, Japan

13:30

(31-B1B-S35-17) Dislocations in Inorganic Crystals as Ceramic Genome (Keynote)

MATSUNAGA, Katsuyuki[*1,2]
1. Nagoya University, Japan
2. Japan Fine Ceramics Center, Japan

14:00

(31-B1B-S35-18) Materials that Glow: discovering and designing new scintillators with machine learning (Invited)

PILANIA, Ghanshyam[1]; TALAPATRA, Anjana[1]; STANEK, Christopher R[1]; MCCLELLAN, Kenneth J[1]; BARTA, Jan[1]; WIGGINS, Brenden W[1]; HAINES, Todd J[2]; UBERUAGA, Blas P[*1]
1. Materials Science and Technology Division, Los Alamos National Laboratory, USA
2. Physics Division, Los Alamos National Laboratory, USA

14:30

(31-B1B-S35-19) Accelerated materials development enabled by collaborative materials informatics

MARTIN, Nicolas[*1]; ZHAO, Wen[1]; DI STEFANO, Davide[1]
1. Granta Design Ltd, Ansys inc., UK

14:45

(31-B1B-S35-20) Accelerated discovery of superionic conductors by practical combinatorial chemistry assisted with materials informatics

MATSUBARA, Masato[*1]; SUZUMURA, Akitoshi[1]; OHBA, Nobuko[1]; ASAHI, Ryoji[1]
1. Toyota Central R&D Labs., Inc., Japan

(15:00) Coffee Break

Session Chairs: BARANGER, Emmanuel, CNRS, France

15:15

(31-B1B-S35-21) Potential energy surface mapping by machine learning for characterizing atomic diffusion in crystals (Invited)

TOYOURA, Kazuaki[*1,2]
1. Department of Materials Science and Engineering, Kyoto University, Japan
2. RIKEN Center for Advanced Intelligence Project, Japan

15:45

(31-B1B-S35-22) Thermodynamic materials genome: The ab initio Materials Project CALPHAD database aiMP

TO BABEN, Moritz[1]; PETERSEN, Stephan[*1]; TANG, Florian[1]; ARAS, Caglayan[1]; HACK, Klaus[1]
1. GTT-Technologies, Germany

16:00

(31-B1B-S35-23) Computational design strategy for disordered complex oxides (Invited)

COOPER, Valentino R.[*1]; PITIKE, Krishna Pitike[1]; BRIDGES, Craig A.[2]
1. Materials Science and Technology Division, Oak Ridge National Laboratory, USA
2. Chemical Sciences Division, Oak Ridge National Laboratory, USA

■October 28 (Mon) (Room P) ■
18:10-20:10

Poster presentation core time
18: 10-19: 10 (Last 2 digits of presentation number are odd numbers)
19: 10-20: 10 (Last 2 digits of presentation number are even numbers)

01:Crystalline and Amorphous Transparent Optical Materials and Photonic Technologies

(28-P-S01-01) SPS conditions for fabrication of transparent alumina and effect of crystallographic orientation on mechanical properties

MATSUI, Kazuto[*1,2]; KIYONO, Hajime[1]; BYUNG-NAM, Kim[3]; SUZUKI, Tohru S.[2]
1. Dept. of Applied Chemistry, Shibaura Institute of Technology, Japan
2. Ceramics Processing Group, National Institute for Materials Science, Japan
3. Field-Assisted Sintering Group, National Institute for Materials Science, Japan

(28-P-S01-02) Manufacture and Properties of Transparent AlON Ceramics

MAO, Xiaojian[*1,2]; WANG, Shiwei[1,2]
1. Key Laboratory of Transparent Opto-functional Inorganic Materials, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

(28-P-S01-03) Study of ultraviolet penetration depth of oxide phosphor film: Pr-doped $Ca_{0.6}Sr_{0.4}TiO_3$

OSHIME, Norihiro[*1]; TAKASHIMA, Hiroshi[1]
1. National Institute of Advanced Industrial Science and Technology, Japan

(28-P-S01-05) Evaluation of thermal structural change of soda-lime-silicate glasses by ratiometric photoluminescence measurement using Eu^{3+} ion

SEINO, Jumpei[*1]; IWASAKI, Kenichiro[1]; NAKANISHI, Takayuki[1]; YASUMORI, Atsuo[1]
1. Tokyo University of Science, Japan

(28-P-S01-06) Mechanical properties of transparent ceramic MgAl2O4 spinel under different strain rates

ZHANG, Bo[1]; LIU, Ying[*1]; YU, Haoyu[1]
1. Department of Material Research, AVIC Manufacturing Technology Institute, China

(28-P-S01-07) Phase transformations of the narrow gap oxide semiconductor Cu_2ZnGeO_4 with wurtzite-derived structure in Ar atmosphere

KITA, Masao[*1]; SUZUKI, Issei[2]; WADA, Noriyuki[3]; OMATA, Takahisa[2]
1. Department of Mechanical Engineering, National Institute of Technology, Toyama College, Japan
2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
3. Department of Materials Science and Engineering, National Institute of Technology, Suzuka College, Japan

03:Advanced Structural Ceramics for Extreme Environments

(28-P-S03-01) Study of suspensions made of liquefied gas and oxide powders: application to a cryo-milling process for nuclear fuel

VAUDEZ, Stephane[*1]; ROBISSON, Anne Charlotte[2]; BROTHIER, Meryl[3]
1. CEA, DEN, MAR, DMRC, SFMA, LFC, France
2. CEA, DEN, CAD, DEC, SA3E, LCU, France
3. CEA, DEN, CAD, C2A, France

(28-P-S03-02) Joining of SiC ceramic by Si-C reaction bonding using organic resin as carbon precursor

ZHU, Yunzhou[*1]; WU, Xishi[1,2]; HUANG, Zhengren[1]
1. State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, China
2. University of Chinese Academy of Sciences, China

18:10

(28-P-S03-03) Effects of substrate temperature on morphology of erbia films deposited by flame spraying using metal-ethylenediaminetetraacetic acid complex

KOMATSU, Keiji[*1]; IKEDA, Yutaka[1]; COSTA, Takashi[1]; NAKAMURA, Atsushi[2,1]; SAITOH, Hidetoshi[1]
1. Nagaoka University of Technology, Japan
2. Chubu Chelest, Japan

(28-P-S03-04) Grain Growth and Microstructural Evolution of Spark Plasma Sintered Bulk Mullite

HATTA, Tomoyuki[*1]; IDA, Shuntaro[2]; SEKIDO, Nobuaki[2]; YOSHIMI, Kyosuke[2]
1. Graduate Student, Department of Materials Science, Tohoku University, Japan
2. Department of Materials Science, Tohoku University, Japan

(28-P-S03-05) Microstructure and Oxidation Resistance of Spark Plasma Sintered Compact of Gas-Atomized MoSiBTiC Powder

ARAI, Hayato[*1]; HATAKEYAMA, Tomotaka[1]; IDA, Shuntaro[2]; SEKIDO, Nobuaki[2]; YOSHIMI, Kyosuke[2]
1. Graduate Student, Department of Materials Science, Tohoku University, Japan
2. Department of Materials Science, Tohoku University, Japan

(28-P-S03-06) Research on the dense bulk preparation of $Ta_{0.8}Hf_{0.2}C$ solid solution and its mechanical properties

JING, Jing[*1]; GUO, Hongbo[1,2]
1. School of Materials Science and Engineering, Beihang University (BUAA), China
2. Key Laboratory of High-temperature Structural Materials & Coatings Technology (Ministry of Industry and Information Technology), Beihang University (BUAA), China

(28-P-S03-07) High Precision Measurement of Ultrahigh-Temperature Tensile Creep of 1st Generation MoSiBTiC Alloy

YANAGIYA, Ryuta[*1]; KAMATA, Shiho Yamamoto[1]; IDA, Shuntaro[2]; SEKIDO, Nobuaki[2]; YOSHIMI, Kyosuke[2]
1. Graduate Student, Department of Materials Science and Engineering, Tohoku University, Japan
2. Department of Materials Science and Engineering, Tohoku University, Japan

(28-P-S03-08) Microstructure Evolution and Elemental Diffusion Behavior of Hybrid Interface between Cr_2AlC and DD5 Single-Crystal Superalloy

LI, Jimeng[*1]; HE, Jian[1,2,3]; GUO, Hongbo[1,3]
1. School of Materials Science and Engineering, Beihang University

(BUAA), China
2. Research Institute of Frontier Science, Beihang University (BUAA), China
3. Key Laboratory of High-temperature Structural Materials & Coatings Technology (Ministry of Industry and Information Technology), Beihang University (BUAA), China

(28-P-S03-09) Low Temperature Synthesis of Single Phase Y- and Yb-Silicate

HIRAOKA, Kaoru[*1]; SHOBU, Kazuhisa[2]; INADA, Miki[3]
1. Department of molecular and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. Research Institute of Computational Thermodynamics, Inc., Japan
3. Center of Advanced Instrumental Analysis, Kyushu University, Japan

04:Symposium on Multiferroic Materials

(28-P-S04-01) h-($Lu_{0.5}In_{0.5}$)FeO_3 Room Temperature Multiferroic Ceramics with Large Polarization and Strong ME Coupling

CHEN, Xiang Ming[*1]; LIU, Mei Ying[1]; GAO, Ting Ting[1]; ZHU, Xiao Li[1]
1. School of Materials Science and Engineering, Zhejiang University, China

(28-P-S04-02) Direct observation of multiferroic structure in hexagonal $LuFeO_3$ thin film grown by PLD

IRIMOTO, Takeshi[*1]; TOKUDA, Yoshinori[1]; TOKUNAGA, Tomoharu[1]; YAMAMOTO, Takahisa[1,2]
1. Nagoya University, Japan
2. Japan Fine Ceramics Center, Japan

(28-P-S04-03) Linear magnetoelectric effect in the honeycomb magnet Mn4Nb2O9

ZHENG, Shuhan[*1]; TANG, Yongsen[1]; ZHANG, Junhu[1]; YAN, Zhibo[1]; LIN, Lin[1]; LIU, Junming[1]
1. Laboratory of Solid State Microstructures, Nanjing University, China

(28-P-S04-04) Collinear magnetic structure and multiferroicity in polar magnet Co2Mo3O8

TANG, Yongsen[*1]; WANG, Shumin[1]; LIN, Lin[1]; LI, Cheng[2,3]; ZHENG, Shuhan[1]; LI, ChuanFu[1]; ZHANG, Junhu[1]; YAN, Zhibo[1]; JIANG, Xiangping[4]; LIU, Junming[1]
1. Laboratory of Solid State Microstructures, Nanjing University, China
2. Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science Outstation at SNS, Germany
3. Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA
4. School of Materials Science and Engineering, Jingdezhen Ceramic Institute, China

(28-P-S04-05) Huge enhancement of upconversion luminescence in In^{3+} doped $Ba_{0.85}Ca_{0.15}TiO3:0.75\%Er^{3+}/x In^{3+}$ lead-free ferroelectric ceramics

GUO, Lei[*1,2]; CHEN, Ting-Wei[2,3]; ZHANG, Yuan-Yuan[4]; LUO, Lai-Hui[4]; DONG, Shuai[1]; ZHENG, Ren-Kui[2,3]
1. School of physics, Southeast University, China
2. State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
3. School of Materials Science and Engineering, Nanchang University, China
4. Department of Microelectronic Science and Engineering, Ningbo University, China

(28-P-S04-06) Chemical State Analysis of $Sr_3Co_{2-x}Zn_xFe_{24}O_{41}$ by Auger Electron Spectroscopy

KIKUCHI, Takeyuki[*1]; KOBUNE, Masafumi[1]; NAKANISHI, Makoto[2]; FUJII, Tatsuo[2]
1. University of Hyogo, Japan
2. Okayama University

(28-P-S04-07) Interface structure in multiferroic $YMnO_3$-type $ScFeO_3$ film on perovskite electrode

HAMASAKI, Yosuke[*1]; YASUI, Shintaro[2]; SHIRAISHI, Takamasa[3]; AKAMA, Akihiro[3]; KIGUCHI, Takenori[3]; TANIYAMA, Tomoyasu[2]; ITOH, Mitsuru[2]
1. National Defense Academy, Japan
2. Tokyo Institute of Technology, Japan
3. Tohoku University, Japan

(28-P-S04-08) Electric and magnetic properties in $Ni_{78}Fe_{22}/Mq_3$(M=Al, Er)/$Ni_{78}Fe_{22}$ nanoscale junction devices utilizing magnetic thin-film edges

SASAKI, Yuma[*1]; MSISKA, Robin[1,2]; MISAWA, Takahiro[1]; MORI, Sumito[1]; KOMINE, Takashi[3]; HOSHINO, Norihisa[4]; AKUTAGAWA, Tomoyuki[4]; FUJIOKA, Masaya[1]; NISHII, Junji[1]; KAIJU, Hideo[2,5]
1. Research Institute for Electronic Science, Hokkaido University, Japan
2. Faculty of Science and Technology, Keio University, Japan
3. Graduate School of Science and Engineering, Ibaraki University, Japan
4. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
5. Center for Spintronics Research Network, Keio University, Japan

05:Polymer Derived Ceramics (PDCs) and Composites

(28-P-S05-01) Electrochemical behavior of polymer-derived ceramic functionalized transition metal dichalcogenides

SOARES, Davi[1]; SINGH, Gurpreet[*1]
1. Mechanical and Nuclear Engineering Department, Kansas State University, Manhattan, USA

07:Dielectric, Piezoelectric, and Ferroelectric Materials: Advances for Emerging Applications

(28-P-S07-01) Piezoelectric responce of Mg,Nb-codoped AlN and its origin from first-principles ~ effect of Mg/Nb ratio on piezoelectric constant ~

MORI, Yuto[*1]; HIRATA, Kenji[2]; ANGGRAINI, Sri Ayu[2]; AKIYAMA, Morito[2]; UEHARA, Masato[1,2]; YAMADA, Hiroshi[1,2]
1. Kyushu University, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan

(28-P-S07-02) Preparation of Yb-doped AlN Piezoelectric Thin Films

AMANO, Yuki[*1]; UEHARA, Masato[1,2]; ANGGRAINI, Sri Ayu[2]; HIRATA, Kenji[2]; YAMADA, Hiroshi[1,2]; AKIYAMA, Morito[2]
1. Kyushu University, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan

(28-P-S07-03) Ab-initio calculation of piezoelectric constant in Mg+Me (Me=Cr, Mo, W) codoped AlN

HIRATA, Kenji[*1]; YAMADA, Hiroshi[1]; UEHARA, Masato[1]; ANGGRAINI, Sri Ayu[1]; AKIYAMA, Morito[1]
1. National Institute of Advanced Industrial Science and Technology, Japan

(28-P-S07-04) Piezoelectric property characterization of nTi-codoped-AlN thin films (n = Mg or Zn)

ANGGRAINI, Sri Ayu[*1]; UEHARA, Masato[1]; HIRATA, Kenji[1]; YAMADA, Hiroshi[1]; AKIYAMA, Morito[1]
1. National Industrial of Advanced Industrial Science and Technology, Japan

(28-P-S07-05) Spectroscopic Characterization of Polar Structures in ZnO/Ag junctions

HOSAKA, Takumi[*1,2]; OHSAWA, Takeo[1]; MONTIGAUD, Herve[3]; ISHIGAKI, Takamasa[2]; OHASHI, Naoki[1]
1. National Institute for Materials Science, Japan
2. Graduate School of Science and Engineering, Hosei University, Japan
3. Saint-Gobain CNRS NIMS International Collaboration Center, Japan

(28-P-S07-06) Surface Barrier Layer Capacitor Model in In/Nb Co-doped TiO_2 Thin Films

YASUI, Shintaro[*1]; FUJITA, Toshiki[1]; TANIYAMA, Tomoyasu[2]; ITOH, Mitsuru[1]

1. Tokyo Institute of Technology, Japan
2. Nagoya University, Japan

(28-P-S07-07) Barium Titanate Nanocrystals Solid-Solutionized with Barium Zirconate and Calcium Titanate

MATSUO, Naoki*[1]; KIBA, Kazumasa[1]; KUDOH, Junki[1]; SAITO, Jun-ichi[2]; THO, Shoichi[1]; TAKESUE, Naohisa[1]
1. Fukuoka University, Japan
2. Japan Atomic Energy Agency, Japan

(28-P-S07-08) Barium Titanate Nanocrystals Solid-Solutionized

KUDOH, Junki*[1]; KIBA, Kazumasa[1]; MATSUO, Naoki[1]; SAITO, Jun-ichi[2]; TOH, Shoichi[1]; TAKESUE, Naohisa[1]
1. Fukuoka University, Japan
2. Japan Atomic Energy Agency, Japan

(28-P-S07-09) Integration of Barium Titanate Nanocrystals with Stirring in Soft media

KIBA, Kazumasa*[1]; KUDOH, Junki[1]; MATUO, Naoki[1]; SAITO, Jun-ichi[2]; TOH, Shoichi[1]; TAKESUE, Naohisa[1]
1. Fukuoka university, Japan
2. Japan Atomic Energy Agency, Japan

(28-P-S07-10) Size dependence of piezoelectric response in (111)-oriented tetragonal Pb(Zr,Ti)O_3 nanorods

OKAMOTO, Kazuki*[1]; YAMADA, Tomoaki[1,2]; SAKATA, Osami[3]; YOSHINO, Masahito[1]; NAGASAKI, Takanori[1]
1. Department of Energy Engineering, Nagoya University, Japan
2. PRESTO, Japan Science and Technology Agency, Japan
3. Synchrotron X-ray Group and Synchrotron X-ray Station at SPring-8, National Institute for Materials Science, Japan

(28-P-S07-11) Low-temperature deposition of potassium niobate films by microwave-assisted hydrothermal process

OKURA, Masaki*[1]; SHIRAISHI, Takahisa[2]; ITO, Yoshiharu[3]; KIGUCHI, Takanori[2]; KUROSAWA, Minoru[4]; KONNO, Toyohiko[2]; FUNAKUBO, Hiroshi[3]; UCHIDA, Hiroshi[1]
1. Department of Materials and Life Sciences, Sophia University, Japan
2. Institute for Materials Research, Tohoku University, Japan
3. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan
4. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Japan

(28-P-S07-12) Fabrication of stacked metal oxide layers by chemical solution deposition for artificial leaf

ANZAI, Daiki*[1]; UCHIDA, Hiroshi[1]
1. Sophia University, Japan

(28-P-S07-13) Chemical Solution-derived Lead-free (K, Na)NbO_3 (KNN) Thin Films for Piezoelectric MEMS Device Applications

KAWAHARA, Masami*[1]; WON, Sung-Sik[2]; KINGON, Angus I.[2]; KIM, Seung-hyun[2]
1. Kojundo Chemical Lab., Co. Ltd., Japan
2. School of Engineering, Brown University, USA

(28-P-S07-14) Dielectric properties of Ba(Zr,Ti)O_3 films prepared by CSD for microwave devices

SHIMA, Hiromi*[1]; UCHIDA, Hiroshi[2]
1. National Defense Academy, Japan
2. Sophia University, Japan

(28-P-S07-15) Low cost PZT film forming process for MEMS

DOI, Toshihiro*[1]; SOYAMA, Nobuyuki[1]
1. Mitubishi Materials Corporation, Japan

(28-P-S07-16) Reactive sintering behavior of SiO_2 doped ($Bi_{0.5}Na_{0.5}$)TiO_3-$BaTiO_3$ piezoelectric ceramics

SUGANUMA, Kai*[1]; SUZUKI, Yoshikazu[2]
1. College of Engineering Sciences, University of Tsukuba, Japan
2. Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

(28-P-S07-17) Electrical Properties of Undoped $BaTiO_3$ Ceramics Fired under Various Conditions

MORI, Keita*[1]; TAKEUCHI, Nobuyuki[1]
1. Kyoto Institute of Technology, Japan

(28-P-S07-18) Fabrication and characterization of composite ceramics using Core-Shell particles by spark plasma sintering

SAEGUSA, Yuya*[1]; FUJII, Ichiro[1]; UENO, Shintaro[1]; WADA, Satoshi[1]
1. University of Yamanshi, Japan

(28-P-S07-19) Fabrication and anisotropic electric properties for oriented bulk ceramic of Li-Ta-Nb-Ti-O solid solution

SAKAMOTO, Toshiki*[1]; NAKANO, Hiromi[1]; SUZUKI, Tohru S.[2]; KAN, Akinori[3]
1. Toyohashi University of Technology, Japan
2. National Institute for Materials Science, Japan
3. Meijo University, Japan

(28-P-S07-20) Investigation of Alternating Current Poling Conditions for <110> Grain-oriented 0.85($Bi_{0.5}Na_{0.5}$)TiO_3-0.15$BaTiO_3$ Ceramics

KAWACHI, Kosuke*[1]; FUJII, Ichiro[1]; UENO, Shintaro[1]; WADA, Satoshi[1]
1. University of Yamanashi, Japan

(28-P-S07-21) Self-assembly Material Texture of $BaTiO_3$ / Piezo-Polymer Composites (1) —Composite Material Texture and Dielectric Property—

TAKEDA, Mariko*[1]; NAKATA, Yuki[1]; YAMAZAKI, Haruna[1]; YOSHINO, Kentaro[1]; MIZUKAMI, Yuka[2]; SATO, Yoshihiro[2]; ITO, Akira[3]; ABE, Satoko[1]; BAO, Yue[2]; TANIMURA, Makoto[4]; INOUE, Yasuhide[5]; KOYAMA, Yasumasa[5]; MUNAKATA, Fumio[1]
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2. Faculty of Knowledge Engineering, Tokyo City University, Japan
3. Mitsubishi Gas Chemical Co., Inc., Japan
4. Yokohama National University, Japan
5. Waseda University, Japan

(28-P-S07-22) Self-assembly Material Texture of $BaTiO_3$ / Piezo-Polymer Composites (2) —Multifractal Analysis of Material Texture—

TAKEDA, Mariko*[1]; NAKATA, Yuki[1]; YAMAZAKI, Haruna[1]; YOSHINO, Kentaro[1]; MIZUKAMI, Yuka[2]; SATO, Yoshihiro[2]; ITO, Akira[3]; ABE, Satoko[1]; BAO, Yue[2]; TANIMURA, Makoto[4]; INOUE, Yasuhide[5]; KOYAMA, Yasumasa[5]; MUNAKATA, Fumio[1]
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2. Faculty of Knowledge Engineering, Tokyo City University, Japan
3. Mitsubishi Gas Chemical Co., Inc., Japan
4. Yokohama National University, Japan
5. Waseda University, Japan

(28-P-S07-23) Effects of Element Substitution on Improper Ferroelectric $Ca_8[AlO_2]_{12}(MoO_4)_2$

MARUYAMA, Koji*[1]; NAKANO, Akitoshi[1]; TERASAKI, Ichiro[1]; TANIGUCHI, Hiroki[1]
1. Department of Physics, Nagoya University, Japan

(28-P-S07-24) The Photo-Dielectric Effect in $Ba[(Al_{0.95}Ga_{0.05})_{0.97}Zn_{0.03}]_2O_4$

MURAKAMI, Daiki*[1]; NAKANO, Akitoshi[1]; TERASAKI, Ichiro[1]; TANIGUCHI, Hiroki[1]
1. Department of Physics, Nagoya University, Japan

(28-P-S07-25) Dielectric Properties of Titanite-type $CaTi(Si_{1-x}Ge_x)O_5$: Towards Novel Functional Dielectrics

SATO, Daiki*[1]; NAKANO, Akitoshi[1]; TERASAKI, Ichiro[1]; TANIGUCHI, Hiroki[1]
1. Department of Physics, Nagoya University, Japan

(28-P-S07-26) Resistive Switching in $AlFeO_3$ and $GaFeO_3$ based Thin Film Heterostructures

RAO, Badari Narayana Aroor*[1]; HAN, Yefei[1]; YASUI, Shintaro[1];

KATAYAMA, Tsukasa[2]; ITOH, Mitsuru[1]
1. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan
2. Department of Chemistry, The University of Tokyo, Japan

(28-P-S07-27) Effect of substitution on ferroelectric characteristics, crystal and electronic structure of $0.4Bi_{0.5}K_{0.5}TiO_3$-$0.6BiFeO_3$-based ferroelectric ceramics

MAIE, Junichiro[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(28-P-S07-28) Poling Condition Dependence of KNN-based Piezoelectric Ceramics

AOYAGI, Rintaro[*1]
1. National Institute of Advanced Industrial Science and Technology

(28-P-S07-29) Phase Evolution and Piezoelectric Properties in $BiFeO_3$-$BaTiO_3$ Ceramics near Phase Boundary

GO, Su Hwan[*1]; KIM, Jeong Seog[1]; CHEON, Chae Il[1]
1. Department of Materials Science & Engineering, Hoseo University, Korea

(28-P-S07-30) Direct and Indirect measurements of Electro-caloric Effect in BNT-based Ceramics

KIM, Bit Chan[*1]; KIM, Jeong Seog[1]; CHEON, Chae Il[1]
1. Department of Materials Science & Engineering, Hoseo University, Korea

(28-P-S07-31) Structural phase transitions in *A*-site deficient perovskite oxides

TAKASE, Shogo[*1]; MIYAKE, Jinsuke[1]; YOSHIDA, Suguru[1]; TANAKA, Katsuhisa[1]; FUJITA, Koji[1]
1. Department of Material Chemistry, Kyoto University, Japan

(28-P-S07-32) In-situ Research on Environmental Effects on $BaTiO_3$ Polarization Dynamics

HE, Dongyu[1,2]; BAI, Yang[1,2]; QIAO, Lijie[*1,2]
1. Beijing Advanced Innovation Center for Materials Genome Engineering, University of Science and Technology Beijing, China
2. Insitutue for Advanced Materials and Technology, University of Science and Technology Beijing, China

(28-P-S07-33) Machine-leaning investigation on piezoelectric constants of $LiNbO_3$-type compounds

NAKAMURA, Kaoru[*1]; OHNUMA, Toshiharu[1]
1. Central Research Institute of Electric Power Industry, Japan

(28-P-S07-34) Terahertz dielectric property of fine grained $BaTiO_3$ ceramics

LIAO, YuHsun[*1]; TAKEZAWA, Shuhei[1]; TAKEDA, Hiroaki[1]; TSURUMI, Takaaki[1]; HOSHINA, Takuya[1]
1. Tokyo Institute of Technology, Japan

(28-P-S07-35) Relationship between A-site element and piezoelectric constant in Langasite-type single crystals

USUI, Haruki[*1]; HOSHINA, Takuya[1]; TSURUMI, Takaaki[1]; TAKEDA, Hiroaki[1]
1. Tokyo Institute of Technology, Japan

(28-P-S07-36) Fabrication and Evaluation of Ferroelectric Property of $K(Ta, Nb)Si_2O_7$ Single Crystals

ONUMA, Miho[*1]; TAKEDA, Hiroaki[1]; TSURUMI, Takaaki[1]; HOSHINA, Takuya[1]
1. Tokyo Institute of Technology, Japan

(28-P-S07-37) High energy density all solid capacitor with Lithium-ion conductive glass

IKUTA, Yusuke[*1]; HOSHINA, Takuya[1]; TAKEDA, Hiroaki[1]; TSURUMI, Takaaki[1]
1. Tokyo Institute of Technology, Japan

11:Advanced Powder Processing and Manufacturing Technologies

(28-P-S11-01) Observation of Internal Structure of Al_2O_3 Slurry under Shear by Optical Coherence Tomography

TAKABA, Hiroki[*1]; TATAMI, Junichi[1,2]; IIJIMA, Motoyuki[1,2]; TAKAHASHI, Takuma[2]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

(28-P-S11-02) A novel sol-gel route to synthesize $(Sr_{0.5}Ba_{0.5})Nb_2O_6$ ceramics with enhanced electrocaloric effect

CHEN, Ting[1]; WU, Shuya[*1]; LIU, Xiaoqiang[1]; CHEN, Xiangming[1]
1. Zhejiang University, China

(28-P-S11-03) Crystalline-Oriented Lanthanum Silicate Oxyapatite Ceramics Fabricated by Electrophoretic Deposition Under a Strong Magnetic Field

TAKANO, Saori[*1]; KOBAYASHI, Kiyoshi[2]; UCHIKOSHI, Tetsuo[2]; AKASHI, Takaya[1]; SUZUKI, Tohru[2]
1. Hosei University, Japan
2. National Institute for Materials Science, Japan

(28-P-S11-04) Non-firing ceramics: Effect of adsorbed water on surface activation of silica powder via ball milling treatment

NOJIRI, Ryoheii[*1]; NAKASHIMA, Yuki[1]; RAZAVI, Hadi[1]; TAKAI, Chika[2]; TANAKA, Nao[1]; FUJI, Masayoshi[1]
1. Nagoya Institute of technology, Advanced ceramics research center, Japan
2. Gifu University, Japan

(28-P-S11-05) synthesis and characterization of low dielectric constant hollow silica nanoparticles

WEN, Quanyue[*1]; RAZAVI KHOSROSHAHI, Hadi[1]; FUJI, Masayoshi[1]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

(28-P-S11-06) Fabrication of dense ceramics and their total conductivity of yttrium-stabilized lanthanum germanate oxyapatite by slip casting in a strong magnetic field

TERAI, Takaya[*1]; KOBAYASHI, Kiyoshi[1,2]; HIGUCHI, Tohru[1]; SUZUKI, Tohru S.[2]
1. Tokyo University of Science, Japan
2. National Institute for Materials Science, Japan

(28-P-S11-07) Reduction of SiO2 via mechanochemically co-milling with polyolefins

LONG, Hui[*1]; SENNA, Mamoru[2]; TAKAI, Chika[3]; KHOSROSHAHI, Hadi Razavi[1]; SHIRAI, Takashi[1]; FUJI, Masayoshi[1]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Faculty of Science and Technology, Keio University, Japan
3. Gifu University, Japan

(28-P-S11-08) Influence of Eluted Metal Ions on the Density of Green Body for Slip Casting

NAKAMURA, Kosuke[*1]; MORI, Takamasa[2,3]; ISHIDA, Naoyuki[4]
1. Graduate School of Science and Engineering, Hosei University, Japan
2. Department of Chemical Science and Technology, Faculty of Bioscience and Applied Chemistry, Hosei University, Japan
3. Hosei University Research Institute for Slurry Engineering Japan
4. Department of Applied Chemistry and Biotechnology, Okayama University, Japan

(28-P-S11-09) Evaluation of rotation behavior of multilayer graphene coated glass fibers in magnetic field via in situ three-dimensional dynamic observation

AIHARA, Ibuki[*1]; TAKAHASHI, Takuma[2]; TATAMI, Junichi[1,2]; IIJIMA, Motoyuki[1,2]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

(28-P-S11-10) Dense Ceramic Fabrication and Conductivity Measurement of Strontium doped Lanthanum Yttrium Perovskite

TSUNODA, Yuichi*1; KOBAYASHI, Kiyoshi2; HIGUCHI, Tohru1; SUZUKI, Tohru2
1. Dept. of Applied Physics, Tokyo University of Science, Japan
2. Ceramics Processing Group, National Institute for Materials Science, Japan

(28-P-S11-11) Influence of the PAA concentration on PAA/NH3 emulsion template method for synthesizing hollow silica nanoparticles

KATO, Takanori*1; NAKASHIMA, Yuki1; TAKAI, Chika2; RAZAVI-KHOSROSHAHI, Hadi1; ISHIHARA, Masahiro1; NOJIRI, Ryohei1; FUJI, Masayoshi1
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Gifu University, Japan

(28-P-S11-12) Effect of silane modification on CNTs_silica composites fabricated by a non-firing process to enhance interfacial property and dispersibility

YAKUBO, Reina*1; PENG, Bo1; TAKAI, Chika2; RAZAVI-KHOSROSHAHI, Hadi1; NAKAYAMA, Ichiro1; ISHIHARA, Masahiro1; HORI, Masahiro1; FUJI, Masayoshi1
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Gifu University, Japan

(28-P-S11-13) SiO2/TiO2 double-shell hollow particles: Fabrication and UV-Vis spectrum characterization

TANAKA, Nao*1; CHEN, Wanghui1; TAKAI, Chika2; RAZAVI KHOSROSHAHI, Hadi1; ISHIHARA, Masahiro1; NAKAYAMA, Ichiro1; YAKUBO, Reina1; FUJI, Masayoshi1; SHIRAI, Takashi1
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Gifu University, Japan

(28-P-S11-14) Influence of CaCO3 pore-forming agent on porosity and thermal conductivity of cellulose acetate materials prepared by non-solvent induced phase separation

MAEHARA, Masumi*1; SUTHABANDITPONG, Walaiporn1; TAKAI, Chika2; KHOSROSHAHI, Hadi.Razavi1; NAKAYAMA, Ichiro1; OKADA, Yuuki1; EL DIN EL SALMAWY, Montaser Sabbah3; ISHIHARA, Masahiro1; MASUDA, Keita1; FUJI, Masayoshi1
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Gifu University, Japan
3. Faculty of Petroleum and Mining Engineering, Suez University, Egypt

(28-P-S11-15) Preparation and Crystallographic Orientation of the Multiple Oxide Thin Films on the Reactive Substrates

ARAKAWA, Shuichi*1
1. Toyota Technological Institute, Japan

(28-P-S11-16) Non-firing ceramics: Surface activity improvement of silica powder to realize high density solidified body

MASUDA, Keita*1; NAKASHIMA, Yuki1; TAKAI, Chika2; NAKAYAMA, Ichiro1; HADI, Razavi-Khosroshahi1; ISHIHARA, Masahiro1; MAEHARA, Masumi1; FUJI, Masayoshi1
1. Advanced Ceramic Research Center, Nagoya Institute of Technology, Japan
2. Gifu University, Japan

(28-P-S11-17) Room-Temperature Copper Metallization by Aerosol Deposition Process for RF/Microwave Devices

KIM, Ik-Soo*1; CHO, Myung-Yeon1; LEE, Dong-Won2; OH, Jong-Min1
1. Kwangwoon University, Korea
2. Korea Testing Laboratory, Korea

(28-P-S11-18) Orientation control of rod-like $BaTiO_3$ particles prepared by hydrothermal synthesis

OZAWA, Hiroto*1,2; KIYONO, Hajime1; INADA, Miki3; SUZUKI, Tohru S2
1. Shibaura Institute of Technology, Japan
2. National Institute for Material Science, Japan
3. Kyushu University, Japan

(28-P-S11-19) One-pot synthesis of hollow silica nanoparticles using the prepared calcium carbonate by CO2 bubbling

HORI, Masahiro*1; TAKAI, Chika2; FUJIMOTO, Kyoichi1; RAZAVI-KHOSROSHAHI, Hadi1; ISHIHARA, Masahiro1; ASO, Masashi1; FUJI, Masayoshi1
1. Nagoya Institute of Technology, Japan
2. Gifu University, Japan

(28-P-S11-20) Fabrication and Characteristics of Metal/Ceramic Hybrid Composite Film via Aerosol Deposition Process

LEE, Dong-Won*1; LEE, Yeon-Sook1; CHO, Myung-Yeon2; KIM, Ik-Soo2; OH, Jong-Min2
1. Material Technology Center, Korea Testing Laboratory, Korea
2. Department of Electronic Materials Engineering, Kwangwoon University, Korea

(28-P-S11-21) Fabrication of α-Al_2O_3 Particles by Hydrothermal Method and Characterization of an Al2O3-coated PE separator for Lithium-ion Batteries

LEE, Yeon-Sook*1; KIM, Yong-Nam1; CHO, Myung-Yeon2; KIM, Ik-Soo2; OH, Jong-Min2; LEE, Dong-Won1
1. Material Technology Center, Korea Testing Laboratory, Korea
2. Department of Electronic Materials Engineering, Kwangwoon University, Korea

(28-P-S11-22) Strength evaluation of solid bridge in silica - silica particles

ASO, Masashi*1; KATO, Takanori1; NAKAYAMA, Ichirou1; TAKAI, Chika2; RAZAVI-KHOSROSHAHI, Hadi1; FUJI, Masayoshi1
1. Advanced Ceramic Research Center, Nagoya Institute of Technology, Japan
2. Gifu University,Gifu, Japan

(28-P-S11-23) Fabrication of Oxygen Separation Membrane Based on Mixed Ionic-Electronic Conductor and Its Air Separation Property

ISHII, Kento*1,2; STEVENSON, Adam J.3; TARDIVAT, Caroline3; UCHIKOSHI, Tetsuo1,2
1. National Institute for Materials Science, Japan
2. Hokkaido University, Japan
3. Saint-Gobain Research Provence, France

(28-P-S11-24) Fabrication of Aluminum Nitride Slurry Using UV Curable Resin for Stereo-Lithography

OBATA, Seizo*1; TATEISHI, Kenji1; SAITO, Shohei1; KONDO, Makoto2; YOSHIDA, Michiyuki2; SAKURADA, Osamu2
1. Gifu Prefectural Ceramics Research Institute, Japan
2. Gifu University, Japan

(28-P-S11-25) Hydrothermal synthesis of BiVO4/BiOX photocatalyst and its photocatalytic properties

MOHAMMADZADEH, Sara*1; RAZAVI-KHOSROSHAHI, Hadi1; KITANO, Sho2; YAMAUCHI, Miho2,3; FUJI, Masayoshi1
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Department of Chemistry, Kyushu University, Japan
3. International Institute for Carbon-Neutral Energy Research, Kyushu University, Japan

(28-P-S11-26) Technical enhancement on large scale production of high quality BN "nano"-slurry

YAMADA, Itsuhiko*1; SHIMODA, Kazuya2; YOSHIHARA, Hiromi2; KATO, Hiyorasu1
1. MARUKA Corporation, LTD., Japan
2. National Institute for Materials Science, Japan

(28-P-S11-27) Fabrication of Porous Alumina Granules by Spray Drying and Spray Freeze Drying

KONDO, Naoki*1; SHIMAMURA, Akihiro1; HOTTA, Mikinori1
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

(28-P-S11-28) Fabrication of alumina ceramics using granules prepared by freeze granulation

KAWAGUCHI, Shinya*1; KATO, Hayato1; TATAMI, Junichi2; KONDO, Naoki3
1. PRECI Co., Ltd., Japan
2. Yokohama National University, Japan
3. National Institute of Advanced Industrial Science and Technology, Japan

12:Novel Nanocrystal Technologies for Advanced Ceramic Materials & Devices

(28-P-S12-01) The Preparing of BaTiO3@SrTiO3 Hetergeneous Ceramics and Investigation of the Ferroelectric and High-Frequency Dielectric Properties

BIAO, He*1; FENG, Dang2
1. The key Laborary for Liquid-Solid Structure Evolution and Processing of Materials (Ministry of Education), Shangdong University, China
2. The key Laborary for Liquid-Solid Structure Evolution and Processing of Materials (Ministry of Education), Shangdong University, China

(28-P-S12-02) Nanowires embedded porous TiO_2@C nanocomposite anodes for enhanced stable lithium and sodium ion battery performance

WANG, Yu*1; LI, Na1; HOU, Chuanxin2; DANG, Feng1; WANG, Jun1
1. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China.
2. Integrated Composites Laboratory (ICL), Department of Chemical & Biomolecular Engineering, University of Tennessee, USA

(28-P-S12-03) Preparation and Properties of Barium Titanate Nanoparticles with Heterostructures

DANG, Congcong*1
1. The key Laborary for Liquid-Solid Structure Evolution and Processing of Materials(Ministry of Education), China

(28-P-S12-04) Preparation of nanostructured WO_3 photoanode films via aqueous solution process

NAGAYASU, Yuki*1; UCHIYAMA, Hiroaki2
1. Graduate School of Science and Engineering, Kansai University, Japan
2. Department of Chemistry and Materials Engineering, Kansai University, Japan

(28-P-S12-05) Preparation of $(Fe, Ni)_3(PO_4)_2{\cdot}8H_2O$ particles via an aqueous solution process

KOMATSU, Fumito*1; UCHIYAMA, Hiroaki2
1. Graduate School of Science and Engineering, Kansai University, Japan
2. Department of Chemistry, Materials and Bioengineering, Kansai University, Japan

(28-P-S12-06) Preparation of ZrO_2 Nanocomposite Film using Minimal Surface as Template

TAKAI, Rikuto*1; TAKAMI, Seiichi1
1. Nagoya University, Japan

(28-P-S12-07) Hydrothermal Synthesis of Hafnium Dioxide Nanocrystals Using Continuous Flow Reactor

YAMAMOTO, Naotake*1; TAKAMI, Seiichi1
1. Nagoya University, Japan

(28-P-S12-08) Hydrothermal Synthesis of Zinc Oxide Microrods in the Presence of Adipic Acid

NOHARA, Yumi*1; TAKAMI, Seiichi1
1. Nagoya University, Japan

(28-P-S12-09) Design of Surface Modifier to Realize Dispersion of ZrO_2 Nanoparticles in Various Solvents

KUREISHI, Keisuke*1; TAKAMI, Seiichi1
1. Nagoya University, Japan

(28-P-S12-10) Evaluate the performance of lithium-manganese oxide spinel cathodes through the high-throughput calculations

ZHANG, Weibin*1; LI, Dajian2; CHANG, KeKe3; DU, Yong4; SEIFERT, Hans2
1. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China
2. Institute for Applied Materials - Applied Materials Physics (IAM-AWP), Karlsruhe Institute of Technology (KIT), Germany
3. Engineering Laboratory of Nuclear Energy Materials, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China
4. State Key Laboratory of Powder Metallurgy, Central South University, China

(28-P-S12-11) Enlargement of Titanate Nanosheets Utilizing the Complexation Ability of Fluoride Ion

HAMAJIMA, Ami*1; AKAO, Naoya1; TAKAI, Chika1; OHYA, Yutaka1; BAN, Takayuki1
1. Department of Chemistry and Biomolecular Science Gifu University, Japan

(28-P-S12-12) Preparation of solvothermally-synthesized barium-titanate-nanocube assemblies by liquid-liquid phase separation method for dielectric applications

HATAKEYAMA, Sakuya*1; UENO, Shintaro1; FUJII, Ichiro1; WADA, Satoshi1
1. University of Yamanashi, Japan

(28-P-S12-13) Detailed observation of Pt co-catalyst morphology and dispersion on $SrTiO_3$ photocatalyst

YAMAZAKI, Reina*1; KOBAYASHI, Yoshio1; KAKIHANA, Masato2; HIGASHI, Masanobu3; ABE, Ryu4; NAKASHIMA, Kouichi1
1. Graduate School of Science and Engineering, Ibaraki University, Japan
2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
3. Advanced Research Institute for Natural Science and Technology, Osaka City University, Japan
4. Graduate school of engineering Kyoto University, Japan

(28-P-S12-14) Origin of extended UV stability of 2D atomic layer titania-based perovskite solar cells unveiled by ultrafast spectroscopy

LI, Shao-Sian*1; ANUSHA, Puliparambil Thilakan2; LI, Jia-Xing2; CHEN, Tzu-Pei3; CHEN, Chun-Wei3; OSADA, Minoru4; TSUKAGOSHI, Kazuhito5; SASAKI, Takayoshi5; YABUSHITA, Atsushi2; WU, Kaung-Hsiung2; LUO, Chih-Wei2
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3. Department of Materials Science and Engineering, National Taiwan University, Taiwan
4. Institute of Materials and Systems for Sustainability (iMaSS), Department of Materials Chemistry, Nagoya University, Japan
5. The International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science, Japan

(28-P-S12-15) Synthesis of supersaturation controlled lead sulfide quantum dots and SWIR photodiodes

LEE, JAE WOONG*1
1. Korea Institute of Industrial Technology, Korea

(28-P-S12-16) Preparation and Ferroelectric Properties of $0.7Ba_{1-x}Bi_xTiO_3$@$0.3SrTiO_3$ Core-

shell Nanocomposite
HUANG, Qishun[*1]; DANG, Feng[2]
1. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China
2. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China

(28-P-S12-17) Investigation of Charge Storage Mechanism of Ruthenium Oxide Nanosheets using a model electrode with electrochemical impedance spectroscopy
TAJI, Ryoko[*1]; MARUYAMA, Takahiro[1]; SAIDA, Takahiro[1]
1. Meijo University, Japan

(28-P-S12-18) The Ti/Ru ratio-activity relationship of $TiRuO_x$/CB electrocatalysts for oxygen reduction reaction
NIWA, Etsuko[*1]; MARUYAMA, Takahiro[1]; SAIDA, Takahiro[1]
1. Meijo University, Japan

17:Green Processing and Green Energy Materials for Sustainable Society

(28-P-S17-01) Evaluation on the stabilization of Zn/Ni/Cu in spinel forms: Low-cost red mud as an effective precursor
SU, Minhua[*1,2]; TANG, Jinfeng[2,3]; ZHANG, Hongguo[2,3]
1. Guangdong Provincial Key Laboratory of Radionuclides Pollution Control and Resources, School of Environmental Science and Engineering, Guangzhou University, China
2. Key Laboratory for Water Quality and Conservation of Pearl River Delta, Ministry of Education, School of Environmental Science and Engineering, Guangzhou University, China
3. Linköping University - Guangzhou University Research Center on Urban Sustainable Development, Guangzhou University, China.

(28-P-S17-02) High Frequency Permeability and Permittivity of Fe_3O_4 Hollow Particles
WAKAMIYA, Shisei[*1]; OTA, Toshitaka[1]; ADACHI, Nobuyasu[1]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan

(28-P-S17-03) Preparation of Fe complexes/mesoporous zeolite for oxidation of benzene with hydrogen peroxide
YAMAGUCHI, Syuhei[*1]; KOGA, Hitomu[1]; SASAKI, Makoto[1]; YAHIRO, Hidenori[1]
1. Ehime University, Japan

(28-P-S17-04) Correlation of acidity and solid-liquid ratio in ion-exchange process for layered rock-salt type $LiMn_{1/3}Ni_{1/3}Co_{1/3}O_2$
YASUMOTO, Koyo[*1]; AIMI, Akihisa[1]; SHIMONISHI, Yuta[2]; YOSHIDA, Shuhei[2]; FUJIMOTO, Kenjiro[1]
1. Tokyo University of Science, Japan
2. DENSO CORPORATION, Japan

(28-P-S17-05) Synthesis and Material Characteristic of Li1.3Al0.3Ti1.7(PO4)3 Solid Electrolyte for Lithium-ion Battery by Sol-Gel Process
LIAO, Jie-Yu[1]; I-MING, I-MING[*1,2]
1. Department of Chemical Engineering and Materials Science, Yuan Ze University, Taiwan
2. Hierarchical Green-Energy Materials Research Center, National Cheng Kung University, Taiwan

(28-P-S17-06) Ion Selective Reduction Characteristics of Prussian Blue Nanoparticles with Controlled Particle Size
YAMADA, Jun[*1]; TSUBOI, Natsuka[1]; KOJIMA, Takashi[1]; UEKAWA, Naofumi[1]
1. Chiba University, Japan

(28-P-S17-07) Synthesis of high-swelling Na-type bentonite from Ca-type bentonite by soft solution chemical process
KITANO, Yuta[*1]; MAKINOSE, Yuki[1]; MIYAZAKI, Hidetoshi[1]
1. Graduate School of Natural Science and Technology, Shimane University, Japan

(28-P-S17-08) Microstructure and Ferroelectric Properties of Barium Titanate Prepared by Liquid Phase Method
KAKO, Chisato[*1]; HASHIMOTO, Hideki[1]; GOTO, Tomoyo[1]; CHO, Sunghun[1]; SEKINO, Tohru[1]
1. Osaka University, Japan

(28-P-S17-09) Improvement of photoelectric activity of Ta_3N_5 /Ti photoanode by electrical oxidation and reduction treatment
OKADA, Yuki[*1]; ITO, Mizuki[1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji Univerity, Japan

(28-P-S17-10) Evaluation of NaTaO3 photocatalyst synthesized from various route by time-resolved absorption and emission spectroscopy
LU, Yao[*1]; YAMAKATA, Akira[2]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan
2. Graduate School of Engineering, Toyota Technological Institute, Japan

(28-P-S17-11) Fabrication and evaluation of novel Z scheme $LaTiO_2N$/Ag, Au/HEP composites
SETA, Dai[*1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan

(28-P-S17-12) Evaluation of the effectiveness of Cd stabilization by a low-temperature sintering process with kaolinite/mullite addition
TANG, Jinfeng[*1,3,4]; SU, Minhua[1,2]; ZHANG, Hongguo[1,3]
1. Key Laboratory for Water Quality and Conservation of Pearl River Delta, Ministry of Education, School of Environmental Science and Engineering, Guangzhou University, China
2. Guangdong Provincial Key Laboratory of Radionuclides Pollution Control and Resources, School of Environmental Science and Engineering, Guangzhou University, China
3. Linköping University - Guangzhou University Research Center on Urban Sustainable Development, Guangzhou University, China
4. Nuclear Chemistry and Industrial Material Recycling, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Sweden

(28-P-S17-13) Electrical and Microstructure Analysis of Cobalt-Free $Ba_{0.5}Sr_{0.5}Nb_xFe_{1-x}O_{3-\delta}$ Cathode Materials
WU, Yu-Chuan[*1]; LIAN, Wei-Cheng[1]; LEI, Chien-Ming[2]
1. Institute of Materials Science and Engineering, National Taipei University of Technology, Taiwan
2. Department of Chemical and Materials Engineering, Chinese Culture University, Taiwan

(28-P-S17-14) Cyanosilylation of benzaldehyde with TMSCN over LaMO3 (Al, Mn, Fe, and Co) perovskite-type oxide catalyst
GOUDA, Rikito[*1]; YAMAGUCHI, Syuhei[1]; YAHIRO, Hidenori[1]
1. Department of Materials Science and Biotechnology, Graduate School of Science and Engineering, Ehime University, Japan

(28-P-S17-15) Development of Porous Electrode in Solid Oxide Fuel Cells by the Flame Spray
SUN, Pai-Kai[1]; YANG, Yung-Chin[*1]
1. Institute of Materials Science and Engineering, National Taipei University of Technology, Taiwan

(28-P-S17-17) Enhancement of Fluorescence Properties by Coexisting Lithium Ion for Ag-exchanged LTA Zeolite
YAHARA, Keisuke[*1]; JOHAN, Erni[1]; ITAGAKI, Yoshiteru[1]; AONO, Hiromichi[1]
1. Ehime University, Japan

(28-P-S17-18) SiO2 coated ZnO Nanoparticle as an Inorganic UV Absorber
IHARA, Taiki[*1]; SUGIYAMA, Naota[1]
1. Corporate Research Materials Laboratory, 3M Japan Limited, Japan

(28-P-S17-19) Synthesis of Sb-doped SnO_2 gel and sol from ethylene glycol solution of metal chlorides

UCHIDA, Yusuke[*1]; KOJIMA, Takashi[1]; UEKAWA, Naofumi[1]
1. Chiba University, Japan

(28-P-S17-20) Electrochemical Detection of Biomolecules with High Selectivity using Fluorine-doped Tin Oxide (FTO) Electrodes

KATAYANAGI, Yuta[*1]; HASHIMOTO, Rina[2]; KUBOTA, Yuta[2]; MATSUSHITA, Nobuhiro[2]
1. Department of Technology Education, Faculty of Education, Gunma University, Japan
2. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan

(28-P-S17-21) Stabilizing cadmium into aluminate and ferrite structures: Effectiveness and leaching behavior

SU, Minhua[1,2]; ZHANG, Hongguo[*1,3]
1. Key Laboratory for Water Quality and Conservation of Pearl River Delta, Ministry of Education, School of Environmental Science and Engineering, Guangzhou University, China
2. Guangdong Provincial Key Laboratory of Radionuclides Pollution Control and Resources, School of Environmental Science and Engineering, Guangzhou University, China
3. Linköping University - Guangzhou University Research Center on Urban Sustainable Development, Guangzhou University, China

(28-P-S17-22) Mechanical properties of amorphous SiC thin films on Al_2O_3 ceramic substrates

SHIOTA, Tadashi[*1,2]; TANIYA, Daiki[1]; AKIYAMA, Miho[2]; TAKENAKA, Yuka[2]; OMIYA, Yuya[1,2]; IKOMA, Toshiyuki[3]; FUJII, Masahiro[1,2]
1. Graduate School of Natural Science and Technology, Okayama University, Japan
2. Department of Mechanical and Systems Engineering, Okayama University, Japan
3. Department of Material Science and Engineering, Tokyo Institute of Technology, Japan

(28-P-S17-23) Development of method for fabricating protective layer on Ta_3N_5 photoanode by roll press method

IIJIMA, Mai[*1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan

(28-P-S17-24) Liquid-phase Atomic Layer Deposition of Crystalline Hematite Without Post-growth Annealing

TANIGUCHI, Asako[*1]; SUZUKI, Yoshikazu[2]
1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Japan
2. Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

(28-P-S17-25) Improvement of tunneling magneto-dielectric effect for Co-Al_2O_3 nano-composite films by optimization of preparation conditions

KIMURA, Moe[*1]; CAO, Yang[1]; AOKI, Hanae[1]; KOBAYASHI, Nobukiyo[2]; OHNUMA, Shigehiro[1,2]; MASUMOTO, Hiroshi[1]
1. FRIS, Tohoku University, Japan
2. Research Institute for Electromagnetic Materials, Japan

(28-P-S17-26) Modification of Perpendicular Magnetic Anisotropy in Nickel Ferrite Thin Films

TAKASHIMA, Keisuke[*1]; DEBNATH, Nipa[1]; KAWAGUCHI, Takahiko[1]; SAKAMOTO, Naonori[1]; SHINOZAKI, Kazuo[2]; SUZUKI, Hisao[1]; WAKIYA, Naoki[1]
1. Department of Electronics and Materials Science, Shizuoka University, Japan
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(28-P-S17-27) Preparation of (K, Na) NbO_3 thin film by chemical solution deposition with chemical modification

YOSHIDA, Kazuki[*1]; TANAKA, Sadaaki[1]; HIRAI, Shigeto[2]; MATUDA, Takeshi[2]; SAKAMOTO, Naonori[3]; SUZUKI, Hisao[3]; OHNO, Tomoya[2]
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2. School of Earth, Energy and Environmental Engineering, Kitami Institute of Technology, Japan
3. Research Institute of Electronics, Shizuoka University, Japan

(28-P-S17-28) Supercritical fluid deposition of hafnium oxide thin films for dielectric application

KAWASHIMA, Hiroaki[1]; UCHIDA, Hiroshi[*1]
1. Sophia University, Japan

(28-P-S17-29) Fabrication of GaN-Ta_3N_5 multi layered photoanode by electrochemical anodization and deposition

KANASUGI, Takafumi[*1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan

(28-P-S17-30) Electrochromic properties of Sn-doped WO_3 films by low-speed dip-coating technique

NAKAMURA, Yoshiki[*1]; UCHIYAMA, Hiroaki[2]
1. Graduate School of Science and Engineering, Kansai University, Japan
2. Department of Chemistry, Materials and Bioengineering, Kansai University, Japan

(28-P-S17-31) Fabrication of $SrTiO_3$ potoelectrode from powder by using of electrophoresis and roll press method

SAKATA, Naoyuki[*1]; ITO, Mizuki[1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan

(28-P-S17-32) Spin-spray Conditions to Fabricate $Cu_{2-x}O$-Fe_2O_3 composite films for Anodic Material of Supercapacitor

LIN, Hwai-En[1]; UEMURA, Michihiko[1]; KATAYANAGI, Yuta[2]; KUBOTA, Yuta[1]; MATSUSHITA, Nobuhiro[*1]
1. Department of Material Science and Engineering, Tokyo Institute of Technology, Japan
2. Department of Technology Education, Faculty of Education, Gunma University, Japan

(28-P-S17-33) Synthesis and Evaluation of Sphere like CuO Films on Conductive Substrates

NISHIDA, Ryo[*1]; WATANABE, Tomoaki[1]
1. Department of Applied Chemistry, Meiji University, Japan

19:Mixed Anion Compounds for Novel Functionalities

(28-P-S19-01) Thermal decomposition and re-nitridation reaction of SrO excess perovskite-type oxynitride $Sr_{1+x}TaO_{2+x}N$

MIYAMOTO, Daiki[*1]; MASUBUCHI, Yuji[2]; HIGUCHI, Mikio[2]
1. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
2. Faculty of Engineering, Hokkaido University, Japan

(28-P-S19-02) Synthesis and crystal structure of novel carbodiimide compound $(Ba_{0.9}Sr_{0.1})CN_2$

MIYAZAKI, Suzuka[*1]; MASUBUCHI, Yuji[2]; HIGUCHI, Mikio[2]
1. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
2. Faculty of Engineering, Hokkaido University, Japan

(28-P-S19-03) Molten Salt Synthesis of Chalcogenide Spinels $MgIn_2S_{4-2x}Se_{2x}$ (x=0 and 0.5)

ITO, Hiroaki[*1]; MIURA, Akira[2]; ROSERO-NAVARRO, Nataly Carolina[2]; MIZUGUCHI, Yoshikazu[3]; GOTO, Yosuke[3]; KUROIWA, Yoshihiro[4]; MORIYOSHI, Chikako[4]; TADANAGA, Kiyoharu[2]
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2. Faculty of Engineering, Hokkaido University, Japan
3. Department of physics, Tokyo Metropolitan University, Japan
4. Department of Physical Science, Hiroshima University, Japan

(28-P-S19-04) Preparation of new apatite-type oxynitrides $Pr_xSi_3O_{(3x-3y+12)/2}N_y$ in silica tubes

KAWAHARA, Toshiki[*1]; TEZUKA, Keitaro[1]; TOKUHARA,

Yoshimi[1]; MURATA, Tomoharu[1]; SHAN, Yue Jin[1]
1. Graduate School of Engineering, Utsunomiya University, Japan

(28-P-S19-05) Synthesis of new layered iridium oxyfluorides by a topochemical reaction method and their physical properties

KURAMOCHI, Kenta[*1,2]; SHIMANO, Tomohito[1,2]; NISHIO, Taichiro[1]; OKABE, Hirotaka[3]; HORIGANE, Kazumasa[4]; AKIMITSU, Jun[4]; UCHIYAMA, Tomoki[5]; UCHIMOTO, Yosiharu[5]; OGINO, Hiraku[2]
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2. Superconducting Electronics Group, AIST, Japan
3. Institute of Materials Structure Science/J-PARC Center, KEK, Japan
4. Research Institute for Interdisciplinary Science, Okayama University, Japan
5. Graduate School of Human and Environmental Studies, Kyoto University, Japan

(28-P-S19-06) Synthesis and Electrical Properties of Fluoride Ion Conductor Using Fluoride Sulfide

TACHIBANA, Shintaro[*1]; YAMAGISHI, Hirona[2]; ORIKASA, Yuki[1]
1. Graduate School of Life Sciences, Ritsumeikan University, Japan
2. SR Center, Ritsumeikan University, Japan

(28-P-S19-07) Crystal structure and ionic conductivity of the argyrodite-type Li_6SbS_5I solid electrolytes

KIMURA, Takuya[*1]; HOTEHAMA, Chie[1]; SAKUDA, Atsushi[1]; TATSUMISAGO, Masahiro[1]; HAYASHI, Akitoshi[1]
1. Osaka Prefecture University, Japan

(28-P-S19-08) Structural Stability of $Ba_{1-(1/2)x}TiO_{3-x}(OH)_x$ Fabricated by Hydrothermal Process

FURUTA, Masahiro[*1]; UTIMULA, Keishu[2]; HONGO, Kenta[3]; MAEZONO, Ryo[4]; HAYASHI, Katsuro[5]; INADA, Miki[6]
1. Department of Molecular and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. School of Materials Science, Japan Advanced Institute of Science and Technology, Japan
3. Research Center for Advanced Computing Infrastructure, Japan Advanced Institute of Science and Technology, Japan
4. School of Information Science, Japan Advanced Institute of Science and Technology, Japan
5. Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan
6. Center of Advanced Instrumental Analysis, Kyushu University, Japan

(28-P-S19-09) Synthesis of oxy-hydroxides $Ba(Zn_xNb_{1-x})O_{3-\delta-y}(OH)_{2y}$ by water-vapor annealing

ARAI, Kenji[*1]; SUGANAMI, Kyohei[1]; SAITO, Miwa[1]; INADA, Miki[2]; HAYASHI, Katsuro[3]; MOTOHASHI, Teruki[1]
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2. Center of Advanced Instrumental Analysis, Kyusyu University, Japan
3. Department of Applied Chemistry, Faculty of Engineering, Kyusyu University, Japan

(28-P-S19-10) Thermal behaviors and chemical composition of $La_{0.5}Sr_{2.5}FeCoO_{7-\delta-z}(OH)_{2z}{\cdot}wH_2O$ studied by simultaneous thermogravimetry and desorbed-gas analysis

KAWAHARA, Yoshiteru[*1]; SAITO, Miwa[1]; MOTOHASHI, Teruki[1]
1. Department of Materials and Life Chemistry, Faculty of Engineering, Kanagawa University, Japan

(28-P-S19-11) Metal-Hydride Reduction of Primitive Perovskites $BaM_{1-x}Y_xO_{3-x/2}$ (M = Zr, Sn, Ce)

OGAWA, Yuya[*1]; HASEGAWA, George[1]; AKANATSU, Hirofumi[1]; FUJII, Kotaro[2]; YASHIMA, Masatomo[2]; INADA, Miki[3]; MATSUISHI, Satoru[4]; HAYASHI, Katsuro[1]
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2. Department of Chemistry, Tokyo Institute of Technology, Japan
3. Center of Advanced Instrumental Analysis, Kyushu University, Japan
4. Material Research Center for Element Strategy, Tokyo Institute of Technology, Japan

(28-P-S19-12) Crystal structure and magnetic properties of melilite-related compounds

KUREHA, Miki[*1]; DOI, Yoshihiro[2]; ENDO, Takashi[3]; WAKESHIMA, Makoto[2]; HINATSU, Yukio[2]
1. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
2. Department of Chemistry, Faculty of Science, Hokkaido University, Japan
3. Faculty of Engineering, Hokkaido University, Japan

(28-P-S19-13) Synthesis, crystal structure and magnetic properties of Se-substituted melilites

UCHIDA, Yu[*1]; ENDO, Takashi[2]; DOI, Yoshihiro[3]; WAKESHIMA, Makoto[3]; HINATSU, Yukio[3]
1. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan
2. Faculty of Engineering, Hokkaido University, Japan
3. Department of Chemistry, Faculty of Science, Hokkaido University, Japan

(28-P-S19-14) Research on thermal decomposition reaction of $Ce_xNd_{2-x}CuO_4$ under reductive condition, and on superconductivity of $Ce_xNd_{2-x}CuO_{4-y}$ without thermal decomposition

KUSANO, Hiroshi[*1]; KOUNO, Hiroya[1]; OKA, Kengo[2]; WATANABE, Mizuki[1]; HIGASHIHARA, Takumi[1]; OH-ISHI, Katsuyoshi[1]
1. Department of Applied Chemistry, Faculty of Science and Engineering, Chuo University, Japan
2. Department of Applied Chemistry, Faculty of Science and Engineering, Kinki University, Japan

(28-P-S19-15) Theoretical Studies on Mixed-Anion Effect on Li^+ Migration in Spinel $Li_4Ti_5O_{12}$ Framework

HARA, Kenjiro[*1]; SHIIBA, Hiromasa[3]; ZETTSU, Nobuyuki[2,3]; TESHIMA, Katsuya[2,3]
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2. Department of Materials Chemistry, Faculty of Engineering, Shinshu University, Japan
3. Research Initiative for Supra-Materials, Shinshu University, Japan

(28-P-S19-16) Flux Synthesis of Layered Perovskite Oxyhalide Bi_4NbO_8Cl Photocatalyst for Efficient Water Oxidation Under Visible Light

OGAWA, Kanta[*1]; NAKADA, Akinobu[2]; SUZUKI, Hajime[1]; TOMITA, Osamu[1]; YAMAKATA, Akira[3]; SAEKI, Akinori[4]; KAGEYAMA, Hiroshi[1]; ABE, Ryu[1]
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2. Department of Applied Chemistry, Chuo University, Japan
3. Graduate School of Engineering, Toyota Technological Institute, Japan
4. Department of Applied Chemistry, Osaka University, Japan

(28-P-S19-17) Influence of Crystallographic Orientation on the Activity of Photoelectrochemical Water Splitting with $CaTaO_2N$

WAKASUGI, Takuto[*1]; HIROSE, Yasushi[1]; NAKAO, Shoichiro[1]; KUMAGAI, Hiromu[2]; MAEDA, Kazuhiko[2]; HASEGAWA, Tetsuya[1]
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22:Layered Double Hydroxides: Science and Design of Binding Field with Charged Layers

(28-P-S22-01) Design of Water-extended Reaction Space By Use of Acetate-intercalated Layered Yttrium Hydroxide Catalyst

HARA, Takayoshi[*1]; NAKANISHI, Hikaru[1]; ICHIKUNI, Nobuyuki[1]; SHIMAZU, Shogo[1]
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(28-P-S22-02) Gas barrier properties of organic-inorganic hybrid gas barrier membranes using surface modified layered double hydroxide

KURAOKA, Koji[*1,2]; MIKI, Kazumi[1]
1. Graduate School of Maritime Sciences, Kobe University, Japan
2. Research Center for Membrane and Film Technology, Kobe University, Japan

(28-P-S22-03) Oxygen Reduction Reaction Activity of Ni-Fe-Mn-Based Layered Double Hydroxides

IWAI, Yu[1]; MIURA, Akira[1]; ROSERO-NAVARRO, Nataly Carolina[1]; TADANAGA, Kiyoharu[*1]; CETINKAYA, Tugrul[2]; FRANCO, Alejandro A.[3]; APARICIO, Mario[4]
1. Hokkaido University, Japan
2. Sakarya University, Turkey
3. Université de Picardie Jules Verne, France
4. Glass and Ceramic Institute, CSIC, Spain

(28-P-S22-04) Synthesis of a High-Entropy Layered Hydroxide

MIURA, Akira[*1]; ISHIYAMA, Sho[2]; KUBO, Daiju[2]; ROSERO-NAVARRO, Nataly Carolina[1]; TADANAGA, Kiyoharu[1]
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2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan

(28-P-S22-05) Crystal Nucleation and Growth of Mg-Al Layered Double Hydroxide (Mg/Al = 2) under Hydrothermal Conditions

SUMIYOSHI, Hidenobu[*1]; FUJIMURA, Takuya[1]; MORIYOSHI, Chikako[2]; SASAI, Ryo[1]
1. Graduate School of Natural Science and Technology, Shimane University, Japan
2. Graduate School of Science, Hiroshima University, Japan

(28-P-S22-06) Synthesis of chiral layered metal hydroxide nanoparticles and evaluation of enantioselective adsorption

KOYAMA, Akihiro[*1]; TOKUDOME, Yasuaki[1]; OKADA, Kenji[1]; MURATA, Hidenobu[1]; NAKAHIRA, Atsushi[1]; TAKAHASHI, Masahide[1]
1. Osaka Prefecture University, Japan

(28-P-S22-07) Fablication of aqueous ammonia fuel cell using Mg-Al layered double hydroxides as solid electrolyte

ISHIYAMA, Sho[*1]; ROSERO-NAVARRO, Nataly Carolina[2]; MIURA, Akira[2]; TADANAGA, Kiyoharu[2]
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2. Faculty of Engineering, Hokkaido University, Japan

(28-P-S22-08) Gd-complex incorporated layered double hydroxide for multimodal contrasting agent

JUNG, Sang-yong[*1]; KIM, Hyoung-Jun[1]; GWAK, Gyeong-Hyeon[2]; KIM, Se Na[3]; CHOY, Young-Bin[3,4]; LEE, Jun Young[5]; PARK, Jeong Hoon[5]; OH, Jae-Min[1]
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2. Beamline Research Division, Pohang Accelerator Laboratory, Pohang University of Science and Technology, Korea
3. Institute of Medical & Biological Engineering, Medical Research Center, Seoul National University, Korea
4. Interdisciplinary Program in Bioengineering, College of Engineering, Seoul National University, Korea
5. Radiation Instrumentation Research Division, Korea Atomic Energy Research Institute, Korea

(28-P-S22-09) Encapsulation of Zingiber officinale extract with layered double hydroxide for preservation of antioxidant activity

LEE, Su-Bin[*1]; KIM, Hyoung-Jun[1]; OH, Jae-Min[1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Korea

(28-P-S22-10) Exfoliation of Fe-containing layered double hydroxide utilizing redox reaction

KIM, Nam-Ho[*1]; GWAK, Gyeong-Hyeon[2]; OH, Jae-Min[1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Korea
2. Beamline Research Division, Pohang Accelerator Laboratory, Pohang University of Science and Technology, Korea

(28-P-S22-11) Thermodynamic and kinetic study for anion adsorption on layered double hydroxide depending on particle size

KO, Su-Joung[*1]; SHIN, Jinseop[2]; OH, Jae-Min[1]
1. Department of Energy and Materials Engineering, Dongguk University-Seoul, Korea
2. Eco laboratory, SK chemicals life Science Biz, Korea

(28-P-S22-12) Preparation and catalytic property of NiO catalyst from layered double hydroxide (LDH) nanosheets

KAMESHIMA, Yoshikazu[*1]; KUWAHARA, Seiji[1]; NISHIMOTO, Shunsuke[1]; MIYAKE, Michihiro[1]
1. Okayama University, Japan

(28-P-S22-13) Effect of Humidity on Rehydration of Layered Double Hydroxides in Air

NAKAMURA, Takato[*1]; MURATA, Hidenobu[1]; TOKUDOME, Yasuaki[1]; NAKAHIRA, Atsushi[1]
1. Department of Materials Science, Osaka Prefecture University, Japan

(28-P-S22-14) CO_2 release behaviors of layered double hydroxide nanoparticles in repeated adsorption-desorption cycles

KAWASHIMO, Mio[*1]; OKUDA, Ayaka[1]; KATAGIRI, Kiyofumi[1]; INUMARU, Kei[1]
1. Hiroshima University, Japan

23:Geopolymer, Building Materials and Low Environmental Loading Construction Materials

(28-P-S23-01) Effect of Ca addition on preparation of inorganic cured material from waste glass

KAMESHIMA, Yoshikazu[*1]; NAKAHIRA, Takuro[1]; NISHIMOTO, Shunsuke[1]; MIYAKE, Michihiro[1]
1. Okayama University, Japan

26:Ceramic Materials for Nuclear Energy

(28-P-S26-01) Property measurement of CaF_2

TSUCHIMOCHI, Ryota[*1]; MATSUMOTO, Taku[1,2]; WHITE, Joshua T.[2]; HIROOKA, Shun[1]; MCCLELLAN, Kenneth J.[2]; KATO, Masato[1]
1. Japan Atomic Energy Agency, Japan
2. Los Alamos National Laboratory, USA

(28-P-S26-02) Experimental study for cold-cap reaction in glass melter for waste vitrification

SUGAWARA, Toru[*1]; OHIRA, Toshiaki[1]; OOWAKU, Kouhei[2]; KANEHIRA, Norio[2]
1. Akita University, Japan
2. Japan Nuclear Fuel Limited, Japan

(28-P-S26-03) Oxygen potential and defect equilibria in $UO_{2\pm x}$

WATANABE, Masashi[1]; KATO, Masato[*1]
1. Japan Atomic Energy Agency, Japan

(28-P-S26-04) Investigation of MoO_3 solubility in different types of slow-cooled high-level waste glass

OHIRA, Toshiaki[*1]; ADACHI, Maki[2]; SUGAWARA, Toru[1]
1. Graduate School of Engineering Science, Akita University, Japan
2. Faculty of International Resource Science, Akita University, Japan

(28-P-S26-05) Enthalpy measurement and evaluation of heat capacity on PuO_2

MORIMOTO, Kyoichi[*1]; OGASAWARA, Masahiro[2]
1. Japan Atomic Energy Agency, Japan
2. Inspection development company Ltd., Japan

(28-P-S26-06) Drying experiments of CeO_2 granules produced using wet granulator

ISHII, Katsunori[*1]; SEGAWA, Tomoomi[1]; KAWAGUCHI, Koichi[1]
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(28-P-S26-07) High Rate Characteristics of $LiCoO_2$ Modified with $BaTiO_3$ Nanocube

YAMANAKA, Ryoji[*1]; TERANISHI, Takashi[1]; MIMURA, Ken-ichi[2]; KISHIMOTO, Akira[1]; KATO, Kazumi[2]
1. Okayama University, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

(28-P-S26-08) The Effect of A-Site Cation on the Formation of Brannerite (ATi_2O_6, A = U, Th, Ce) Ceramic Phases in a Glass-Ceramic Composite System

DIXON WILKINS, Malin Christian John[*1]; MADDRELL, Ewan[2]; STENNETT, Martin[1]; HYATT, Neil[1]
1. Immobilisation Science Laboratory, Department of Materials Science and Engineering, The University of Sheffield, UK
2. National Nuclear Laboratory, UK

(28-P-S26-09) Effect of oxygen potential on sintering behavior of CeO_2

WATANABE, Masashi[*1]; TANAKA, Kosuke[1]; KATO, Masato[1]
1. Japan Atomic Energy Agency, Japan

(28-P-S26-10) Preparation of self-oxidized film of metallic zirconium in water vapor atmosphere

TAKEMURA, Rio[*1]; SASAKI, Kazuya[1]; NIWA, Eiki[2]; KONDO, Masatoshi[3]
1. Graduate School of Science and Technology, Hirosaki University, Japan
2. Graduate School of Engineering, Mie University, Japan
3. Laboratory for Advanced Nuclear Energy, Institute of innovative research, Tokyo Institute of Technology, Japan

27:Synthesis and Processing of Materials using Electric Currents and Pressures

(28-P-S27-01) Gradient ceramics sintering using Spark Plasma Sintering

B. SWEIDAN, Faris[*1]; RYU, Ho Jin[1]
1. Department of Nuclear and Quantum Engineering, KAIST, Yuseong-gu, Daejeon, Republic of Korea

(28-P-S27-02) Optimization of AC electric field for flash sintering of 3YSZ

KURACHI, Tsuyoshi[*1]; TOKUNAGA, Tomoharu[1]; YAMAMOTO, Takahisa[1,2]
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2. Japan Fine Ceramics Center, Japan

(28-P-S27-03) Fluorescence of flashed $3Y_2O_3$-ZrO_2 sintered compacts

YAMASHITA, Yudai[*1]; TOKUNAGA, Tomoharu[1]; YOSHIDA, Hidehiro[2]; YAMAMOTO, Takahisa[1,3]
1. Nagoya University, Japan
2. Tokyo University, Japan
3. Japan Fine Ceramics Center, Japan

(28-P-S27-04) Bending Strength and Fracture Toughness of Sintered Cr_2O_3 Bulks

KOSUGI, Takahiro[*1]; NANKO, Makoto[1]
1. Nagaoka University of Technology, Japan

(28-P-S27-05) Microstructure and mechanical properties of binderless WC-Si_3N_4 ceramics

NINO, Akihiro[*1]; KANEKO, Masaki[1]; SEKINE, Takashi[2]; SUGIYAMA, Shigeaki[2]
1. Department of Materials Science and Engineering, Graduate School of Engineering Science, Akita University, Japan
2. Akita Industrial Technology Center, Japan

(28-P-S27-06) Densification and Thermal Conductivity of SUS316/AlN Whisker Composites Processed by Spark Plasma Sintering

KOBAYASHI, Ryota[*1]; ISHINO, Tatsuhiro[1]; TAKASE, Kazuya[1]; HORIBE, Takeru[1]; TEJIMA, Akihito[1]; HARATA, Koichi[2]
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2. Tohoku University, Japan

(28-P-S27-07) Effect of Mo_2C, TaC and ZrC addition on mechanical properties of TiC-SiC ceramics

SEKINE, Takashi[*1]; NINO, Akihiro[2]; SUGAWARA, Yasushi[1]; SUGIYAMA, Shigeaki[1]; TAIMTSU, Hitoshi[2]
1. Akita Industrial Technology Center, Japan
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(28-P-S27-08) Joining of SiC ceramics by the flash-bonding technique: Reactivity and wettability of borosilicate glass with SiC ceramics

YOSHITAKE, Takuro[*1]; KITAYAMA, Mikito[1]
1. Fukuoka Institute of Technology, Japan

(28-P-S27-09) Synthesis of GdS_x ($0.68 \leq x \leq 1.2$) by Reaction Sintering in Pulse Electric Current Sintering Method and Its Properties

NHU BIEN, TRAN[*1]; HIRAI, Shinji[2]; KURODA, Akie[1]; KUZUYA, Toshihiro[2]; NAKAMURA, Eiji[2]
1. Graduate School of Engineering, Muroran Institute of Technology, Japan
2. Research Center for Environmentally Friendly Materials Engineering, Muroran Institute of Technology, Japan

(28-P-S27-10) Facile Synthesis of MoS_2 Cathode for Water Splitting Catalyst Using Electrochemical Reduction Under Hydrothermal Condition

KOBAYASHI, Hiroaki[*1]; KATAHIRA, Shusuke[1]; NAKAYASU, Yuta[2]; HONMA, Itaru[1]
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
2. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan

28:Photo-functional Inorganic Materials

(28-P-S28-01) Photoluminescence and crystal structure of new phosphor of Al, P doped Ca_2SiO_4: Eu^{2+}

KAMIMOTO, Konatsu[*1]; NAKANO, Hiromi[1]
1. Toyohashi University of Technology, Japan

(28-P-S28-02) Annealing effects on phase compositions and PL properties of P-doped Ca_2SiO_4 phosphors

ANDO, Shota[*1]; KAMIMOTO, Konatsu[1]; NAKANO, Hiromi[1]; HIRAMATSU, Yuya[2]; FUKUDA, Koichiro[2]; MICHIUE, Yuichi[3]; HIROSAKI, Naoto[3]
1. Toyohashi University of Technology, Japan
2. Nagoya Institute of Technology, Japan
3. National Institute for Materials Science, Japan

(28-P-S28-03) New Sol-gel Method for Synthesis of Dy-doped Yttrium Disilicate Phosphor not from TEOS but Sodium Silicate Solution

YAMAGATA, Chieko[*1]; MORAIS, Vinicius Ribas[1]; MELLO-CASTANHO, Sonia Regina Homem[1]
1. Materials Science and Technology Center, Nuclear and Energy Research Institute, Brazil

(28-P-S28-04) Synthesis and photoluminescence of new red phosphor for Mn^{4+} doped Li-Ta-Ti-O solid solution

MAEDA, Masashi[*1]; KAMIMOTO, Konatsu[1]; NAKANO, Hiromi[1]
1. Toyohashi University of Technology, Japan

(28-P-S28-05) Deposition of white-light-emitting cesium metavanadate ($CsVO_3$) films

MIMARU, Yu[*1]; MIYAZAKI, Hidetoshi[1]; SUZUKI, Hisao[2]; OTA, Toshitaka[3]
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2. Shizuoka University, Japan
3. Nagoya Institute of Technology, Japan

(28-P-S28-06) Photoluminescence properties of sol—gel-derived transparent silica—$(Tb,Ce)PO_4$ glass-ceramics

IWASAKI, Rena[*1]; KAJJIHARA, Koichi[1]
1. Tokyo Metropolitan University, Japan

(28-P-S28-07) Enhanced Persistent Luminescence Properties of Ba_3SiO_5:Eu Orange Phosphor by Phosphorus Co-Doping

YOO, J. H.[1]; HUR, M.G.[2]; YOON, D.H.[*1,2]
1. School of Advanced Materials Science & Engineering, Sungkyunkwan University, Korea
2. SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU) , Korea

(28-P-S28-08) Photoluminescence of sol—gel-derived transparent silica—(Gd,Pr)PO_4 glass-ceramics under excitation with a KrCl excimer lamp

NAKAGAWA, Ryosui[*1]; KAJIHARA, Koichi[1]
1. Tokyo Metropolitan University, Japan

(28-P-S28-09) Luminescence Investigation of Manganese-doped Magnesium Stannate Films

TSAI, Mu-Tsun[1]; YEN, Bo-Wen[*1]
1. National Formosa University, Taiwan

(28-P-S28-10) Optical Characteristics of $SrAl_2O_4$:Eu^{2+}, Dy^{3+} Phosphors Studied by Excitation Spectra of Persistent Luminescence

MURAYAMA, Yuna[*1]; MATSUI, Kazunori[1]
1. Department of Industrial Chemistry, Graduate School of Engineering, Kanto Gakuin University, Japan

(28-P-S28-11) Composite of Fluorescein-doped Silica Gel and $Sr_2MgSi_2O_7$:Eu^{2+} Persistent Phosphor

HANDA, Shunsuke[*1]; MURAMATSU, Mina[2]; MATSUI, Kazunori[1]
1. Department of Industrial Chemistry, Graduate School of Engineering, Kanto Gakuin University, Japan
2. College of Science and Engineering, Kanto Gakuin University, Japan

(28-P-S28-12) Novel Highly Efficient Blue-Emitting SrHfSi2O7:Eu2+ Phosphor: a Potential Color Converter for WLEDs and FEDs

ZHANG, Qiang[*1]; WANG, Yuhua[2]
1. Key Laboratory of Special Function Materials and Structure Design, Ministry of Education, Department of Materials Science, School of Physical Science and Technology, Lanzhou University, China
2. Key Laboratory of Special Function Materials and Structure Design, Ministry of Education, Department of Materials Science, School of Physical Science and Technology, Lanzhou University, China

(28-P-S28-13) Facile synthesis of color-tunable CuInS2 and CuInS2/ZnS core/shell quantum dots with high quantum yields: structure, optical properties

ZHOU, Yunpeng[*1]; WANG, Yuhua[2]
1. Department of Materials Science, School of Physical Science and Technology, Lanzhou University, China
2. Department of Materials Science, School of Physical Science and Technology, Lanzhou University, China

(28-P-S28-14) Synthesis and optical properties of red-emitting A_2MI_6 scintillators (A = K, Rb and Cs, M = Zr and Hf)

KODAMA, Shohei[*1]; KUROSAWA, Shunsuke[2]; OHNO, Maki[1]; YAMAJI, Akihiro[1]; YOSHINO, Masao[1]; SATO, Hiroki[2]; OHASHI, Yuji[2]; KAMADA, Kei[2,3]; YOKOTA, Yuui[2]; YOSHIKAWA, Akira[1,2,3]
1. Institute for Materials Research, Tohoku University, Japan
2. New Industry Creation Hatchery Center, Tohoku University, Japan
3. C&A Corporation, Japan

(28-P-S28-15) Temperature Dependent Photoluminescence of Heat-treated Titanium Oxide Powders

KUROKI, Yuichiro[*1]; SAWA, Makito[1]
1. Salesian Polytechnic, Japan

(28-P-S28-16) Quantitative Determination of Effective Mn^{4+} Concentration and its Influence on Photoluminescence Efficiency of Deep-red emission in Li_2TiO_3:Mn^{4+}

HASEGAWA, Takuya[*1,2]; NISHIWAKI, Yoshinori[3]; FUJISHIRO, Fumito[4]; KAMEI, Shinnosuke[5]; UEDA, Tadaharu[1,2]
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3. Faculty of Education, Kochi University, Japan
4. Faculty of Science and Technology, Kochi University, Japan
5. College of Industrial Technology, Nihon University, Japan

(28-P-S28-17) Effect of Boron on the Long Afterglow Characteristics of $SrAl_2O_4$:Eu^{2+}, Dy^{3+} Phosphor

OTA, Saori[*1]; TAKEUCHI, Nobuyuki[1]
1. Kyoto Institute of Technology, Japan

(28-P-S28-18) Long Afterglow Characteristics of Eu^{2+}, Dy^{3+} co-doped $SrAl_2O_4$ Fired under Various Conditions

MIYAMOTO, Koyomi[*1]; TAKEUCHI, Nobuyuki[1]
1. Kyoto Institute of Technology, Japan

(28-P-S28-19) Characterization of Ag-doped Zeolite with Various Kinds of Frameworks for Rare-Earth Free Phosphors

MINAMI, Yuya[*1]; MURATA, Hidenobu[1]; TOKUDOME, Yasuaki[1]; YOSHIDA, Kaname[2]; ATSUSHI, Nakahira[1]
1. Department of Materials Science, Osaka Prefecture University, Japan
2. Nanostructures Research Lab, Japan Fine Ceramics Center, Japan

(28-P-S28-20) Persistent luminescence properties of ZrO_2 annealed under different oxygen partial pressure

SAWAMURA, Kenji[*1]; IWASAKI, Kenichiro[1]; NAKANISHI, Takayuki[1]; IWAKURA, Fumitaka[2]; NAKAJIMA, Yasushi[2]; YASUMORI, Atsuo[1]
1. Tokyo University of Science, Japan
2. Daiichi Kigenso Kagaku Kogyo Co., Japan

(28-P-S28-21) Deep Red Luminescence of Cr^{3+} in Fluorine-doped Lithium Aluminate

KAMADA, Yuki[*1]; KOMINAMI, Hiroko[2]; HARA, Kazuhiko[3]; KAKIHANA, Masato[4]; MATSUSHIMA, Yuta[1]
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3. Research Institute of Electronics, Shizuoka University, Japan
4. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

(28-P-S28-22) Influence of Additional Doping of Divalent Ions on Emission Intensity of Mn-doped $CaAl_{12}O_{19}$

SAGAYAMA, Musashi[*1]; ZAFARI, Umar[2]; SUBHONI, Mekhrdod[2,3]; BRIK, Mikhail[4]; YAMAMOTO, Tomoyuki[1,3,5]
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3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan
4. Institute of Physics, University of Tartu, Estonia
5. Institute of Condensed-Matter Science, Waseda University, Japan

(28-P-S28-23) Dependence of Excitation Wavelength on the Photoluminescence Spectra of Mn-doped $Mg_2A_{1-x}B_xO_4$

TOGASHI, Yuki[*1]; ZAFARI, Umar[2]; SUBHONI, Mekhrdod[2,3]; BRIK, Mikhail[4]; YAMAMOTO, Tomoyuki[1,3,5]
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4. Institute of Physics, University of Tartu, Estonia
5. Institute of Condensed-Matter Science, Waseda University, Japan

(28-P-S28-24) Change in Up-Conversion Emission Intensity of Rare-Earth Doped $CaZrO_3$ by Additional Na Doping

NISHIDA, Takuma*[1]; BRIK, Mikhail[2]; YAMAMOTO, Tomoyuki[1,3,4]
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2. Institute of Physics, University of Tartu
3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan
4. Institute of Condensed-Matter Science, Waseda University, Japan

(28-P-S28-25) Synthesis, crystal structure, and photoluminescence properties of Ce-doped garnet-type $Ca_2(Y,Gd)Sn_2Al_3O_{12}$

SASAKI, Takuya*[1]; IWAI, Takayoshi[1]; NIWA, Ken[1]; HASEGAWA, Masashi[1]
1. Nagoya university, Japan

(28-P-S28-26) Fabrication and evaluation of luminescence characteristics of AlN whiskers doped with Fe, Mg, and MnO

OGAWA, Mako*[1]; ANDO, Naoki[1]; KOBAYASHI, Ryota[1]
1. Tokyo City University, Japan

(28-P-S28-27) Effect of intercalation on photoluminescence properties of hexagonal boron nitride

TSUJIMURA, Takuya*[1]; UCHINO, Takashi[1]
1. Kobe Univ., Japan

(28-P-S28-28) Temperature dependence of excitonic stimulated emission from micrometer-thick MgZnO films

FUJII, Shusuke*[1]; ADACHI, Yutaka[2]; UCHINO, Takashi[1]
1. Kobe University, Japan
2. National Institute for Material Science, Japan

(28-P-S28-29) Synthesis and Characterization of $(Li_{1-x}Na_x)_2MnO_3$ as Environmentally Friendly Red Pigments

KUSUKAMI, Kohei*[1]; OKA, Ryohei[2]; MASUI, Toshiyuki[3,4]
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2. Graduate School of Engineering, Tottori University, Japan
3. Faculty of Engineering, Tottori University, Japan
4. Center for Research on Green Sustainable Chemistry, Tottori University, Japan

(28-P-S28-30) Novel Inorganic Orange Pigments Based on $BiFeWO_6$

TAKEMURA, Akari*[1]; SHOBU, Yusuke[1]; OKA, Ryohei[2]; MASUI, Toshiyuki[3,4]
1. Graduate School of Sustainability Science, Tottori University, Japan
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3. Faculty of Engineering, Tottori University, Japan
4. Center for Research on Green Sustainable Chemistry, Tottori University, Japan

(28-P-S28-31) Synthesis and Characterization of $Zn_{1-x}Mg_xO$ Fine Particles for Sunscreen

KATAOKA, Nao*[1]; YONEZAWA, Taichi[1]; WATANABE, Mizuki[4]; MASUI, Toshiyuki[2,3]
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3. Center for Research on Green Sustainable Chemistry, Tottori University, Japan
4. Faculty of Science and Engineering, Chuo University, Japan

(28-P-S28-32) Synthesis and Color Evaluation of Ta^{5+}-doped Bi_2O_3

SHOBU, Yusuke*[1]; OKA, Ryohei[2]; MASUI, Toshiyuki[3,4]
1. Graduate School of Sustainability Science, Tottori University, Japan
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4. Center for Research on Green Sustainable Chemistry, Tottori University, Japan

(28-P-S28-33) Fabrication of iron oxide-based UV region photochromic composite films

YOSHIDA, Yusuke*[1]; MIYAZAKI, Hidetoshi[1]; MAKINOSE, Yuki[1]; SUZUKI, Hisao[2]; OTA, Toshitaka[3]
1. Shimane University, Japan
2. Shizuoka University, Japan
3. Nagoya Institute of Technology, Japan

(28-P-S28-34) Enhanced sensitivity of photo-activated gas sensor on formaldehyde using porous SnO_2/TiO_2 core-shell structure driven by gas flow thermal evaporation

CHANG, Hyeon-Kyung*[1,2]; CHO, Deok-Hyun[1,2]; KIM, Sungjin[1,2]; KIM, Hyun-Jong[1]; LEE, Ho-Nyun[1]; PARK, Tae Joo[2]; PARK, Young Min[1]
1. Surface Technology Group, Korea Institute of Industrial Technology (KITECH), Republic of Korea
2. Department of Materials Science and Chemical Engineering, Hanyang University, Republic of Korea

(28-P-S28-35) Preparation and Solar Cell Characterization of Au Nanoparticles-Loaded Titania Film by Electrophoretic Deposition Process

YATAGAWA, Yuki*[1]; HAMAGAMI, Jun-ichi[1]
1. Kanto Gakuin University, Japan

(28-P-S28-36) Single crystal faraday rotators for laser machinery

SHIMAMURA, Kiyoshi*[1]; VILLORA, Encarnacion G.[1]
1. National Institute for Materials Science, Japan

(28-P-S28-37) Synthesis and Structural Control of Tio2 Hollow Particles Toward Photocatalytic Degradation of Organics

JIANG, Xinxin*[1]; SHAO, Wenhao[1]; KHOSROSHAHI, Hadi Razavi[1]; TAKAI, Chika[2]; FUJI, Masayoshi[1]
1. Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
2. Faculty of Engineering, Department of Chemistry and Biomolecular Science, Gifu University, Japan

(28-P-S28-38) Sugar-assisted Noncovalent delamination of Carbon Nitride Nanosheets for Enhanced Photocatalytic Performance

LIU, Wei*[1]; YANASE, Takashi[1]; NAGAHAMA, Taro[1]; SHIMADA, Toshihiro[1]
1. Division of Applied Chemistry, Faculty of Engineering, Hokkaido University, Japan

(28-P-S28-39) Preparation and Photocatalytic Activities of Solid Solutions $SrFe_{12-x}Ga_xO_{19}$

TAMURA, Kazuya*[1]; TEZUKA, Keitaro[1]; ITO, Chihiro[1]; TASAKI, Ayane[1]; SHAN, Yue Jin[1]
1. Graduate School of Engineering, Utsunomiya University, Japan

(28-P-S28-40) Modifying thermometric parameters by means of band gap engineering

SOJKA, Malgorzata*[1]; RAMALHO, Joao F. C. B.[2]; BRITES, Carlos D. S.[2]; CARLOS, Luis D.[2]; ZYCH, Eugeniusz[1]
1. Faculty of Chemistry, University of Wrocław, Poland
2. Physics Department and CICECO, Universidade de Aveiro, Portugal

31:Porous Ceramics: From Innovative Processing to Advanced Applications and Functionalities

(28-P-S31-01) Effect of Basalt Fiber Addition on Properties of Foam Glass

KIM, Eun Seok*[1]; SONG, Ohsung[1]
1. UNIVERSITY OF SEOUL, Korea

(28-P-S31-02) Synthesis of mesoporous silica under high hydrostatic pressure

SATO, Riku*[1]; LIU, Zhendong[1]; TAN, Che[1]; YONEZAWA, Yasuo[1]; IYOKI, Kenta[1]; OKUBO, Tatsuya[1]; WAKIHARA, Toru[1]
1. The University of Tokyo, Japan

(28-P-S31-03) Lamellar Pore Structure and Mechanical Properties of Porous SiBCN Ceramics: Effects of Solid Loadings

YANG, Zhihua[*1,2,3]; LIAO, Xingqi[1,2]; WANG, Gaoyuan[1,2]; JIA, Dechang[1,2,3]; ZHOU, Yu[1,2]
1. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, China
2. Key Laboratory of Advanced Structrual-Functional Integration Materials & Green Manufacturing Technology, Harbin Institute of Technology, China
3. State Key Laboratory of Advanced Welding and Joining, Harbin Institute of Technology, China

(28-P-S31-04) Rapid synthesis of spherical porous silica nanoparticles by using tannic acid

DOHSHI, Satoru[*1]; MINE, Shinya[2]; HORIUCHI, Yu[2]; MATSUOKA, Masaya[2]
1. Osaka Research Institute of Industrial Science and Technology, Japan
2. Graduate School of Engineering, Osaka Prefecture University, Japan

(28-P-S31-05) Synthesis of Nanoporous Layered Titanate Nanosheets and Application to Reverse Osmosis (RO) Membrane

YAO, Fangyi[*1]; LI, Yuanju[2]; FENG, Qi[3]
1. Faculty of Engineering and Design, Kagawa University, Japan
2. Faculty of Engineering and Design, Kagawa University, Japan
3. Faculty of Engineering and Design, Kagawa University, Japan

(28-P-S31-06) Humidity dependence of liquid water condensed in Hierarchical Nano-porous layer glass

TABATA, Erika[*1]; USHIODA, Yuki[1]; ITO, Takumi[1]; FUJIMA, Takuya[1,2]
1. Faculty of Engineering, Tokyo City University, Japan
2. Advanced Research Laboratries, Tokyo City University, Japan

(28-P-S31-07) Nanotube Array-Based Multiferroic Nanocomposite Films Fabricated by Liquid Phase Process

KAWAMURA, Go[*1]; TAN, Wai Kian[1]; MUTO, Hiroyuki[1]; MATSUDA, Atsunori[1]
1. Toyohashi University of Technology, Japan

(28-P-S31-08) Kinetic analysis for photodecomposition of CH_3CHO gas after saturated adsorption on mesoporous silica-titania

HIRATA, Shingo[*1]; INADA, Miki[2]; HOJO, Junichi[3]
1. Department of Molecular and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. Center of Advanced Instrumental Analysis, Kyushu University, Japan
3. Faculty of Engineering, Kyushu University, Japan

(28-P-S31-09) Formation of Fe@C core-shell nanoparticles for Fe-air battery and the effect of sulfide addition on its performance

TAN, Wai Kian[*1]; ASAMI, Kenta[2]; KAWAMURA, Go[2]; MUTO, Hiroyuki[1,2]; MATSUDA, Atsunori[2]
1. Institute of Liberal Arts & Sciences, Toyohashi University of Technology, Japan
2. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Japan

(28-P-S31-10) Porous SiC Ceramics with Excellent Thermal Insulation and High Mechanical Strength

MALIK, Rohit[1]; KIM, Young-Wook[*1]
1. Department of Materials Science and Engineering, University of Seoul, Korea

(28-P-S31-11) Ion-exchange property of amorphous aluminosilicates prepared by modified co-precipitation method

HIKICHI, Naomichi[*1]; IYOKI, Kenta[1]; OKUBO, Tatsuya[1]; WAKIHARA, Toru[1]
1. The University of Tokyo, Japan

(28-P-S31-12) Fabrication and characterization of tantalum (oxy) nitride photonic crystals with visible light photocatalytic activity

FUJISAKA, Ai[*1]; HIRAYAMA, Natsumi[1]; RICHARDO, PETER, Lewi[1,2]; MURAI, Kei-ichiro[1]; MORIGA, Toshihiro[1]; WATERHOUSE, I.N., Geoffrey[3]
1. Tokushima University, Japan
2. National Taiwan University of science and Technology, Taiwan
3. University of Auckland, New Zealand

(28-P-S31-13) Processing and Mechanical Properties of Carbon Monolith

UKIZUKA, Akihiro[*1]; JIN, Yoshiki[1]; ARAI, Yutaro[2]; INOUE, Ryo[3]; KOGO, Yasuo[2]
1. Graduate student Material Science and Technology, Tokyo University of Science, Japan
2. Material Science and Technology, Tokyo University of Science, Japan
3. Mechanical Engineering, Tokyo University of Science,, Japan

(28-P-S31-14) Adsorption property and photocatalytic activity of WO_3 composite mesoporous silica

INOUE, Aya[*1]; HIRATA, Shingo[1]; INADA, Miki[2]; HOJO, Junichi[3]
1. Department of Molecular and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
2. Center of Advanced Instrumental Analysis, Kyushu University, Japan
3. Faculty of Engineering, Kyushu University, Japan

33:Multifunctional Coatings for Structural, Energy and Environmental Applications JFCA/ADCAL and Cross-sectoral Research cooperation of Ceramic Coating support Symposia

(28-P-S33-01) Nano etching of SiC using fluorine gas

NAMIE, Masanari[*1]; KIM, Jae-Ho[1]; NISHIMURA, Fumihiro[1]; YONEZAWA, Susumu[1]
1. University of Fukui, Japan

(28-P-S33-02) Influence of Yb_2SiO_5 on mechanical properties and thermal conductivity of Ytterbium-Silicate-Mullite composites

CHEN, Wenbo[*1,2]; XIAO, Jie[1,2]; HE, Wenting[1,2]; GUO, Hongbo[1,2]; XU, Huibin[1,2]
1. School of Materials Science and Engineering, Beihang University, China
2. Key Laboratory of High-temperature Structural Materials &Coatings Technology (Ministry of Industry and Information Technology), China

(28-P-S33-03) Columnar Structured YSZ Coatings Deposited by Low-Power PS-PVD

SHI, Jia[*1]; WEI, Liangliang[1]; XU, Huibin[1,2]; GUO, Hongbo[1,2]
1. School of Materials Science and Engineering, Beihang University, China
2. Key Laboratory of High-Temperature Structure Materials and Protective Coatings, Ministry of Industry and Information Technology, Beihang University, China

(28-P-S33-04) Phase Stability of Yttria Stabilized Zirconia Coatings Deposited by Advanced Coating Processes

MATSUMOTO, Akihiro[*1,2]; MATSUBAYASHI, Yasuhito[2]; SHAHIEN, Mohammed[2]; SUZUKI, Masato[3]; YUMOTO, Atsushi[4]; SHINODA, Kentaro[2]; AKEDO, Jun[5]
1. Department of Materials Science and Engineering, Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan
2. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan
4. Department of Materials Science and Engineering, College of Engineering, Shibaura Institute of Technology, Japan
5. Advanced Coating Technology Research Center, National

Institute of Advanced Industrial Science and Technology (AIST), Japan

(28-P-S33-05) Effect of Difference in Alumina Particle Size on the Development of Microstructure and Texture of Dense Alumina Coating for Advanced EBCs

HASHIMOTO, Soma[*1]; KIMURA, Kyonosuke[2]; HASEGAWA, Makoto[3]; TANAKA, Makoto[4]; KITAOKA, Satoshi[4]; KAGAWA, Yutaka[5]
1. Department of Mechanical Engineering, Materials Science, and Ocean Engineering, Graduate School of Engineering Science, Yokohama National University, Japan
2. Department of Systems Integration, Graduate School of Engineering, Yokohama National University, Japan
3. Division of Systems Research, Faculty of Engineering, Yokohama National University, Japan
4. Japan Fine Ceramics Center, Japan
5. Katayanagi Advanced Research Laboratories, Tokyo University of Technology, Japan

(28-P-S33-06) Statistical Evaluation of Mechanical Properties of Thermally Sprayed Ceramic Coatings by Nano-Indentation Method

SANAMI, Kosuke[*1,2]; YUMOTO, Atsushi[3]; SHINODA, Kentaro[2]; AKEDO, Jun[4]
1. Department of Materials Science and Engineering, Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. Department of Materials Science and Engineering, College of Engineering, Shibaura Institute of Technology, Japan
4. National Institute of Advanced Industrial Science and Technology (AIST), Japan

(28-P-S33-07) Insulating and Thermal Properties of Al_2O_3 Film by Aerosol Deposition

AOYAGI, Rintaro[*1]; TSUDA, Hiroki[1]; AKEDO, Jun[1]
1. National Institute of Advanced Industrial Science and Technology, Japan

(28-P-S33-08) Selective Deposition of $MoSi_2$ Thin Films on Sapphire Substrate by Aerosol Deposition Method

AKAHORI, Takumi[*1]; SATO, Yuuki[1]; YOSHIKADO, Shinzo[1]
1. Graduate School of Electrical and Electronic Engineering, Doshisha University, Japan

(28-P-S33-09) Fabrication and Evaluation of Oxide High Temperature Superconductors $Bi_2Sr_2Ca_2Cu_3O_y$ Thin Films by Aerosol Deposition

WAKITA, Akihisa[*1]; MORI, Daisuke[1]; SATO, Yuuki[1]; YOSHIKADO, Shinzo[1]
1. Doshisha University, Japan

(28-P-S33-10) Spectroscopic Measurements of RF Plasma Flow for Hybrid Aerosol Deposition

SAITO, Hiroki[*1]; MATSUBAYASHI, Yasuhito[1]; SHINODA, Kentaro[1]; AKEDO, Jun[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

(28-P-S33-11) Development of high-temperature oilless pressure sensors using TiC_xO_y piezoresistive films

KAKEHI, Yoshiharu[*1]; YAMADA, Yoshiharu[1]; KONDO, Yusuke[1]; OZAKI, Tomoatsu[1]; OGURI, Taizo[1]; SATOH, Kazuo[1]
1. Osaka Research Institute of Industrial Science and Technology, Japan

(28-P-S33-12) Nitridation of Al_2O_3-TiO_2 thin film doped with PVP by sol-gel method

WATANABE, Yutaro[*1]; BAN, Takayuki[1]; TAKAI, Chika[1]; OHYA, Yutaka[1]; IBARAKI, Yasuhiro[2]
1. Graduate School of Natural Science and Technology, Gifu University, Japan
2. Gifu Prefectural Industrial Technology Center, Japan

(28-P-S33-13) One step electrochemically reduced-deposited rGO/Pd hybrids for improved supercapacitor applications

YOUSSRY, Sally M.[*1,3]; EL-HALLAG, Ibrahim S.[1]; EL-NAHASS, Marwa N.[2]; ABDEL-GALEIL, Mohamed M.[1,3]; KUMAR, Rajesh[3]; MATSUDA, Atsunori[3]
1. Analytical and Electrochemistry Research Unit, Department of Chemistry, Faculty of Science, Tanta University, Egypt
2. Department of Chemistry, Faculty of Science, Tanta University, Egypt
3. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Japan

(28-P-S33-14) Synthesis of aluminum titanate from boehmite and properties of sintered bodies

HAGIWARA, Shota[*1]; OHTA, Yasuhiro[2]; KIDO, Kenji[2]; BAN, Takayuki[1]; TAKAI, Chika[1]; OHYA, Yutaka[1]
1. Graduate School of Natural Science and Technol,Gifu University, Japan
2. KAWAI LIME INDUSTRY Co.,Ltd, Japan

(28-P-S33-15) Fast and facile microwave-assisted synthesis of cobalt oxide-reduced graphene oxide hybrids as electrode materials for enhanced hybrid supercapacitor

KUMAR, Rajesh[*1]; MATSUDA, Atsunori[1]
1. Toyohashi University of Technology, Japan

(28-P-S33-16) High gas permeability of nano-dispersed, zirconia-crosslinked silicone membranes

SELYANCHYN, Roman[*1]; SELYANCHYN, Olena[1]; FUJIKAWA, Shigenori[1]
1. International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan

(28-P-S33-17) Preparation of Amorphous α-GeS_2 Films with Low Carbon Contamination for Sulfide Based Anode in Lithium Ion Battery Application

BALOH, Pavlo[*1]; HOLOMB, Roman[1,2]; KONDRAT, Oleksandr[1]; VOROKHTA, Mykhailo[3]; VELTRUSKA, Katerina[3]; MATOLIN, Vladimir[3]; SELYANCHYN, Roman[4]; MITSA, Volodymyr[1]
1. Department of Solid State Electronics, Uzhhorod National University, Ukraine
2. Wigner Research Centre for Physics, Hungarian Academy of Sciences, Hungary
3. Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University, Czech Republic
4. International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan

■October 29 (Tue) (Room P (Exhibition Hall)) ■

18:10-20:10

Poster presentation core time
18: 10-19: 10 (Last 2 digits of presentation number are odd numbers)
19: 10-20: 10 (Last 2 digits of presentation number are even numbers)

02:Solid Oxide Fuel Cells and Hydrogen Technologies

Cooperation ; Fuel Cell Development Information Center, National Institute of Advanced Industrial Science and Technology (AIST)

(29-P-S02-01) Effects of substitution on average and local structures of lanthanum silicate based oxide ion conductor

UEHARA, Takuya[*1]; KITAMURA, Naoto[1]; ISHIDA, Naoya[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S02-02) Local structural change in $Ce_{1-x}La_xO_{2-\delta}$ solid electrolytes

LIU, Xue[*1]; MINATO, Ryunosuke[1]; OTANI, Yasumasa[1]; HATAI, Kengo[1]; MURAI, Kei-ichiro[1]; MORIGA, Toshihiro[1]; MORI, Masashi[2]
1. Tokushima University, Japan
2. Central Research Institute of Electric Power Industry, Japan

(29-P-S02-03) Roles of Oxide Ion Vacancies and Covalency to Explain Chemical Expansion Difference between Yttrium doped Strontium Cerate and Zirconate

FUJISAKI, Takaya[*1]; STAYKOV, Aleksandar[1]; JING, Yuhang[2]; LEONARD, Kwati[1]; ALURU, Narayan[2]; MATSUMOTO, Hiroshige[1,3]
1. International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan
2. Department of Mechanical Science and Engineering, University of Illinois at Urbana−Champaign, United States
3. Next-Generation Fuel Cell Research Center (Next-FC), Kyushu University, Japan

(29-P-S02-04) Power generation characteristics of Solid Oxide Fuel Cell fueled by Nitrogenous Compound

MORIKAWA, Ryoichi[*1]; SASAKI, Tatsuyoshi[1]; OHYAGI, Shinsuke[1]; WAKABAYASHI, Takashi[1]
1. KRI, Inc., Japan

(29-P-S02-05) Surface reaction kinetics of dry reforming of methane on Ni/Al_2O_3 catalyst at low-temperature using an in-situ stagnation-flow reactor

BAE, Yonggyun[*1]; HONG, Jongsup[1]
1. School of Mechanical Engineering, Yonsei University, South Korea

(29-P-S02-07) Ru impregnated Ni-YSZ Anode for Ammonia Fueled Solid Oxide Cells

FUTAGAMI, Hiroyuki[*1]; ITAGAKI, Yoshiteru[1]; YAHIRO, Hidenori[1]
1. Department of Materials Science and Biotechnology, Graduate School of Science and Engineering, Ehime University, Japan

(29-P-S02-08) Performance Improvement of M-Doped SrFeO Symmetric Electrode for Electrolyte Supported SOFCs

WOO, Sang-Kuk[*1]; KIM, Tae Woo[1]; KIM, Sun-Dong[1]; KWAK, Minjoon[1]; SEO, Doo-Won[1]; HWANG, Hyo Jung[1]; CHOI, Hyun-Jong[1]
1. Korea Institute of Energy Research, Japan

(29-P-S02-09) Numerical Analysis of Planar-type SOFC Performance Based on Modified Exchange Current Density Equation

MORI, Kouki[*1]; TAKINO, Keisuke[1]; TACHIKAWA, Yuya[1,2,3]; SHIRATORI, Yusuke[1,2,3,4]; TANIGUCHI, Shunsuke[2,3,4]; SASAKI, Kazunari[1,2,3,4,5]
1. Kyushu University Department of Hydrogen Energy Systems, Japan
2. Kyushu University Next-Generation Fuel Cell Research Center (NEXT-FC), Japan
3. Kyushu University Center of Coevolutionary Research for Sustainable Communities, Japan
4. Kyushu University International Research Center for Hydrogen Energy, Japan
5. Kyushu University International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Japan

(29-P-S02-10) Performance Analysis of SOFCs Based on the Distribution of Relaxation Times

USHIJIMA, Rei[*1]; IWANAGA, Yoshihiro[1]; TACHIKAWA, Yuya[1,2,3]; SHIRATORI, Yusuke[1,2,3,4]; TANIGUCHI, Shunsuke[2,3,4]; SASAKI, Kazunari[1,2,3,4,5]
1. Kyushu University Department of Hydrogen Energy Systems, Japan
2. Co-Evolutionary Research for Sustainable Communities, Japan
3. Next-Generation Fuel Cell Research Center (NEXT-FC), Japan
4. International Research Center for Hydrogen Energy, Japan
5. International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Japan

(29-P-S02-11) Fabrication of anode supported SOFCs by selective and low-energy microwave sintering

ITO, Shin[*1]; SUDA, Seiichi[1]
1. Department of Engineering, Shizuoka University, Japan

(29-P-S02-12) First-principles Calculations of Conduction Mechanism of Interstitial Oxide Ions in Apatite-Type Neodymium Silicates

OGURA, Yusuke[*1,2]; YOKOI, Tatsuya[2]; MATSUNAGA, Katsuyuki[2]; TOYOURA, Kazuaki[3]
1. TOHO GAS Co., Ltd, Japan
2. Nagoya University, Japan
3. Kyoto University, Japan

(29-P-S02-13) Long-term Stabilities for Solid Oxide Electrolysis Cells

OSADA, Norikazu[*1]; KAMEDA, Tsuneji[1]; ISHIYAMA, Tomohiro[2]; SAKAI, Takaaki[2]; YAMAJI, Katsuhiko[2]; KATO, Tohru[2]
1. Toshiba Energy Systems & Solutions Corporation, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan

(29-P-S02-14) Phase Relationship in the Quasi-Ternary $LaO_{1.5}$-SiO_2-NiO System at 1573 K

NISHIMOTO, Yuzo[*1]; KOBAYASHI, Kiyoshi[2]; AKASHI, Takaya[1]; SUZUKI, Tohru S.[2]
1. Hosei University, Japan
2. National Institute for Materials Science, Japan

(29-P-S02-15) Microwave synthesis of Ir nanocatalysts supported on Sb-doped tin oxide for oxygen evolution reaction

SONG, Hyeon-Yong[1]; LEE, Jeon-Ryang[1]; PARK, Jae-Cheol[1]; KIM, Tae-Won[*1]
1. Korea Institute of Industrial Technology, Korea

(29-P-S02-16) Application of metal hydride for hydrogen separation and purification from ammonia-nitrogen-hydrogen mixture gas

JUNG, Kwangjin[*1]; KIM, Jong Won[1]; JEONG, Seong Uk[1]; KANG, Kyoung Soo[1]; LEE, Pyoung Jong[1]; PARK, Chu Sik[1]
1. Hydrogen Laboratory, New and Renewable Energy Institute, Korea Institute of Energy Research (KIER), Korea

(29-P-S02-17) Measurement of longitudinal and lateral thermal conductivity of a pelletized hydrogen storage alloy-graphite composite

PARK, Chu Sik[*1]; KIM, Jong Won[1]; JEONG, Seong Uk[1]; KANG, Kyoung Soo[1]; JUNG, Kwangjin[1]; LEE, Pyoung Jong[1]
1. Hydrogen Laboratory, New and Renewable Energy Institute, Korea Institute of Energy Research (KIER), Korea

(29-P-S02-18) Effects of milling on NH_4^+ ion-exchange of Na-taeniolite and ionic conductivity of protonated-taeniolite

KEMI, Junnosuke[*1]; YAMAGUCHI, Tomohiro[1]; OKADA, Tomohiko[1]; TARUTA, Seiichi[1]
1. Shinshu University, Japan

(29-P-S02-19) Dual-gate FET with thermally isolated silicon membrane as an application for hydrogen sensors

SHARMA, Bharat[*1]
1. Incheon national university,Korea

02:Intensive Session in Symposium 2: Proton Conducting Ceramics and Applications

(29-P-S02-20) Heavy Sc doping and its impact on proton-dopant association in barium zirconate

KITABAYASHI, Koki[*1,2]; HYODO, Junji[2]; OKUYAMA, Yuji[1,2,4]; YAMAZAKI, Yosihiro[1,2,4]
1. Materials Science and Engineering, Kyushu University, Japan
2. INAMORI Frontier Research Center, Kyushu University, Japan
3. Department of Environmental Robotics, Faculty of Engineering, University of Miyazaki, Japan
4. Kyushu University Platform of Inter-/Transdisciplinary Energy Research (Q-PIT), Japan

(29-P-S02-21) Fabrication of anode-supported proton-conducting solid oxide fuel cells with bilayer electrolyte membranes

SAKATA, Kazuma[*1]; MATSUO, Hiroki[1]; KOJO, Gen[1]; MATSUZAKI, Yoshio[2]; OTOMO, Junichiro[1]
1. Graduate School of Frontier Sciences, The University of Tokyo, Japan
2. Tokyo Gas Co., Ltd. Fundamental Technology Dpt., Japan

(29-P-S02-22) Electrolyte Properties of anode supported PCFC with $BaZr_{0.8}Yb_{0.2}O_{3-\delta}$

YAMAUCHI, Kosuke[*1]; KUROHA, Tomohiro[1,3]; TAKAGISHI, Masayuki[2]; GOTO, Takehito[1]; TERAYAMA, Takeshi[1]; MIKAMI, Yuichi[1]; ASANO, Hiroshi[1]; OKUDA, Kazuhiro[2]; TSUJI, Yoichiro[1]; SHIRAISHI, Seigo[1]; OKUYAMA, Yuji[3]
1. Technology Innovation Division, Panasonic Corporation, Japan
2. Industrial Solutions Company, Panasonic Corporation, Japan
3. Department of Environmental Robotics, Faculty of Engineering, University of Miyazaki, Japan

(29-P-S02-23) Characterizations of $Ba_{1-x}Zr_{0.9}Y_{0.1}O_{3-\delta}$ (x=0, 0.04) and improvement of sinterability by addition of ZnO

OTANI, Yasumasa[*1]; HATAI, Kengo[1]; KISHIGAMI, Hiroki[1]; LIU, Xue[1]; MURAI, Kei-ichiro[1]; MORIGA, Toshihiro[1]; MORI, Masashi[2]
1. Tokushima University, Japan
2. Central Research Institute of Electric Power Industry, Japan

(29-P-S02-24) Crystal Structures and Phase Transition of $Ba(Ce,Zr)O_{3-\delta}$-based Proton Conducting Materials under Cell Operating Conditions

NOMURA, Katsuhiro[*1]; YAMAGUCHI, Yuki[1]; SHIMADA, Hiroyuki[1]; FUJISHIRO, Yoshinobu[1]
1. AIST, Japan

(29-P-S02-25) System efficiency of a thermally self-sustainning protonic ceramic fuel cell (PCFC) system for CH_4-H_2O fuel with reforming reaction considering hole conduction

OTA, Atsuhito[*1]; LI, Kunpeng[2]; KAWAMURA, Toshiki[3]; MORI, Masashi[4]; ARAKI, Takuto[5]
1. Graduate School of Engineering Science, Yokohama National University, Japan
2. Graduate School of Engineering, Yokohama National University, Japan
3. Graduate School of Engineering Science, Yokohama National University, Japan
4. Materials Science Research Laboratory, Central Research Institute of Electric Power Industry, Japan
5. Faculty of Engineering, Yokohama National University, Japan

(29-P-S02-26) Preparation and Characteristics of $SrZrO_3$ electrolyte / $LaMnO_3$ cathode

IKEBE, Yumiko[*1]; SASAKI, Masaya[1]; BAN, Eriko[1]
1. Meijo University, Japan

(29-P-S02-27) Evaluation of the electrode reaction mechanism in PCFCs cathode by using patterned thin film model electrodes

NISHIDATE, Katsuya[*1]; SHINOMIYA, Yuki[1]; MIZUNO, Keita[1]; KIMURA, Yuta[2]; NAKAMURA, Takashi[2]; YASHIRO, Keiji[3]; KAWADA, Tatsuya[3]; MIKAMI, Yuichi[4]; ONUMA, Shigenori[4]; KUROHA, Tomohiro[4]; TANIGUCHI, Noboru[4]; TSUJI, Yoichiro[4]; AMEZAWA, Koji[2]
1. Department of Engineering, Tohoku University, Japan
2. IMRAM, Tohoku University, Japan
3. Department of Environmental Studies, Tohoku University, Japan
4. Panasonic Corporation, Japan

(29-P-S02-28) Prediction of proton concentration in virtual compositions by machine learning

TSUJIKAWA, Kota[*1]; SHIGA, Motoki[2]; HYODO, Junji[3]; HOSHINO, Kenta[4]; YOSHIHIRO, Yamazaki[3,5]; OKUYAMA, Yuji[6]
1. Graduate School of Engineering, University of Miyazaki, Japan
2. Gifu University, Japan
3. INAMORI Frontier Research Center, Kyushu University, Japan
4. Graduate School of Engineering, Kyushu University, Japan
5. Kyushu University, Platform of Inter / Transdisciplinary Energy Research (Q-PIT), Japan
6. University of Miyazaki, Japan

(29-P-S02-29) First-principles study of Ba-doped $LaYbO_3$ supercell

OBUKURO, Yuki[*1]; OKUYAMA, Yuji[2]; MATSUSHIMA, Shigenori[3]
1. National Institute of Technology, Kurume Collegec, Japan
2. University of Miyazaki, Japan
3. National Institute of Technology, Kitakyushu College, Japan

(29-P-S02-30) Thermal Stability of Proton Conductive Phosphate Glasses

FANG, Tong[*1]; TATEBAYASHI, Takashi[1]; FUJIOKA, Masaya[1]; KAIJU, Hideo[2]; REN, Yang[3]; ZHAO, Gaoyang[3]; NISHII, Junji[1]
1. Research Institute for Electronic Science, Hokkaido University, Japan
2. Faculty of Science and Technology, Keio University,Japan
3. Department of Materials Physics and Chemistry, Xi'an University of Technology, China

(29-P-S02-32) Efficiency evaluation of hydrogen production systems with proton/oxide-ion conducting solid oxide electrolysis cells by calcualtion

MORI, Masashi[1]; LI, Kunpeng[2]; ARAKI, Takuto[*2]
1. Central Research Institute of Electric Power Industry, Japan
2. Yokohama National University, Japan

(29-P-S02-33) Process Analysis of Biogas Refining System using Proton Conducting SOEC

TACHIKAWA, Yuya[*1]; MATSUZAKI, Yoshio[1,2]; KAWABATA, Yasuharu[2]; SATO, Koki[2]; IINUMA, Hiroki[2]; BABA, Yoshitaka[2]; FUKUNAGA, Eiichi[1]; TANIGUCHI, Shunsuke[1]; SASAKI, Kazunari[1]
1. Kyushu University, Japan
2. Tokyo Gas Co. Ltd, Japan

05:Polymer Derived Ceramics (PDCs) and Composites

(29-P-S05-01) Relationship between Flexibility and Microstructure of Ceramic Thin Films Prepared on Plastic Substrates by Sol-Gel Transfer Technique

KUBOTA, Masumi[*1]; KOZUKA, Hiromitsu[1]
1. Kansai university, Japan

(29-P-S05-02) Preparation of Oxide Thin Films with Long-Time Wettability

UEDA, Yosuke[*1]; KOZUKA, Hiromitsu[1]
1. Kansai University, Japan

(29-P-S05-03) Effect of cobalt contents on thermostability of Co@SiCN nanocomposites

ZHANG, Qian[*1]; YANG, Zhihua[2]; JIA, Dechang[2]; DUAN, Xiaoming[2]; ZHOU, Yu[2]
1. College of Electroning Engineering, Chongqing University of Posts and Telecommunications, PR China
2. Institute for Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, PR China

(29-P-S05-04) Effect of CO2 Pressure on The Conversion Process of Polydimethylsilane to Polycarbosilane

YAMADA, Koya[*1]; NARISAWA, Masaki[1]; SAKURA, Ukyo[1]; INOUE, Hirofumi[1]
1. Graduate School of Engineering, Osaka Prefecture University, Japan

(29-P-S05-05) Synthesis of Graphitic Nanostructure from Metal-ion Implanted Precursor Polymer

IDESAKI, Akira[*1]; YAMAMOTO, Shunya[1]; SUGIMOTO, Masaki[1]; YAMAKI, Tetsuya[1]
1. National Institutes for Quantum and Radiological Science and Technology (QST), Japan

(29-P-S05-06) Preparation of Chiroptical Silica with Asymmetric Si Centre

JIN, Ren-Hua[*1]
1. kanagawa University, Japan

06:Environmental Functional Materials

(29-P-S06-01) Pyrazoline Dye-sensitized Granular Pt/TiO_2 Photocatalyst Solar Hydrogen Genaration

JIN, Tetsuro[*1]; SAKURAI, Hiroaki[1]; KIUCHI, Masato[1]; FUJII, Akira[2]; MAEDA, Takuya[2]; AOKI, Yasunori[3]; INOUE, Kaname[3]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Industrial Technology Center of Wakayama Prefecture, Japan
3. Nippon Chemical Works Co. Ltd., Japan

(29-P-S06-02) Effects of intermetallic compound $Mg_{1-x}Al_xB_2$ co-catalysts on photocatalytic water splitting.

IMADA, Yuka[*1]; NAGATA, Yuki[1]; INUMARU, Kei[1]
1. Hiroshima University, Japan

(29-P-S06-03) Surface modification of metal sulfide photocatalysts with various metal cyanoferrates towards efficient H_2 evolution under visible light

MATSUOKA, Hikaru[*1]; HIGASHI, Masanobu[1]; NAKADA, Akinobu[1]; TOMITA, Osamu[1]; ABE, Ryu[1]
1. Department of Energy and Hydrocarbon Chemistry, Graduate School of Engineering, Kyoto University, Japan

(29-P-S06-04) Sonochemical synthesis of Ag nanoparticles supported on ZnO flowers and their photocatalytic efficiencies

PHURUANGRAT, Anukorn[*1]
1. Department of Materials Science and Technology, Faculty of Science, Prince of Songkla University, Thailand

(29-P-S06-05) Decomposition of 2-naphthol in water and antibacterial property by NiO and CeOx modified TiO2 in the dark or under visible light

KATO, Chihiro[*1]; SHIOHARA, Mimori[1]; SUNADA, Kayano[2]; ISOBE, Toshihiro[1]; YAMAGUCHI, Akira[1]; MATSUSHITA, Sachiko[1]; ISHIGURO, Hitoshi[2]; MIYAUCHI, Masahiro[1]; NAKAJIMA, Akira[1]
1. Department of Materials Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan
2. Antibacterial and Antiviral Research Group, Kanagawa Institute of Industrial Science and Technology, Japan

(29-P-S06-06) Antibacterial and photocatalytic properties of silver niobate and silver tantalate

WITHANAGE, WITHANAGE Isuru Udakara[*1]; KUMADA, Nobuhiro[1]; YANAGIDA, Sayaka[1]; TAKEI, Takahiro[1]; UEDA, Mayu[2]; AIZAWA, Mamoru[2]
1. University of Yamanashi, Japan
2. Meiji University, Japan

(29-P-S06-07) Enhanced Photocatalytic Performance of Ti-based Metal-Organic Framework for Hydrogen Production: Hybridization with Low-Dimensional Nanoparticles

KIM, Tae Woo[*1]; SOHAIL, Muhammad[1]; KIM, Hyunuk[1]
1. Energy Materials Laboratory, Korea Institute of Energy Research, Korea.

(29-P-S06-08) Self-cleaning property of Nb-based photocatalyst thin film surface

NISHIMOTO, Shunsuke[*1]; KAGEYAMA, Kazuya[1]; TAKIGUCHI, Takahiro[1]; KAMESHIMA, Yoshikazu[1]; MIYAKE, Michihiro[1]; FUJII, Eiji[2]
1. Okayama University, Japan
2. Industrial Technology Center of Okayama, Japan

(29-P-S06-09) Surface morphology modification of Al_2O_3Ti composites for adding photocatalytic activity

SHI, Shengfang[*1]; GOTO, Tomoyo[1]; CHO, Sunghun[1]; SEKINO, Tohru[1]
1. The Institute of Scientific and Industrial Research, Osaka University, Japan

(29-P-S06-10) Synthesis and Catalytic Activity of Porous Silica Supported Palladium Catalyst for Methane Oxidation

ITO, Yoshitaka[*1]; HANEDA, Masaaki[1]
1. Nagoya Institute of Technology, Japan

(29-P-S06-11) Chemical Degradation of 4-Chlorophenol in Aqueous Media over Alumina-supported Catalysts Modified using an Organophosphonic Acid

YONEDA, Tetsuya[*1]; KOIZUMI, Koshiro[1]
1. Nihon University, Japan

(29-P-S06-13) Effect of Cu addition on CO oxidation activity of Pd catalyst

SHIGENOBU, Saki[*1]; HOJO, Hajime[2]; EINAGA, Hisahiro[2]
1. Interdisciplinary Graduate School of Engineering and Science, Kyushu University, Japan
2. Faculty of Engineering Sciences, Kyushu University, Japan

(29-P-S06-14) Anion-Exchange Reaction of Layered Double Hydroxide with Different Chemical Composition in Seawater

NAKAYASHIKI, Yuto[*1]; FUJIMURA, Takuya[1]; SASAI, Ryo[1]
1. Graduate school of Natural Science and Technology, Shimane University, Japan

(29-P-S06-15) Anion exchange properties of magnesium - aluminum layered double hydroxide based on bayerite.

TEZUKA, Satoko*1
1. Chiba Institute of Science, Japan

(29-P-S06-16) Separation of Hydrogen Isotopes by Ion-exchange Using Titanate Nanotubes

FUJIMOTO, Akira*1; MURATA, Hidenobu1; ITO, Norio2; TOKUDOME, Yasuaki1; NAKAHIRA, Atsushi1
1. Department of Materials Science, Osaka Prefecture University, Japan
2. Department of Quantum Radiation, Osaka Prefecture University, Japan

(29-P-S06-17) Evaluation of the relationship between oxygen desorption property and electronic/local structure of *B* site ions in perovskite $SrFe_{1-x}Me_xO_{3-\delta}$ (*Me* = Mn, Co)

FUJISHIRO, Fumito*1; OSHIMA, Natsumi1; SAKURAGI, Tokio2; OISHI, Masatsugu2
1. Faculty of Science and Technology, Kochi University, Japan
2. Graduate School of Technology, Industrial and Social Science, Tokushima University, Japan

(29-P-S06-18) Oxygen storage characteristics of $Ca_2AlMnO_{5+\delta}$ Synthesized under controlled oxygen pressures

ISEKI, Tomohiro*1; TAMURA, Sayaka1; SAITO, Miwa1; MOTOHASHI, Teruki1
1. Department of Materials and Life Chemistry, Faculty of Engineering, Kanagawa University, Japan

(29-P-S06-19) Oxygen Intake/Release capability of Melilite-type $Ba_2MnGe_2O_{7+\delta}$

OHISHI, Kosaku*1; TAMURA, Sayaka1; SAITO, Miwa1; MOTOHASHI, Teruki1
1. Department of Materials and Life Chemistry, Faculty of Engineering, Kanagawa University, Japan

(29-P-S06-20) Formaldehyde adsorption & diffusion performance of cement and gypsum coatings as indoor building materials

WANG, Jimei*1; WANG, Xiaoyan1; WANG, Pengqi2; TAN, Danjun2; ZHU, Min1
1. China Building Materials Academy, Japan
2. Beijing New Building Materials Co. Ltd., China

(29-P-S06-21) Determination of Extraction Efficiency of Alcohols from Silica Gel Sampling Agents in Low Concentration Region

ABIKO, Hironobu*1
1. Japan Organization of Occupational Health and Safety, Japan

(29-P-S06-22) Formation of iron oxide porous material and its phosphate removal performance

KAMESHIMA, Yoshikazu*1; ABE, Yuya1; KODERA, Yuta1; NISHIMOTO, Shunsuke1; MIYAKE, Michihiro1
1. Okayama University, Japan

(29-P-S06-23) Nitrite-Ion Sensor Using Perovskite-Type Oxide Thick-Film Electrode

MORIYAMA, Mikako*1; SHINODA, Yasunari1; SHIMOJI, Haruna1; TAKASE, Satoko1; IBRAHIM, Norahim2; SHIMIZU, Youichi1
1. Kyushu Institute of Technology, Japan
2. Universiti Teknologi Malaysia, Malaysia

(29-P-S06-24) Effect of heat-treatment on the pH sensitivity of stainless-steel electrodes as pH sensors

HASHIMOTO, Tadanori*1; KITABAYASHI, Hiroki1; ITO, Kenta1; NASU, Hiroyuki1; ISHIHARA, Atsushi1; NISHIO, Yuji2
1. Mie University, Japan
2. HORIBA Advanced Techno, Co., Ltd., Japan

(29-P-S06-25) Detection of influenza A H1N1 virus proteins through the development of an electrochemical inmunobiosensor

MORALES-SAN CLAUDIO, Pilar*1; ESPINOSA, Daniel1
1. Universidad Autonoma de Nuevo Leon, Mexico

(29-P-S06-26) Toluene Detection Ability of Luminous Transparent Film Hybridizing Pyrene with Layered Double Hydroxide

FUJIMURA, Takuya*1; AKAGASHI, Yoshiya1; AOYAMA, Yu-hei1; SASAI, Ryo1
1. Graduate School of Natural Science & Technology, Shimane University, Japan

(29-P-S06-27) A Hierarchical Porous Carbon Supported Pd@Pd_4S Heterostructure as an Efficient Catalytic Cathode Material for Li-O_2 Batteries

HUANG, Qishun*1; DANG, Feng2
1. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China.
2. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Shandong University, China

(29-P-S06-28) The Development of Luminescent Aggregates from Wasted Glasses for Cement Application

LORYUENYONG, Vorrada*1; KORNSAWAT, Jirawan1; NAKHOWONG, Wannapha1; KLINJAN, Wannipha1; BUASRI, Achanai1
1. Silpakorn University, Thailand

(29-P-S06-29) Preparation and Microstructure of Ytterbium Silicate Coatings by Plasma Spray-Physical Vapor Deposition

GUO, Qian*1,2; WEI, Liangliang1,2; XIAO, Jie1,2; GUO, Hongbo1,2
1. School of Materials Science and Engineering, Beihang University, China
2. Key Laboratory of High-temperature Structural Materials &Coatings Technology (Ministry of Industry and Information Technology), China

09:Science and Applications of Amorphous Materials

(29-P-S09-01) Characterization of pore structure in α-quartz by neutron irradiation

OKADA, Naoki*1; OHKUBO, Takahiro1
1. Graduate School of Engineering, Chiba University, Japan

(29-P-S09-02) XANES Analysis of Activators in Oxide Glasses with Different Absorption Edges

MASAI, Hirokazu*1; INA, Toshiaki2; MIBU, Ko3; KOSHIMIZU, Masanori4
1. National Institute of Advanced Industrial Science and Technology, Japan
2. Japan Synchrotron Radiation Research Institute, Japan
3. Nagoya Institute of Technology, Japan
4. Tohoku University, Japan

(29-P-S09-03) Modeling of Oxide Glasses Based on First-Principles Calculation: Predicting Structural and Transport Properties of Silicates, Aluminosilicates and Borates

ISHII, Yoshiki*1; MATUBAYASI, Nobuyuki1; SHINOZAKI, Kenji2; SALMON, Philip3; ZEIDLER, Anita3; SALANNE, Mathieu4; OHTORI, Norikazu5
1. Graduate School of Engineering Science, Osaka University, Japan
2. National Institute of Advanced Industrial Science and Technology, Japan
3. Department of Physics, University of Bath, UK
4. Sorbonne Universités, UPMC Univ Paris 06, CNRS, France
5. Faculty of Science, Niigata University, Japan

(29-P-S09-04) Li conduction mechanisms in borosilicate glasses: insights from ab initio molecular dynamics simulations

ARIGA, Shunsuke*1; OHKUBO, Takahiro2; IMAMURA, Yutaka3; TANIDA, Masamiti4; TANIGUCHI, Taketoshi3; URATA, Shingo3
1. Faculty of Engineering, Chiba University, Japan
2. Graduate School of Engineering, Chiba University, Japan
3. Innovative Technology Research Center, AGC Inc, Japan
4. New Product R&D Center, AGC Inc., Japan

(29-P-S09-05) Exploration of meta-stable ionic sites in solid state electrolytes by combining Voronoi polyhedron analysis and ab initio calculations

KUROMIYA, Kazuki[*1]; UTSUNO, Futoshi[2]; OHKUBO, Takahiro[1]
1. Graduate School of Engineering, Chiba University, Japan
2. Advanced Technology Research Laboratories, Idemitsu Kosan Co., Ltd., Japan

(29-P-S09-06) Density of borosilicate glass melts over a wide temperature range

NISHIKAWA, Shintaro[*1]; YAMADA, Akihiro[1]; YOSHIDA, Satoshi[1]; MATSUOKA, Jun[1]
1. Department of Materials Science, The University of Shiga Prefecture, Japan

(29-P-S09-07) Preparation of oxide glass-ceramic derived all-solid-state battery by laser irradiation

HIRATSUKA, Masafumi[*1]; HONMA, Tsuyoshi[1]; KOMATSU, Takayuki[1]
1. Nagaoka University of Technology, Japan

(29-P-S09-08) Color Converting Properties of Thick-Film Phosphor-in-Glasees for White LEDs Depending on Their Structural Designs

NAM, Yoon Hee[*1]; IM, Won Bin[2]; CHUNG, Woon Jin[1]
1. Kongju National University, Korea
2. Hanyang University, Korea

(29-P-S09-09) Optical and magnetic properties of Tb_2O_3–Al_2O_3 glass and glass-ceramic microspheres prepared by In-Flight melting

KISHI, Tetsuo[*1]; AOYAGI, Masakazu[1]; NAKASHIMA, Seisuke[2]; MATSUSHITA, Nobuhiro[1]; YANO, Tetsuji[1]
1. Tokyo Institute of Technology, Japan
2. Shizuoka University, Japan

(29-P-S09-10) In-situ observation of the evolution of phase separation in Ni^{2+} -doped sodium borosilicate glass melts by optical absorption spectroscopy

IDE, Kazuma[*1]; YAMADA, Akihiro[1]; YOSHIDA, Satoshi[1]; MATSUOKA, Jun[1]
1. The University of Shiga Prefecture, Japan

(29-P-S09-11) Non-vacuum monovalent ion emission from sharp-edged glasses for bio/medical applications

DAIKO, Yusuke[*1]; YANAGIDA, Haruki[1]; MORI, Hiroki[1]; HONDA, Sawao[1]; OBATA, Akiko[1]; IWAMOTO, Yuji[1]
1. Nagoya Institute of Technology, Japan

(29-P-S09-12) Effect of Oxide Nano Powders on the Sintering Behavior of Aluminum-Boro-Phosphate Glass Coating Layer

KIM, In Gun[*1]; LEE, Hansol[1]; KIM, Tae Ho[2]; KIM, Tae Hee[2]; CHUNG, Woon Jin[1]
1. Kongju National Univ., Korea
2. LG Electronics, Korea

(29-P-S09-13) Application of CALPHAD database to the evaluation of glass chemical durability

JIN, Kosuke[*1]; OHIRA, Toshiaki[2]; SUGAWARA, Toru[2]
1. Graduate School of International Resource Science, Akita University, Japan
2. Graduate School of Engineering Science, Akita University, Japan

(29-P-S09-14) Revisiting Ion Exchange of Glass Using Kaolinite-Based Clay Particles

KO, Se Young[*1]; LEE, Woo Hyung[1]; KIM, Hyun[1]; LEE, Ji In[1]; CHOI, Yong Gyu[1]
1. Korea Aerospace University, South Korea

(29-P-S09-15) Relationships between spontaneous breakage and volume expansion of Nickel Sulfide included in tempered sheet glass

SAKAI, Chihiro[*1]
1. Research and Development, NIPPON SHEET GLASS CO., LTD, Japan

(29-P-S09-16) Silica Monolith as a Fish Spoilage Sensor

NITHIPONGWARODOM, Phimmada[*1]; BUNTEM, Radchada[2,3]; KUNGKAPRADIT, Warunphorn[1]
1. Prapathom Wittayalai School, Thailand
2. Department of Chemistry, Faculty of Science, Thailand
3. Center of Excellence in Design Materials, Faculty of Science, Silpakorn University, Thailand

(29-P-S09-17) Cosolvent-free synthesis and characterization of poly(Ph-*co*-R-SQ) (R = Me, Et, Pr, and Vi) glasses with low melting temperatures

SETO, Ryosuke[*1]; KAJIHARA, Koichi[1]; KANAMURA, Kiyoshi[1]
1. Tokyo Metropolitan University, Japan

(29-P-S09-18) Boron Content Dependence of a Hierarchical Nanoporous Layer Formation on a Silicate Glass

ITO, Takumi[*1]; TABATA, Erika[1]; USHIODA, Yuki[1]; FUJIMA, Takuya[1,2]
1. Department of Mechanical Engineering, Tokyo City University, Japan
2. Advanced Research Laboratories, Tokyo City University, Japan

(29-P-S09-19) Formation of an anti-fouling nano-porous layer on a tile glaze

USHIODA, Yuki[*1]; TABATA, Erika[1]; ITO, Takumi[1]; FUJIMA, Takuya[1,2]
1. Department of Mechanical Engineering Tokyo City University, Japan
2. Advanced Research Laboratories Tokyo City University, Japan

10:Bioceramics and Bioinspired Materials

(29-P-S10-01) Effect of Sintering Temperature Condition on the Mechanical Properties of Hydroxyapatite

KOBAYASHI, Satoshi[*1]; IZAWA, Tomomi[1]
1. Tokyo Metropolitan University, Japan

(29-P-S10-02) Mechanical Properties of Coprecipitation-Derived Diopside Ceramics for Medical Applications

IWATA, Noriyuki[*1]; LEE, Geun-Hyoung[2]; KAWASHIMA, Norimichi[3]
1. National Institute of Technology, Kurume College, Japan
2. Dong-Eui University, Korea
3. International Pacific University, Japan

(29-P-S10-03) Functionalized mesoporous silica thin films for surface plasmon resonance: protein adsorption and cell attachment

ICHIKAWA, Chieko[*1]; IKOMA, Toshiyuki[1]
1. Department of Materials Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan

(29-P-S10-04) Use of Sodium Silicate Waste Solution as Si Source to Synthesize MgO-CaO-SiO_2 System Ceramic Powder for Biomedical Application

YAMAGATA, Chieko[*1]; REZENDE LEME, Daniel[1]; RODAS, Andrea Cecilia Dorion[2]; HIGA, Olga Zazuko[1]; MELLO-CASTANHO, Sonia Regina Homem[1]
1. Materials Science and Technology Center, Nuclear and Energy Research Institute, Brazil
2. Biomedical Engineering, Federal University of ABC, Brazil

(29-P-S10-05) Cytotoxicity and degradability of collagen filler containing bioactive glass and β-TCP

KUO, Yu Chen[*1]; SHIH, Hsueh Huan[1]; LIN, Ying Chih[2]; SHIH, Shao Ju[1]
1. Department of Material Science and Engineering, National Taiwan University of Science and Technology, Taiwan
2. Horien Biochemical Technology Co.,Ltd., Taiwan

(29-P-S10-06) Antibacterial and biological activities of mesoporous bioactive glass with dopants of silver and strontium

PENG, Ching Yuan[*1]; RICHARDO, Lewi Peter[1]; SHIH, Shao Ju[1]
1. Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan

(29-P-S10-07) Fabrication of zinc-substituted gehlenite sintered bodies and its biocompatibility

SHIN, Hideo[1]; TAKEDA, Hiroaki[1]; IKOMA, Toshiyuki[*1]
1. Tokyo Institute of Technology, Japan

(29-P-S10-08) Osseointegration improves with nano-alumina reinforcement in hydroxyapatite sintered at low temperatures

AKMAL, Muhammad[1]; HASSAN, Muhmood ul[*2]; AFZAL, Muhammad[3]; RYU, Ho Jin[1,2]
1. Dept. of Materials Science and Engineering, KAIST, Korea
2. Dept. of Nuclear and Quantum Engineering, KAIST, Korea
3. Dept. of Mechanical Engineering, KAIST, Korea

(29-P-S10-09) 3D printed alumina objects prepared by controlling ink amounts

HAMANO, Ryohei[*1]; IKOMA, Toshiyuki[1]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan

(29-P-S10-10) Formation of alumina layer on titanium alloy by micro-arc oxidation for bearing surface of artificial joint

TAKADAMA, Hiroaki[*1]; KHANNA, Rohit[1]; SHINTANI, Seine A.[1]; YAMAGUCHI, Seiji[1]
1. Department of Biomedical Sciences, Chubu University, Japan

(29-P-S10-11) Enhancement of initial stage of osteoblast differentiation on a surface potential-controlled TiO_2 surface

HASHIMOTO, Masami[*1]; KITAOKA, Satoshi[1]; FURUYA, Maiko[2]; KANETAKA, Hiroyasu[2]; HOSHIKAYA, Kazuhiko[3]; YAMASHITA, Hayato[3]; ABE, Masayuki[3]
1. Japan Fine Ceramics Center, Japan
2. Tohoku University, Japan
3. Osaka University, Japan

(29-P-S10-12) Optical property of Titanium Thin Films Formed on Transparent Substrates Using Magnetron Sputtering

WATAZU, Akira[*1]; SONODA, Tsutomu[1]; TERAOKA, Kay[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan

(29-P-S10-13) Bioactive Treatment of Zirconia by Hydroxyapatite Particles Deposition using Solution Treatment.

ZAMIN, Hasnat[*1]; YABUTSUKA, Takeshi[1]; TAKAI, Shigeomi[1]; SAKAGUCHI, Hiroshi[2]
1. Graduate School of Energy Science, Kyoto University, Japan
2. Institute of Advanced Energy, Kyoto University, Japan

(29-P-S10-14) Novel Porous Zirconia as a Purification Media for Immunoglobulin G in Serum

KATO, Katsuya[*1]; KITAMURA, Masahiro[1]; NAGATA, Fukue[1]; KASAHARA, Shinjiro[2]
1. NGK SPARK PLUG-AIST Healthcare Materials Cooperative RL, AIST, Japan
2. NGK SPARK PLUG Co. Ltd., Japan

(29-P-S10-15) Temperature-resolution in afterglow zirconia phosphor for human-body temperature sensing

SATO, Aoni[*1]; TERAKADO, Nobuaki[1]; TAKAHASHI, Yoshihiro[1]; ONOUE, Noriko[2]; SHINOZAKI, Tsuyoshi[2]; FUJIWARA, Takumi[2]
1. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan
2. Department of Cardiovascular Medicine, National Hospital Organization, Sendai Medical Center, Japan

(29-P-S10-16) Zirconium phosphate and its peptide composite as protein carriers: adsorption properties and catalytic performance

KOJIMA, Suzuka[*1,2]; NAGATA, Fukue[1]; KUGIMIYA, Shinichi[2]; KATO, Katsuya[1]
1. National Institute of Advanced Industrial Science and Technology, Japan
2. Aichi Institute of Technology, Japan

(29-P-S10-17) Freestanding Membrane of Crystallized Hydroxyapatite

NISHIKAWA, Hiroaki[*1]
1. Faculty of Biology-Oriented Science and Technology, Kindai University, Japan

(29-P-S10-18) High Adsorption Capacity of Cellulose Nanofiber-Hydroxyapatite Hybrid Materials for Protein Adsorbent

NAGATA, Fukue[*1]; SUZUKI, Aoi[1]; MIYAJIMA, Tatsuya[1]; LEE, Sungho[1]; KATO, Katsuya[1]; SUGAWARA-NARUTAKI, Ayae[2]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Nagoya University, Japan

(29-P-S10-19) Fabrication of biodegradable polymer-coated porous hydroxyapatite scaffold loaded with growth factor and its evaluation

SHIRAI, Yuki[*1]; AIZAWA, Mamoru[1]
1. Department of Applied Chemistry, Meiji University, Japan

(29-P-S10-20) Adsorption Behavior of Protein on Cellulose-Fiber Covered with Hydroxyapatite Shell

WATANABE, Shota[*1,2]; LEE, Sungho[1]; KATO, Katsuya[1]; MIYAJIMA, Tatsuya[1]; SAKURAI, Makoto[2]; NAGATA, Fukue[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Chubu University, Japan

(29-P-S10-21) Bioceramics Toughening Soft & Wet Materials

TANAKA, Kazuki[1]; FUKAO, Kazuki[1]; NONOYAMA, Takayuki[*1]; KIYAMA, Ryuji[1]; GONG, Jian Ping[1]
1. Hokkaido University, Japan

(29-P-S10-22) Generation of Apatite on Bioactive Glass/Alginate Beads

PHOMSOMBUT, Kasamol[*1]; BUNTEM, Radchada[1,2]
1. Department of Chemistry, Faculty of Science, Silpakorn University, Thailand
2. Center of Excellence in Design Materials, Faculty of Science, Silpakorn University, Thailand

(29-P-S10-23) Fabrication of polycaprolactone(PCL)/hydroxyapatite(HA) composite scaffolds with enhanced mechanical properties and biocompatibility via binderjet-based 3D printing

AHN, Jiho[1,2]; JANG, Tae-Sik[1]; LEE, Jina[1]; JUNG, Hyun-Do[*1]
1. Research Institute of Advanced Manufacturing Technology, Korea Institute of Industrial Technology, Korea
2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea

(29-P-S10-24) Fabrication of textured ceramics with well-controlled anisotropy by templated grain growth method using single crystal strontiumapatite fibers

KOIZUMI, Haruna[*1]; YOSHIDA, Shuhei[1]; AIZAWA, Mamoru[1]
1. Department of Applied Chemistry, Meiji University, Japan

(29-P-S10-25) Preparation of hydroxyapatite capsules encapsulating mesoporous silica in biomimetic solution

NAKANISHI, Kota[*1]; YABUTSUKA, Takeshi[1]; TAKAI, Shigeomi[1]
1. Graduate School of Energy Science, Kyoto University, Japan

(29-P-S10-26) Specific Crystal Growth of Calcium Phosphate by Mineralization at Peptide Hydrogel Interface

MURAI, Kazuki[*1]; ISOBE, Hiroto[2]; TORIGOE, Kanjiro[2]; MATSUMOTO, Mutsuyoshi[2]; NISHIO, Keishi[2]
1. Shinshu University, Japan
2. Tokyo University of Science, Japan

(29-P-S10-27) Protein adsorption of Mn-containing bone-like calcium phosphate cement

TODA, Kaziki[*1]; UCHINO, Tomohiro[1]
1. Graduate School of Engineering, Nihon University, Japan

(29-P-S10-28) Effect of calcium sulfate addition on material properties and bioresorbability of β-tricalcium phosphate cements hybridized with poly lactic-co-glycolic acid

ANDO, Akihiro[*1]; NAGATA, Kohei[1]; NAKANO, Kazuaki[2]; NAGAYA, Masaki[2]; NAGASHIMA, Hiroshi[2,3]; AIZAWA, Mamoru[1,2]
1. Department of Applied Chemistry, Meiji University, Japan
2. Meiji University International Institute for Bio-Resource Research, Meiji University, Japan
3. Department of Life Science, Meiji University, Japan

(29-P-S10-29) *In vivo* Performance of Cotton-wool-like Bone Void Fillers Consisting of β-TCP and Vaterite Embedded in a PLGA matrix

OSADA, Naoki[*1,2]; MAKITA, Masashi[1]; NISHIKAWA, Yasutoshi[1]; KASUGA, Toshihiro[2]
1. ORTHOREBIRTH Co. Ltd.,, Japan
2. Nagoya Institute of Technology, Japan

(29-P-S10-30) Zn controlled-release by layered calcium phosphate/gel composite

HOSHINO, Yuka[*1]; UCHINO, Tomohiro[1]
1. Graduate school of Engineering, Nihon University, Japan

(29-P-S10-31) Using Containerless Processing for Preparing Luminescent Bioactive Glass

LI, Qin[1]; YU, Jianding[*2]
1. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
2. Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

(29-P-S10-32) Bone Induction in Adult Rat Skin by Bone-like Low Crystalline HAp/Collagen/BMP-2 Composite

MURATA, Masaru[*1]; YOKOZEKI, Kenji[1]; ZHU, Bowen[1]; KABIR, Arafat[1,2]; NAKAJIMA, Takehiko[3]; AKAZAWA, Toshiyuki[4]
1. Health Sciences University of Hokkaido, Japan
2. Pioneer Dental College and Hospital, Bangladesh
3. HOYA Technosurgical Corporation, Japan
4. Industrial Research Institute, Hokkaido Research Organization, Japan

(29-P-S10-33) Development of Bioactive PMMA Cement for Hyperthermia of Metastatic Bone Tumor

KAWASHITA, Masakazu[*1]; KUBOTA, Moe[2]; OGAWA, Tomoyuki[2]; SAITO, Shin[2]; JEYADEVAN, Balachandran[3]
1. Tokyo Medical and Dental University, Japan
2. Tohoku University, Japan
3. University of Shiga Prefecture, Japan

13:Engineering Ceramics: Processing and Characterization

(29-P-S13-01) Assessing the homogeneity of an alumina/zircon powder mixture at various scales by scanning electron microscopy

GIRAUD, Martin[1,2]; VAUDEZ, Stephane[*1]; GATUMEL, Cendrine[2]; BERNARD-GRANGER, Guillaume[1]; BERTHIAUX, Henri[2]
1. CEA, DEN, MAR, DMRC, SFMA, LFC, France
2. Université de Toulouse, IMT Mines Albi, UMR CNRS 5302, France

(29-P-S13-02) Fabrication and Properties Study of High Thermal Conductivity AlN Ceramics

XIE, Jianjun[1]; WANG, Yu[1,2]; WANG, Tun[1]; FAN, Lincong[1]; WU, Yiquan[*3]; SHI, Ying[1]
1. Department of Electronics and Information Materials, School of Materials Science and Engineering, Shanghai University, China
2. Shanghai Yuking Chemtech Co., Ltd., China
3. Kazuo Inamori School of Engineering, Alfred University, USA

(29-P-S13-03) Mechanical properties of single crystal $BaTiO_3$ measured using microcantilever beam specimens

YAMAGUCHI, Hiroshi[*1]; TATAMI, Junichi[1,2]; IIJIMA, Motoyuki[1,2]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

(29-P-S13-04) Fabrication of Fibrous Boron Carbide by Carbothermal Reduction via Electrospinning

KOBAYASHI, Taiju[*1]; KAKIAGE, Masaki[2]
1. Shinshu University, Japan
2. Gunma University, Japan

(29-P-S13-05) Dielectric Properties of $(Ba,Ca)TiO_3$ Solid-solution Films formed by Sputter-anneal Method

AKO, Miho[*1]; KYOMEN, Toru[1]; FUJISAWA, Jun-ichi[1]; HANAYA, Minoru[1]
1. Graduate School of Science and Technology, Gunma University, Japan

(29-P-S13-06) Formation of $(Ba,Ca)ZrO_3$ Solid Solutions beyond the Solubility Limit by rf Magnetron Sputtering and Successive Annealing at a Moderate Temperature Condition

AKO, Miho[*1]; FUJISAWA, Jun-ichi[1]; HANAYA, Minoru[1]
1. Graduate School of Science and Technology, Gunma University, Japan

(29-P-S13-07) The design and the development of dispersants for nanoparticles

MATSUZAKI, Kenta[*1]; HONDA, Takuya[1]; YOSHIKAWA, Fumitaka[1]; MATSUI, Tatsuya[1]; MARUYAMA, Keiichi[2]
1. NOF CORPORATION OLEO & SPECIALITY CHEMICALS RESERCH LAB., Japan
2. NOF CORPORATION OLEO & SPECIALITY CHEMICALS RESERCH LAB., Japan

(29-P-S13-08) Effects on Microstructure of Silicon Carbide Ceramics with Boron and Aluminum Additives

CHUNG, Ying[*1]; GUBAREVICH, Anna[2]; YOSHIDA, Katsumi[2]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan
2. Laboratory of Advanced Nuclear Energy, Institute of Innovative Research, Tokyo Institute of Technology, Japan

(29-P-S13-09) Combusiton synthesis of single-phase Al_4SiC_4 powder by induction heating

WATANABE, Tsubasa[*1]; GUBAREVICH, Anna[2]; YOSHIDA, Katsumi[2]
1. Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan
2. Institute of Innovative Research, Laboratory for Advanced Nuclear Energy, Tokyo Institute of Technology, Japan

(29-P-S13-10) Influence of rare earth oxide as a sintering aid on translucency of aluminum nitride (AlN) ceramics

AKIMOTO, Hayato[*1]; TATAMI, Junichi[1,2]; IIJIMA, Motoyuki[1,2]; TAKAHASHI, Takuma[2]; OKUDA, Tetsuya[2]
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan

(29-P-S13-11) Effect of Pb-substitution on the modulation structure for Bi2212 superconductor

SHIMABUKURO, Yoshihito[*1]; KATSUSHIKA, Shuto[1]; NAMINOUE, Tomoya[1]; SATO, Yusuke[1]; KANNO, Shun[1]; SATAKE, Nobuaki[1]; KAMBE, Shiro[1]
1. Department of Material and Chemistry, Graduate School of Science and Engineering, Yamagata University, Japan

(29-P-S13-12) Preparation and physical properties of (Bi, Pb)2223 phase

WATANABE, Tetsuto*1; SASAKI, Dai1; KAMBE, Shiro1
1. Graduate school of Science and Engineering, Yamagata University, Japan

(29-P-S13-13) Effect of Heating Temperature, Holding Time, Heating Rate, and Cooling Rate on Reaction between Lead-Free Frit and Hematite

TERASAWA, Akane*1; INADA, Hirofumi2; TAKAISHI, Taigo2; FUJII, Tatsuo3; HASHIMOTO, Hideki4; ASOH, Hidetaka4
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2. Kyoto Municipal Institute of Industrial Technology and Culture, Japan
3. Graduate School of Natural Science and Technology, Okayama University, Japan
4. Department of Applied Chemistry, School of Advanced Engineering, Kogakuin University, Japan

(29-P-S13-14) Preparation of nitride phosphor particle dispersed glass

TORASE, Natsumi*1; TATAMI, Junichi1,2; IIJIMA, Motoyuki1,2; TAKAHASHI, Takuma2; HIROSAKI, Naoto3
1. Yokohama National University, Japan
2. Kanagawa Institute of Industrial Science and Technology, Japan
3. National Institute for Materials Science, Japan

(29-P-S13-15) Decrease in Electrical Resistivity of Al_2O_3 Ceramics by Dispersion of a Small Amount of Long SWCNT

KINOSHITA, Ryota*1; FUJITA, Asuka1; SUNGHUN, Cho2; SEKINO, Tohru2; KUSUNOSE, Takafumi1
1. Kagawa university, Japan
2. Osaka university, Japan

(29-P-S13-16) Brookite type TiO_2 and HAp complex film prepared by hydrothermal synthesis method and its optical study

SAIKI, Atsushi*1; SHIBATA, Atsuki2; HASHIZUME, Takashi3
1. Department of Materials Design and Engineering, University of Toyama, Japan
2. Department of Materials Science and Engineering, University of Toyama, Japan
3. Collaboration and Promotion center for Industry and Academia, University of Toyama, Japan

(29-P-S13-17) Thermal Expansion and Shrinkage during a Heating Stage of Firing of $BaTiO_3$ Powder Compact at Various Heating Rates

HAMADA, Nami*1; IWATA, Naoya1; AKASHI, Takaya2; MORI, Takamasa2
1. Graduate School of Science and Engineering, Hosei University, Japan
2. Faculty of Bioscience and Applied Chemistry, Hosei University, Japan

(29-P-S13-18) Effect of Glass Layer Thickness on Color Tone and Crystalline Phase of Lead-free Red Overglaze Enamels

INADA, Hirofumi1; OKAZAKI, Yuki1; ARAKAWA, Yuya1; TAKAISHI, Taigo1; FUJII, Tatsuo2; TAKADA, Jun2; HASHIMOTO, Hideki*3
1. Kyoto Municipal Institute of Industrial Technology and Culture, Japan
2. Okayama University, Japan
3. Kogakuin University, Japan

(29-P-S13-19) Evaluation of Highly Structured B_4C Ceramics Prepared via Strong Magnetic Field-Assisted Colloid Processing

AZUMA, Shota*1; UCHIKOSHI, Tetsuo2; YOSHIDA, Katsumi3; SUZUKI, Tohru1
1. Ceramics Processing Group, National Institute for Materials Science, Japan
2. Fine Particles Engineering Group, National Institute for Materials Science, Japan
3. Laboratory for Advanced Nuclear Energy, Tokyo Institute of Technology, Japan

(29-P-S13-20) Evaluation of change of hydration layer formation using various solutions

FUKUZAKI, Ryo*1; SUDA, Seiichi1
1. Department of Engineering, Shizuoka University, Japan

(29-P-S13-21) Fabrication of Highly Electrically Resistive Ceramics with Low Temperature Dependence of Resistivity Like Metals

SAKAMOTO, Masahiro*1; FUJISAWA, Hiroaki1; SEKINO, Tohru2; KUSUNOSE, Takafumi1
1. Kagawa University, Japan
2. Osaka Univesity, Japan

(29-P-S13-22) Characterization on Matter Diffusion and Microstructural Evolution of Y_2O_3 Fabricated by Spark Plasma Sintering

LEE, Ji Hwoan*1; KIM, Byung-Nam2; JANG, Byung-Koog1
1. Interdisciplinary Graduate School of Engineering Science, Kyushu University, Japan
2. Research Center for Functional Materials, National Institute for Materials Science, Japan

(29-P-S13-23) High thermal shock resistance B_4C/CNT composite fabricated by hot-pressing method

MAKI, Ryosuke S. S.*1; FAJAR, Muhammad1; MALETASKIC, Jelena1; GUBAREVICH, Anna1; YANO, Toyohiko1; YOSHIDA, Katsumi1; SUZUKI, Tohru S.2; UCHIKOSHI, Tetsuo2
1. TOKYO INSTITUTE OF TECHNOLOGY, Japan
2. National Institute for Materials Science, Japan

(29-P-S13-24) Fabrication and evaluation of AlN ceramics containing AlN whiskers consolidated by spark plasma sintering

FUKUSHI, Emiko*1; OKAZAKI, Hiroya1; KOBAYASHI, Ryota1; HARATA, Koichi2; GOTO, Takashi2
1. Tokyo city University, Japan
2. Tohoku University, Japan

(29-P-S13-25) An evaluation of thermal expansion behavior of $Al_{2(1-x)}Fe_{2x}TiO_5$ added SiO_2 glass

SUGIMOTO, Takayuki*1; HAYASHI, Akari2; HINOHARA, Yo3; FUJIMORI, Hiroki2
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2. Department of Chemistry, College of Humanities and Sciences, Nihon University, Japan
3. Correlative Study in Physics and Chemistry, Graduate School of Integrated Basic Sciences, Nihon University, Japan

(29-P-S13-26) Substitution effects on the crystal structure and mechanical properties of $Mo_2Ni_{1-x}Cr_xB_2$ hard materials

WATANABE, Junya*1; OTA, Toshiki1; MARUYAMA, Satofumi1
1. Tokyo City University, Japan

(29-P-S13-27) Doping effects on the sintering behavior and microstructures of boron carbides

OTA, Toshiki*1; KOYAMA, Ryuichiro1; NAKAMURA, Koga1; WATANABE, Junya1; MARUYAMA, Satofumi1
1. Tokyo City University, Japan

(29-P-S13-28) Effect of Shaping Conditions on the Texture Formation in the Sintered Cordierite Ceramics

SON, Min-A*1; CHAE, Ki-Woong1; KIM, Jeong Seog1; KIM, Shin-Han2
1. Hoseo University, Korea
2. Ceracomb Co. Ltd, Korea

14:Advanced Structure Analysis and Characterization of Ceramic Materials

(29-P-S14-01) Destabilization of giant tetragonal distortion of $BiCoO_3$ by means of electron doping through Ti substitution

ISHIZAKI, Hayato*1; YAMAMOTO, Hajime2; SAKAI, Yuki1,3; OKIMOTO, Yoichi4; KOSHIHARA, Shinya4; AZUMA, Masaki1
1. Materials and Structures Laboratory, Tokyo Institute of Technology, Japan
2. Institute of Multidisciplinary Research for Advanced Materials,

Japan
3. Kanagawa Institute of Industrial Science and Technology
4. Department of Chemistry, Tokyo Institute of Technology, Japan

(29-P-S14-02) HRCXS - The powerful bulk analysis method for the chemical state in ceramics

HONGO, Toshinobu[1]; ITO, Yoshiaki[2]; KUROKAWA, Tomohiro[1]; FUKUSHIMA, Sei[*1]
1. Chemical Test Department, Kobe Material Testing Laboratory Co., Ltd., Japan
2. Rigaku Corporation, Japan

(29-P-S14-03) The oxidation state analysis of Ti by XPS, XAFS and HRCXS - The difference of spectral changes between carbide and oxide -

HONGO, Toshinobu[*1]; UEMURA, Masaharu[2]; SASAKI, Takanobu[1]; URAMOTO, Motoko[1]; KUROKAWA, Tomohiro[1]; FUKUSHIMA, Sei[1,2]
1. Chemical Test Department, Kobe Material Testing Laboratory Co., Ltd., Japan
2. Synchrotron Analysis L.L.C., Japan

(29-P-S14-04) ^{71}Ga NMR shift distribution analysis on nanocrystalline h-GaN

TANSHO, Masataka[*1]; SUEHIRO, Takayuki[2]; SHIMIZU, Tadashi[1]
1. High Field NMR Group, Research Center for Advanced Measurement and Characterization, National Institute for Materials Science (NIMS), Japan
2. Sialon Group, Research Center for Functional Materials, National Institute for Materials Science (NIMS), Japan

(29-P-S14-05) Novel 3D Analytical Technique for Grain Boundaries of Ceramic Materials

ARAI, Naomi[*1]; SASAKI, Tomokazu[1]; SUGANUMA, Mina[1]; MAYAMA, Norihito[1]; ISHIMURA, Satoshi[1]; TODA, Kazuya[1]; NAKAJIMA, Satoru[1]
1. Toshiba Nanoanalysis Corporation, Japan

(29-P-S14-06) Low thermal conductivity of two phase rare earth zirconates

STOPYRA, Michal[*1]; NIEMIEC, Dawid[1]; MOSKAL, Grzegorz[1]
1. Silesian University of Technology, Poland

(29-P-S14-07) Chemical State Analysis of p-Block Element Fluorides by using AES

NISHIMURA, Fumihiro[*1]; KIM, Jae-Ho[2]; YONEZAWA, Susumu[1]
1. Headquarters for Innovative Society-Academia Cooperation(HISAC), University of Fukui, Japan
2. Materials Science and Engineering, University of Fukui, Japan

(29-P-S14-08) Crystal orientation Analysis of Pearl layer using Low Voltage Electron Backscattered Diffraction

ASANO, Natsuko[*1]; ASAHINA, Shunsuke[1]
1. JEOL Ltd., Japan

(29-P-S14-09) XAS Studies on the Chromium Ion-Doped Silicate Glass

TIAWPISITPONG, Parima[*1]; SAMKONGNGAM, Kamolwan[2]; BUNTEM, Radchada[1,2]
1. Department of Chemistry, Faculty of Science, Silpakorn University, Thailand
2. Center of Excellence in Design Materials, Faculty of Science, Silpakorn University, Thailand

(29-P-S14-10) Discovery of a Rare-Earth-Free Oxide-Ion Conductor $Ca_3Ga_4O_9$ by Screening through the Bond-Valence Method and Experiments

YASUI, Yuta[*1]; NIWA, Eiki[1]; MATSUI, Masahiro[1]; FUJII, Kotaro[1]; YASHIMA, Masatomo[1]
1. Department of Chemistry, School of Science, Tokyo Institute of Technology, Japan

(29-P-S14-11) Oxide-ion diffusion pathway and conductivity of the hexagonal perovskite-related oxide $Ba_3MoNbO_{8.5-\delta}$ and its related materials

SAKUDA, Yuichi[*1]; TUJIGUCHI, Takafumi[1]; FUJII, Kotaro[1]; NIWA, Eiki[1]; MURAKAMI, Taito[1]; NISHIOKA, Shunta[1,2]; HESTER, James R[3]; MAEDA, Kazuhiko[1]; YASHIMA, Masatomo[1]
1. Tokyo institute of technology, Japan
2. Japan Society for the Promotion of Science, Japan
3. Australian Centre for Neutron Scattering, Australia

(29-P-S14-12) The octahedral distortion and the thermal expansion of pseudo-brookite-type compounds

SUNAGA, Mao[*1]; AKIZUKI, Yusuke[1]; KOSHIKAWA, Miduki[1]; NAKAMURA, Yulia[1]; NOGUCHI, Mariko[2]; FUJIMORI, Hiroki[1]
1. Graduate School of Integrated Basis Science, Nihon University, Japan
2. College of Humanities and Sciences, Nihon University, Japan

(29-P-S14-13) Ordinary and extraordinary structural phase transitions in strontium tungstate $Sr_3W_2O_9$

URUSHIHARA, Daisuke[*1]; ASAKA, Toru[1]; FUKUDA, Koichiro[1]; SAKURAI, Hiroya[2]
1. Nagoya Institute of Technology, Japan
2. National Institute for Materials Science, Japan

(29-P-S14-14) Trigonal-Planar Low Spin Co 2+ in a Layered Mixed Polyhedral Network from Topotactic Reduction

ZHOU, Lijia[*1]; HAN, YiFeng[1]; LI, Guobao[2]; YANG, Xiaoyan[1]; ALLIX, Mathieu[3]; HUANG, Qingzhen[4]; XIONG, Jin[2]; WANG, Bingwu[2]; YIN, Congling[1]; KUANG, Xiaojun[1]
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4. NIST Center for Neutron Research, National Institute of Standards and Technology, United States

(29-P-S14-15) Water resistance of AlN whiskers depending on the shape

NAKAMURA, Akihito[*1]; HARADA, Shunta[1,2]; MATSUMOTO, Masaki[3]; WATANABE, Shota[3]; TAGAWA, Miho[1,2]; UJIHARA, Toru[1,2,3,4]
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2. CIRFE, IMaSS, Nagoya University, Japan
3. U-MaP Co., Ltd., Japan
4. GaN-OIL, AIST, Japan

(29-P-S14-16) In-situ neutron diffraction measurement of multilayer piezoelectric actuator under cyclic electric field

KAWASAKI, Takuro[*1]; HARJO, Stefanus[1]; GONG, Wu[1,2]; AIZAWA, Kazuya[1]
1. J-PARC Center, Japan Atomic Energy Agency, Japan
2. Center for Elements Strategy Initiative for Structural Materials, Kyoto University, Japan

(29-P-S14-17) CNN application for lattice parameter determination using HOLZ lines

UESUGI, Fumihiko[*1]; MITSUISHI, Kazutaka[1]; KIMOTO, Koji[1]; ISHII, Masashi[1]
1. NIMS, Japan

(29-P-S14-18) Crystal structure analysis of the oxide ion conductor $BaNdInO_4$ by high-temperature neutron diffraction

SHIGA, Hitomi[*1]; SHIRAIWA, Masahiro[1]; ZHANG, Wenrui[1]; YASUI, Yuta[1]; TEJIMA, Hiroaki[1]; FUJII, Kotaro[1]; MURAKAMI, Taito[1]; HAGIHALA, Masato[2]; TORII, Shuki[2]; MIAO, Ping[2]; KAMIYAMA, Takashi[2]; YASHIMA, Masatomo[1]
1. Tokyo Institute of Technology, Japan
2. High Energy Accelerator Research Organization (KEK), Japan

(29-P-S14-19) Analytical Study on Origins of AlON (Aluminum Oxynitride) Properties

YOSHINO, Haruhiko[*1]; OGAWA, Shuhei[2]; OHKOSHI, Kazuto[2]; MIYAKAWA, Naomichi[2]; YAMAMOTO, Yuichi[1]

1. Innovative Technology Laboratories, AGC Inc., Japan
2. Materials Integration Laboratories, AGC Inc., Japan

(29-P-S14-20) Discovery of a new oxide-ion conductor $BaLaZn_3GaO_7$

TEJIMA, Hiroaki[*1]; FUJII, Kotaro[1]; NIWA, Eiki[1]; MURAKAMI, Taito[1]; YASHIMA, Masatomo[1]
1. Tokyo Institute of Technology, Japan

16:Single Crystals, Thin Films and Microstructures in Rechargeable Battery Systems

(29-P-S16-01) Growth and characterization of lithium ion conductor $La_{2/3-x}Li_{3x}TiO_3$ single crystals by the traveling solvent floating zone method

MARUYAMA, Yuki[*1]; MINAMIMURE, Shiho[1]; NAGAO, Masanori[1]; WATAUCHI, Satoshi[1]; TANAKA, Isao[1]
1. University of Yamanashi, Japan

(29-P-S16-02) Effects of FEC for the High Voltage Durability on Fluoroalkylsilane Monolayer Coated $LiNi_{0.5}Mn_{1.5}O_4$ Electrodes

TODOKI, Hitomi[*1]; ZETTSU, Nobuyuki[2,3]; TESHIMA, Katsuya[2,3]
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2. Department of Materials Chemistry, Faculty of Engineering, Shinshu University, Japan
3. Research Initiative for Supra-Materials, Shinshu University, Japan

(29-P-S16-03) High C Rate Characteristics in Ultra-thin Solid Electrolyte Layer Coated Cathodes

NEMOTO, Kazune[*1]; ZETTSU, Nobuyuki[2,3]; TESHIMA, Katsuya[2,3]
1. Department of Engineering, Graduate School of Science and Technology, Shinshu University, Japan
2. Department of Materials Chemistry, Faculty of Engineering, Shinshu University, Japan
3. Research Initiative for Supra-Materials, Shinshu University, Japan

(29-P-S16-04) The Impacts of Masonry Structured Assembly of Solid Electrolyte on The Suppression of Lithium Dendrite Growth in Lithium-ion Based Batteries

NAKANISHI, Takumi[*1]; TESHIMA, Katsuya[2,3]; ZETTSU, Nobuyuki[2,3]
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2. Department of Materials Chemistry, Faculty of Engineering, Shinshu University, Japan
3. Research Initiative for Supra-Materials, Shinshu University, Japan

(29-P-S16-05) Ion migration in spinel Li4Ti5O12 at atomic scale under electric filed

ZHANG, Qinghua[*1]; LU, Xia[2]; GU, Lin[1]
1. Institute of Physics, Chinese Academy of Sciences, China
2. School of Materials, Sun Yat-Sen University, China

(29-P-S16-06) Structural Transition Kinetics and Charge Compensation of the P2-Na0.78Al0.05Ni0.33Mn0.60O2 Cathode for Sodium Ion Batteries revealed by STEM

YANG, Xin-An[*1]; LU, Xia[2]; CAO, Dapeng[2]
1. Institute of Physics, Chinese Academy of Sciences, China
2. Beijing University of Chemical Technology, China

(29-P-S16-07) Low dose imaging of light elements of ZSM-5 zeolite using iDPC-STEM

CHEN, Xiao[*1]; SHEN, Boyuan[1]; WEI, Fei[1]
1. Beijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, China

(29-P-S16-08) Electronic structure analysis of Li_2MnO_3 thin film using *operando* hard X-ray photoelectron spectroscopy

HIKIMA, Kazuhiro[*1,2]; KIUCHI, Hisao[3]; SHIMIZU, Keisuke[4]; SUZUKI, Kota[1,4]; HIRAYAMA, Masaaki[1,4]; MATSUBARA, Eiichiro[3]; KANNO, Ryoji[1,4]
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3. Office of Society-Academia Collaboration for Innovation, Kyoto University, Japan
4. All-Solid-State Battery Unit, Institute of Innovative Research, Tokyo Institute of Technology, Japan

(29-P-S16-09) Grobal and Local Li-ion Conductivity in $(La,Li)TiO_3$ electrolyte

ISHIKAWA, Ryo[*1,2]; SASANO, Shun[1]; KAWAHARA, Kazuaki[1]; KIMURA, Teiichi[3]; IKUHARA, Yumi[3]; SHIBATA, Naoya[1,3]; IKUHARA, Yuichi[1,3]
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2. Japan Science and Technology Agency, PRESTO, Japan
3. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Japan

20:Ceramics for Rechargeable Energy Storage

(29-P-S20-01) Realization of high rate performance of sheet type all-solid-state batteries by slurry coating

TAKAHASHI, Masanari[*1,2]; KATO, Atsutaka[1]; YAMAMOTO, Mari[1,2]
1. Osaka Research Institute of Industrial Science and Technology, Morinomiya Center, Japan
2. Graduate School of Materials Science, Nara Institute of Science and Technology, Japan

(29-P-S20-02) Fabrication of silicon-composite electrodes by slurry coating for all-solid-state batteries

YAMAMOTO, Mari[*1]; TERAUCHI, Yoshihiro[1]; SAKUDA, Atsushi[2]; KATO, Atsutaka[1]; TAKAHASHI, Masanari[1,3]
1. Osaka Research Institute of Industrial Science and Technology, Japan
2. Osaka Prefecture University, Japan
3. Nara Institute of Science and Technology, Japan

(29-P-S20-03) Development of Self-supporting Thin-layer Solid Electrolyte Sheets for All-Solid-State Rechargeable Lithium Batteries

HASEGAWA, Yasunori[*1]; SONOMURA, Hirosuke[1]; TAMURA, Tomoko[1]; MURAKAMI, Shuichi[1]; SATOH, Kazuo[1]; SAKURAI, Yoshiaki[1]
1. Osaka Research Institute of Industrial Science and Technology, Japan

(29-P-S20-04) Activated carbon-sulfur composite positive electrode for all-solid-state sodium-sulfur batteries

ANDO, Taka[*1]; SAKUDA, Atsushi[1]; TATSUMISAGO, Masahiro[1]; HAYASHI, Akitoshi[1]
1. Osaka Prefecture University, Japan

(29-P-S20-05) Preparation of Oxide-Based Na Ion Battery by Tape-Casting Laminate NASICON-type Ceramics

KASHIHARA, Takehiro[*1]; HASEGAWA, George[1]; AKAMATSU, Hirifumi[1]; HAYASHI, Katsuro[1]
1. Department of Applied Chemistry, Graduated School of Engineering, Kyushu University, Japan

(29-P-S20-06) Na^+ conduction properties of rare earth-free Narpsio glass-ceramics in the system Na_2O-Fe_2O_3-SiO_2

KAWADA, Koji[*1]; YOSHIDA, Naoya[1]; YAMASHITA, Kimihiro[1,2]; OKURA, Toshinori[1]
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(29-P-S20-07) Reaction mechanism in liquid-phase synthesis using acetonitrile for $Na_{3-x}PS_{4-x}Cl_x$ solid electrolytes

ITO, Akane[*1]; MASUZAWA, Naoki[1]; YUBUCHI, So[1]; SAKUDA, Atsushi[1]; TATSUMISAGO, Masahiro[1]; HAYASHI, Akitoshi[1]
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(29-P-S20-08) Liquid phase synthesis of Li_2S-P_2S_5 solid electrolyte using microwave

MANIWA, Riku[*1]; ROSERO-NAVARRO, Nataly Carolina[2]; MIURA, Akira[2]; TADANAGA, Kiyoharu[2]
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(29-P-S20-09) Preparation and characterization of Li_3BS_3 glassy electrolyte via mechanochemical process

INOUE, Ayane[*1]; NAGAO, Kenji[1]; SAKUDA, Atsushi[1]; TATSUMISAGO, Masahiro[1]; HAYASHI, Akitoshi[1]
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(29-P-S20-10) Preparation of Air-Stable Solid Electrolytes Li_3SbS_4-LiI by Ion Exchange Process

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1. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Japan
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(29-P-S20-11) Synthesis and characterization of Li-argyrodite $Li_{7-x}PS_{6-x}Cl_x$ electrolyte for the utilization of Li metal negative electrode

UMEDA, Tomohito[*1]; SUYAMA, Motoshi[1]; YUBUCHI, So[1]; SAKUDA, Atsushi[1]; TATSUMISAGO, Masahiro[1]; HAYASHI, Akitoshi[1]
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(29-P-S20-12) Fabrication of a solid-state lithium secondary battery using a lithium-ion-conducting $Li_4B_4Al_3O_{12}Cl$-based glass-ceramic

SAITO, Mayu[*1]; KAJIHARA, Koichi[1]; SHOJI, Mao[1]; KIZUKI, Yota[1]; MUNAKATA, Hirokazu[1]; KANAMURA, Kiyoshi[1]
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(29-P-S20-13) Sintering of $Li_{6.5}La_3Zr_{1.5}Ta_{0.5}O_{12}$ oxide solid electrolyte using Li_3BO_3 as sintering additive

WATAMANE, Haruna[*1]; ROSERO-NAVARRO, Nataly Carolina[2]; MIURA, Akira[2]; TADANAGA, Kiyoharu[2]
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(29-P-S20-14) Sr-substitution Effect for Sinterability of Garnet-like Lithium Ion Conductor LLZ-Ga

OHMORI, Kenta[*1]; SUGIMOTO, Kaoru[1]; MORI, Daisuke[1]; MATSUDA, Yasuaki[2]; TAMINATO, Sou[1]; TAKEDA, Yasuo[1]; IMANISHI, Nobuyuki[1]
1. Department of Chemistry for Materials, Mie University, Japan
2. Department of Applied Chemistry, Osaka Institute of Technology, Japan

(29-P-S20-15) Crystal structure and lithium ion conductivity of Garnet-type Li7-3xGaxLa3Zr2O12

AKIYAMA, Naoya[*1,2]; KATAOKA, Kunimitsu[1]; ISHIDA, Naoya[2]; IDEMOTO, Yasushi[2]; AKIMOTO, Junji[1]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Department of Pure and Applied Chemistry, Tokyo University of Science, Japan

(29-P-S20-16) Structure and Ionic Conductivity of Li Boracite, $Li_4B_4Ga_3O_{12}Cl$

FUSHIMI, Kazuna[*1]; AOKI, Yuto[1]; KATSUMATA, Tethuhiro[1]
1. School of Science, Tokai University, Japan

(29-P-S20-17) Synthesis of monodispersed spinel oxide nanoparticles for Mg secondary battery

SAMUKAWA, Kouta[*1]; KOBAYASHI, Hiroaki[1]; HONMA, Itaru[1]
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

(29-P-S20-18) Crystal and Electronic Structures of Phosphate-Based Positive Electrode Materials and Their Application to Mg Rechargeable Battery

KOYANAGAWA, Yudai[*1]; KITAMURA, Naoto[1]; ISHIDA, Naoya[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S20-19) Crystal Structure Analysis using Neutron Diffraction and Mg Rechargeable Cathode Property of Chemically Delithiated $Li_{1-x}Ni_{0.5}Mn_{0.5}O_2$

TSUKADA, Kenta[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
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(29-P-S20-20) Charge-Discharge Mechanism and Cathode Propery of Chemically Delithiated $Li_{1.2-x}Mn_{0.54}Ni_{0.13}Co_{0.13}O_{2-\delta}$ as Mg Rechargeable Battery Cathode Material

SATAKE, Yoshihito[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S20-21) Synthesis, Crystal Structure and Electrochemical Properties of Rock-salt Type $MgMO_2$(M=Ni,Mn,Co) as Cathode Materials of Mg Secondary Battery

KAWATA, Tomoka[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S20-22) Electrode properties average and local structures of MgM_2O_4 (M=Co, Mn) and fluorine modification

TANABE, Yuhei[*1]; KITAMURA, Naoto[1]; ISHIDA, Naoya[1]; IDEMOTO, Yasushi[1]
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(29-P-S20-23) Synthesis, Cathode Property and Crystal, Electronic and Local Structure of $Mg_2Mo_{3-x}M_xO_8$ (M=Nb, Ti, W) as Mg Rechargeable Battery Cathode Material

NAKAMURA, Yuta[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S20-24) Average, Electronic and Local Structure and Magnesium Battery Properties of Spinel Type Cathode Material $MgCo_{2-x}Mn_xO_4$

ICHIYAMA, Mai[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S20-25) Evaluation of the Mg-ion conductivity and phase stability of Mg-ion conductor $MgZr_4(PO_4)_6$ by DFT method

NAKANO, Koki[*1]; NODA, Yusuke[2]; TANIBATA, Naoto[1,3]; NAKAYAMA, Masanobu[1,2,3,4]; KAJIHARA, Koichi[5]; KANAMURA, Kiyoshi[5]
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3. Elements Strategy Initiative for Catalysts and Batteries (ESICB), Kyoto University, Japan
4. Frontier Research Institute for Materials Science (FRIMS), Nagoya Institute of Technology, Japan
5. Department of Applied Chemistry for Environment, Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University, Japan

(29-P-S20-26) Preparation and characterization of $NiMn_2O_4$ particles toward supercapacitor

applications
ISHITSUKA, Hikaru[*1]; SUZUKI, Yoshikazu[2]
1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Japan
2. Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

(29-P-S20-27) A combined theoretical-experimental investigation of energy storage behavior of reduced graphene oxide for micro-supercapacitors with ultrahigh capacitance and energy density
YOO, Jungjoon[*1]; BYUN, Segi[2]; LEE, Chan-Woo[3]
1. Separation and Conversion Materials Laboratory, Energy Materials and Process Research Division, Korea Institute of Energy Research, Korea
2. Energy Materials Laboratory, Energy Materials and Process Research Division, Korea Institute of Energy Research, Korea
3. Platform Technology Laboratory, Energy Materials and Process Research Division, Korea Institute of Energy Research, Korea

(29-P-S20-28) Preparation of Boron-Doped Na_xMnO_2 Cathode Materials for a Sodium-Ion Battery by Microwave Heating Method
SUZUKI, Ryuya[*1]; TSUKADA, Wataru[1]; KOMIYA, Kazuki[1]; MATSUMAE, Yoshiharu[1]; HIGUCHI, Masashi[1]
1. Tokai University, Japan

(29-P-S20-29) Electrochemical Properties of Ti-based Negative Electrode Materials with PAN-based Binder for Sodium-ion Batteries
UMEZAWA, Raizo[*1]; YABUUCHI, Naoaki[1]; YAMADA, Masahide[2]; SUZUKI, Shigeru[2]
1. Yokohama National University, Japan
2. Denka Company Limited, Japan

(29-P-S20-30) Li_3PO_4 integrated $LiNiO_2$ as High-Capacity Positive Electrode Materials
IKEDA, Naohiro[*1]; YABUUCHI, Naoaki[1]
1. Graduate School of Engineering Science, Yokohama National University, Japan

(29-P-S20-31) Li_2TiO_3-$LiVO_2$ Binary Oxides as High Capacity Positive Electrode Materials
KONUMA, Itsuki[*1]; YABUUCHI, Naoaki[1]
1. Graduate School of Engineering Science, Yokohama National University, Japan

(29-P-S20-32) Comparative Study on $LiMnO_2$ Polymorphs
SATO, Takahito[*1]; WATANUKI, Ryuta[2]; YABUUCHI, Naoaki[2]
1. Department of Applied Chemistry, Tokyo Denki University, Japan
2. Department of Chemistry and Life Science, Yokohama National University, Japan

(29-P-S20-33) Charge reaction mechanisms of rocksalt-type $Li_{1.2}Mn_{0.4}Ti_{0.4}O_2$ cathode oxides using first principals calculations
KONDO, Sayaka[*1]; TANIBATA, Naoki[1,2]; NAKAYAMA, Masanobu[1,2,3,4]; YABUCHI, Naoaki[4,5]
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4. Unit of Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University, Japan
5. Department of Chemistry and Life Science, Yokohama National University, Japan

(29-P-S20-34) Operating temperature dependence of average, local and electronic structures in the charge-discharge process of 0.4Li2MnO3-0.6LiMn1/3Ni1/3Co1/3O2 using quantum beam and first principles calculation
KOITABASHI, Yuiko[*1]; ISHIDA, Naoya[1]; KITAMURA, Naoto[1]; IDEMOTO, Yasushi[1]
1. Tokyo University of Science, Japan

(29-P-S20-35) Phase Relation and Electrochemical Properties of Li2Mn1-xRuxO3
OHNUMA, Ryo[*1]; MORI, Daisuke[1]; TAMINATO, Sou[1]; IMANISHI, Nobuyuki[1]
1. Department of Chemistry for Materials, Mie University, Japan

(29-P-S20-36) Investigation of Battery Characteristics of Fe Substituted $LiMn_2O_4$
MIKAWA, Shino[*1]; HASHIZUME, Takashi[2]; SAIKI, Atsushi[3]
1. Graduate School of Science and Engineering for Education, University of Toyama, Japan
2. Collaboration and Promotion Center for Industry and Academia, University of Toyama, Japan
3. Graduate School of Science and Engineering for Research, University of Toyama, Japan

(29-P-S20-37) Synthesis of alpha-$LiAlO_2$ with layered NaCl-type structure by PVP-assisted sol-gel method
SHIBATA, Ayaka[*1]; ARACHI, Yoshinori[1]
1. Kansai University, Japan

(29-P-S20-38) Surface and Electrochemical Properties of Hydrogenated $Li_4Ti_5O_{12}$ Anode Materials for High-Power Li-Ion Batteries
EOM, Ji-Yong[*1]; KIM, Seong-In[1]; LEE, Da-Yeon[1]; KANG, Ji-Hoon[1]
1. Korea Automotive Technology Institute, Korea

(29-P-S20-39) Electrochemical Characteristics of $Li_4Ti_5O_{12}$/Graphene/Carbon Nano Tubes for Lithium Ion Battery
NA, Byung-Ki[*1]; KIM, Hyeon-Su[1]; SEO, Jin-Seong[1]
1. Department of Chemical Engineering, Chungbuk National University, Korea

(29-P-S20-40) Development of Tin Oxide-Carbon Nano Composite for Energy Applications Heated by Microwave
TAKAYAMA, Sadatsugu[*1]; LINK, Guido[2]; TOKITANI, Masayuki[1]; NAGATA, Daisuke[1]; HAYAKAWA, Yukio[3]; FUKAYA, Haruhiko[3]; JELONNEK, John[2]
1. National Institute for Fusion Science, Japan
2. IHM, Karlsruhe Institute of Technology (KIT), Germany
3. National Institute of Advanced Industrial Science and Technology, Japan

(29-P-S20-41) Electrical Conductivity of Olivine-Type $MgMSiO_4$
IKEDA, Nnami[*1]; HASEGAWA, George[1]; AKAMATSU, Hirofumi[1]; HAYASHI, Katsuro[1]
1. Department of Engineering, Kyushu University, Japan

21:Specific Reaction Field and Material Fabrication Design

(29-P-S21-01) Synthesis of Eu^{3+}-doped Hydrous Titania and Hydrothermal Conversion to Metal Titanate Particles
HOSONO, Keita[*1]; KOJIMA, Takashi[2]
1. Department of Applied Chemistry and Biotechnology, Graduate School of Engineering, Chiba University, Japan
2. Department of Applied Chemistry and Biotechnology, Graduate School of Engineering, Chiba University, Japan

(29-P-S21-02) Synthesis of Spherical Alumina and Strontium Aluminate Particles by Chemical Solution Deposition
KONISHI, Yurie[*1]; KOJIMA, Takashi[1]; UEKAWA, Naofumi[1]
1. Department of Applied Chemistry and Biotechnology Graduate School of Engineering Chiba University, Japan

(29-P-S21-03) Process study on the synthesis of monodisperse TiO_2 spheres
MATSUO, Minami[*1]; ENOMOTO, Naoya[2]
1. Advanced chemical science and engineering course, National Institute of Techonology, Ariake College, Japan
2. Department of Creative Engineering, National Institute of Techonology, Ariake College, Japan

(29-P-S21-04) Room-temperature synthesis of γ-Ga_2O_3 nanoparticles from gallium metal using ultrasonic irradiation

TAKANO, Yuki[*1]; HAYASHI, Yamato[1]; FUKUSHIMA, Jun[1]; TAKIZAWA, Hirotsugu[1]
1. Tohoku University, Department of Applied Chemistry, Graduate School of Engineering, Japan

(29-P-S21-05) Hydrothermally tolerant sulfonyl group (HTS) on carbon surface and preparation of high HTS carbon in hydrothermal carbonization

GOTO, Yasuto[*1]; WATANABE, Taiga[1]; HIRAGA, Yuya[2]; WATANABE, Masaru[2]
1. Graduate School of Engineering, Tohoku University, Japan
2. Department of Chemical Engineering, Tohoku University, Japan

(29-P-S21-06) Sonochemical Synthesis of Dolomite Using De-K ion bittern

KAMEI, Shinnosuke[*1]; MATSUMOTO, Masakazu[2]; FURUKAWA, Shigeki[1]
1. Department of Sustainable Engineering, College of Industrial Technology, Nihon University, Japan
2. Department of Liberal Arts and Basic Sciences, College of Industrial Technology, Nihon University, Japan

(29-P-S21-07) Hydrothermal Synthesis of Alkali Metal Titanate Particles and Reconversion to Titania by Acid Treatment

KIMURA, Yuki[*1]; KOJIMA, Takashi[1]; KATO, Mana[1]; UEKAWA, Naofumi[1]
1. Department of Applied Chemistry and Biotechnology, Graduate School of Engineering, Chiba University, Japan

(29-P-S21-08) Synthesis of Co-lean and Co-rich $Li_2CoTi_3O_8$-based pigments

KIMURA, Saho[*1]; SUZUKI, Yoshikazu[2]
1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Japan
2. Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

(29-P-S21-09) Fabrication and CO_2 absorption behavior of CO_2 absorbent layered composite Li_4SiO_4/SiO_x/Si with self-heating function

ISHIZAKI, Yuki[*1]; KUSANO, Hiroshi[1]; WATANABE, Mizuki[1]; OH-ISHI, Katsuyoshi[1]; OKA, Kengo[2]; KOBAYASHI, Ryota[3]; MAJIMA, Yutaka[4]
1. Department of Applied Chemistry, Faculty of Science and Engineering, Chuo University, Japan
2. Department of Applied Chemistry, Faculty of Science and Engineering, Kinki University, Japan
3. Department of Chemistry and Energy Engineering, Faculty of Science and Engineering, Tokyo City University, Japan
4. Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan

(29-P-S21-10) Phase Transfer Protocol Behaviors of Water-Dispersed Au-Pt Alloy Nanoparticles into Toluene with 1-Hexanethiol

KURODA, Rikuto[*1]; NAKAMURA, Takahiro[1]; NAKAGAWA, Masaru[1]
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

(29-P-S21-11) Synthesis and evaluation of oxygen storage capacity (OSC) of YMnO3 nanoparticles

OTOMO, Mayu[*1]; MIYAKE, Amiko[1]; ASAKURA, Yusuke[1]; YIN, Shu[1]
1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

24:Advanced Wear Resistant Materials: Tribology, Coatings and Reliability

(29-P-S24-01) A STUDY ON THE MECHANICAL PROPERTIES OF THE AlCr BASED ALLOY PRODUCED BY HOT PRESS

OH, Se Pil[*1,2]; LEE, Han Chan[1]; JUNG, Hun[1,2]; YOON, Hae Won[1,3]; SHIN, Paik Kyun[2]; MOON, Koung Il[1]
1. Heat treatment R&D group, Korea Institute of Industrial Technology, South Korea.
2. Department of Electrical Engineering, Inha University, South Korea.
3. Department of Materials Engineering, Busan University, South Korea.

(29-P-S24-02) Influence of compound layer thickness of AISI 4140 steel by plasma nitriding treatment

KIM, BUM SOO[*1,2]; PARK, HYUN JUN[1,2]; KIM, SANG SUB[2]; MOON, KYOUNG IL[1]
1. Korea Institute of Industrial Technology(KITECH). south korea
2. Inha University. south korea

(29-P-S24-03) Mechanical properties and Friction characteristics of Mo-Cu-N Coatings deposited by Single Alloy Target

KIM, Soobyn[*1]; LEE, Han Chan[1]; YOON, Hae Won[1]; JUNG, Hun[1,2]; MOON, Kyoung Il[1]
1. Korea Institute of Industrial Technology, Korea
2. Inha University, Korea

(29-P-S24-04) The mechanical properties Mo-Cu-X(X=Si, Zr, V)-N coatings deposited by magnetron sputtering process with single alloying targets.

JUNG, Hun[*1,2]; LEE, Han Chan[1]; YOON, Hae Won[1,3]; OH, Se Pil[1,2]; KIM, Soo Byn[1,4]; SHIN, Paik Kyun[2]; MOON, Kyung Il[1]
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2. Department of Electrical Engineering, Inha University, South Korea.
3. Department of Materials Engineering, Busan University, South Korea.
4. Department of Environment & Energy Engineering, Sungshin University, South Korea.

25:Direct Thermal-to-Electrical Energy Conversion Materials and Thermal Energy Harnessing Challenges

(29-P-S25-01) Anomalous Photo-Thermoelectric Effects of Platinum Oxide on Tungsten Trioxide, Controllability of n- and p-type Thermoelectricity

IRIE, Hiroshi[*1,2]; OMURA, Kaichi[2]; SHIMOYAMA, Kohei[2]
1. Clean Energy Research Center, University of Yamanashi, Japan
2. Integrated Graduate School of Medicine, Engineering and Agricultural Sciences, University of Yamanashi, Japan

(29-P-S25-02) Thermoelectric and photoelectric characteristics of graded films using Nb-doped $SrTiO_3$

INOMOTO, Tatsuhiko[*1]; MIURA, Noboru[1]
1. Department of Electronics and Bioinformatics, School of Science and Technology, Meiji University, Japan

(29-P-S25-03) Thermoelectric Performance of Mo-doped bulk In_2O_3

KLICH, Wojciech[*1]; SUEKUNI, Koichiro[1,2]; OHTAKI, Michitaka[1,2]
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2. Transdisciplinary Research and Education Center for Green Technologies, Kyushu University, Japan

(29-P-S25-04) Anisotropic Thermoelectric Properties of $W_{18}O_{49}$ Prepared by SPS

TRAN, Nhat QuangMinh[*1]; SUEKUNI, Koichiro[1,2]; OHTAKI, Michitaka[1,2]
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2. Transdisciplinary Research and Education Center for Green Technologies, Kyushu University, Japan

(29-P-S25-05) Synthesis and Thermoelectric Properties of β-pyrochlore Oxide $CsW_{2-x}Ru_xO_6$

MANEEYOM, Sasikan[*1]; SUEKUNI, Koichiro[1,2]; OHTAKI, Michitaka[1,2]
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(29-P-S25-06) Synthesis of β type Iron Silicide by Mechanical Alloying

NAGATA, Kou[*1]; ITO, Keisuke[1]; SATO, Yuuki[1]; YOSHIKADO, Shinzo[1]
1. Doshisha University, Japan

(29-P-S25-07) Highly Reliable High Temperature Metallization Characteristics of Ti, Mo and W for Skutteruditte Thermoelectric Devices

PARK, Sang Hyun[*1]; SONG, Jin-Seop[1]; KIM, Yeong Seon[1]; YOON, Hana[1]; YOO, Chung-Yul[1]
1. Korea Institute of Energy Research, Japan

29:Liquid-mediated Structuring of Ceramics and Organic-inorganic Hybrid Materials

(29-P-S29-01) Nanostructured Hydroxyapatite Fabricated from Amorphous Calcium Phosphate and Poly(vinyl alcohol) Aqueous Solution

KAKIAGE, Masaki[*1]
1. Gunma University, Japan

(29-P-S29-02) Hydrogel templated mineralization for nano scale TEM observation of hydrogel network

KIYAMA, Ryuji[*1]; NONOYAMA, Takayuki[2]; GONG, Jian Ping[2,3,4]
1. Transdisciplinary Life Science Course, Graduate School of Life Science, Hokkaido University, Japan
2. Faculty of Advanced Life Science, Hokkaido University, Japan
3. Global Station for Soft Matter, Global Institution for Collaborative Research and Education, Hokkaido University, Japan
4. Institute for Chemical Reaction Design and Discovery, Hokkaido University, Japan

(29-P-S29-03) Formation of RGB flexible colored pattern film on PET using photo-acid generator and siloxane group modified acrylic resin

TAKAHASHI, Karin[*1]; OHISHI, Tomoji[1]
1. Shibaura Institute of Technology, Japan

(29-P-S29-04) Preparation of gold particles / cellulose nanocomposites using wet-type jet mill

FURUTANI, Mitsuaki[*1]; FUJII, Eiji[1]
1. Industrial Technology Center of Okayama Prefecture, Japan

(29-P-S29-05) Preparation and Refractive Index of Titania Gel Film on Plastic Substrate by Sol-Gel Method

MATSUSHITA, Nana[*1]; KOZUKA, Hiromitsu[1]
1. Kansai University, Japan

(29-P-S29-06) Optical Properties and Thermoplastic Properties of Amorphous Materials Prepared from Titanium Alkoxide Solutions Containing Phthalic Acid

TSUTSUI, Ryo[*1]; KOZUKA, Hiromitsu[1]
1. Kansai University, Japan

(29-P-S29-07) Preparation of cellulose/silica hybrid thick films by the sol-gel method and their waterproof properties

KASASAKU, Mamoru[*1]; KOZUKA, Hiromitsu[2]; TADANAGA, Kiyoharu[3]; YONEDA, Hirokazu[4]; SHINKAI, Seiji[4]
1. Graduate School of Science and Engineering, Kansai University, Japan
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3. Faculty of Engineering, Hokkaido University, Japan
4. Advanced Core Tech Laboratory, LIXIL, Japan

(29-P-S29-08) Formation and gas barrier characteristics of polysilazane-derived silica coatings formed by photoirradiation on organic films

ISONO, Satoki[*1]; OHISHI, Tomoji[1]
1. Shibaura Institute of Technology, Japan

(29-P-S29-09) Highly bendable and rapid response ceramic film thermistors

NAKAJIMA, Tomohiko[*1]; TSUCHIYA, Tetsuo[1]
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology, Japan

(29-P-S29-10) Possibility of the Relaxation of Residual In-plane Stress of Sol-gel-derived Ceramic Thin Films at Room Temperature

NISHIMURA, Yuki[*1]; KOZUKA, Hiromitsu[1]
1. Kansai university, Japan

(29-P-S29-11) Synthesis of Mesoporous $SrFeO_x$ Particles from Hydrogarnet Precursor

OTAGURO, Hikaru[*1]; HASEGAWA, George[1]; AKAMATSU, Hirofumi[1]; HAYASHI, Katsuro[1]
1. Kyushu University, Japan

(29-P-S29-12) Preparation of Organosiloxane-based Mesoporous Materials using Silica Colloidal Crystals as a Template

MURAMOTO, Naho[*1]; SUGIYAMA, Tomoaki[1]; MATSUNO, Takamichi[1]; URATA, Chihiro[2]; WADA, Hiroaki[1]; KURODA, Kazuyuki[1,3]; SHIMOJIMA, Atsushi[1,3]
1. Department of Applied Chemistry, Waseda University, Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan
3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

(29-P-S29-13) Enhanced Quantum Yield of Nanographenes Incorporated in Supermicroporous Silicas and the Co-Adsorption Effect of Water Molecules

FUJIMAKI, Yasuto[*1]; WATANABE, Hiroto[1]; HAYASHI, Kosei[1]; IMAI, Hiroaki[2]
1. Tokyo Metropolitan Industrial Technology Research Institute, Japan
2. Department of Applied Chemistry, Faculty of Science and Technology, Keio University, Japan

(29-P-S29-14) Synthesis of Reactive Siloxane Networks Containing Double-Three-Ring Units

KISHI, Masafumi[*1]; KODAMA, Satoshi[1]; WADA, Hiroaki[1]; KURODA, Kazuyuki[1,2]; SHIMOJIMA, Atsushi[1,2]
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(29-P-S29-15) Preparation of ITO nanoparticles with high water dispersibility and high Sn doping amount

SUZUKI, Ryoko[*1]; MAKI, Sachiko[2]; KANIE, Kiyoshi[2]; MURAMATSU, Atsushi[2]
1. Nikon corporation, Japan
2. IMRAM, Tohoku University, Japan

(29-P-S29-16) Preparation of Colloidal Monodispersed Hollow Siloxane-based Nanoparticles with Controlled Shell Structures

WATANABE, Tenkai[*1]; YAMAMOTO, Eisuke[2]; UCHIDA, Saki[1]; SHIMOJIMA, Atsushi[1,3]; WADA, Hiroaki[1]; KURODA, Kazuyuki[1,3]
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2. Institute of Materials and Systems for Sustainability, Nagoya University, Japan
3. Kagami Memorial Research Institute for Materials Science and Technology, Waseda University, Japan

(29-P-S29-17) Influence of dispersing solvent on optical properties of lead halide perovskite nanocrystals

RO, Michi[*1]; SAITO, Norio[1]; KONDO, Yukishige[1]
1. Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, Japan

(29-P-S29-18) Synthesis of TiO_2@ZrO_2 core-shell nanosheet composites using surface modification

TOGASHI, Ryo*1; TAKIMOTO, Daisuke1; HIDESHIMA, Sho1,2; MOCHIZUKI, Dai1,3; SUGIMOTO, Wataru1,2
1. Faculty of Textile Science and Technology, Shinshu University, Japan
2. Research Initiative for Supra-Materials (RISM), Shinshu University, Japan
3. Faculty of Engineering, Tokyo Denki University, Japan

(29-P-S29-19) Preparation of Solid-Solution $TiS_{2-x}Se_x$ Nanosheets by Liquid Phase Exfoliation

OSHIMA, Yosuke*1; TEZUKA, Keitaro1; NAKAMURA, Yuki1; SHAN, Yue Jin1
1. Graduate School of Engineering Utsunomiya University, Japan

(29-P-S29-20) Reaction Efficiency Control of SI-ATRP by Utilizing Interlayer of Zirconium Phosphonate

HONJO, Yutaro*1; ISHIHARA, Mayu1; GUEGAN, Regis2; SUGAHARA, Yoshiyuki1,3
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2. Grobal Center for Science and Engineering, Waseda University, Japan
3. Kagami Memorial Institute for Materials Science and Technology, Waseda University, Japan

(29-P-S29-21) Singular organic assemblies made of nonionic surfactants formed and stabilized by large nanosheets

GUEGAN, Regis*1; SUGAHARA, Yoshiyuki2
1. Global Center for Science and Engineering, Waseda University, Japan
2. Department of Applied Chemistry, School of Science and Engineering, Waseda University, Japan

30:Advanced Materials and Processing for Power Electronics Application

(29-P-S30-01) Formation of copper wiring in air by laser irradiation of copper complex film and improvement of adhesion to glass substrate

UETSUKI, Akira*1; OHISHI, Tomoji2
1. Shibaura Institute of Technology,Department of Applied Chemistry, Japan
2. Shibaura Institute of Technology,Department of Applied Chemistry, Japan

(29-P-S30-02) Effect of Temperature on Chip Welding Process with AuGa0.03 Alloy Solder

ZHAO, Zhihuan*1,2,3; GONG, Guanghao1; PAN, Yingyue2; CHEN, Chuanzhong1; LIU, Weili2; LIN, Lisong2; ZHANG, Li3
1. Key Laboratory for Liquid-Solid Structural Evolution and Processing of Materials (Ministry of Education), Department of Materials Science and Engineering, Shandong University, China
2. School of Mechanical and Electronic Engineering, Shandong Agricultural and Engineering University, China
3. Jinan Semiconductor Research Institute, China

(29-P-S30-03) Fabrication of GTO/ITO transparent diode by DC magnetron sputtering

ECHIMORO, Atsushi*1; TAZAWA, Ryutaro1; SHIOMI, Kazuya1; CHAIRUL, S, Imran1,2; MIKAWA, Michio3; MURAI, Kei-ichiro1; MORIGA, Toshihiro1
1. Tokushima University, Japan
2. Universiti Teknikal Malaysia Melaka, Malaysia
3. National Institute of Technology Kagawa College, Japan

(29-P-S30-04) Electrical properties of SnO_2 based resistor films prepared by ELAMOD and MOD process for high temperature applications

UZAWA, Yuko*1; NAKAJIMA, Tomohiko1; YAMAGUCHI, Iwao1; TSUCHIYA, Tetsuo1
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(29-P-S30-05) Development of Bi oxide thin film resistor for SiC power electronics

KOUNO, Keiko1; TSUBATA, Takako1; NAKAJIMA, Tomohiko1; TSUCHIYA, Tetsuo*1
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(29-P-S30-06) TCR control of flexible resistor thin film by using photo-reaction of hybrid solution process (PRHS)

UZAWA, Yuko*1; NAKAJIMA, Tomohiko1; TSUCHIYA, Tetsuo1
1. Advanced Coating Technology Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(29-P-S30-07) High-temperature electrical conductivities of $Li_{1.05}Mn_{1.8}Ga_{0.2}O_{4-\delta}$

KWAWI, Yasuko*1; ABE, Satoko1; TANIMURA, Makoto2; INOUE, Yasuhide3; KOYAMA, Yasumasa3; MUNAKATA, Fumio1
1. Faculty of Engineering, Tokyo City University, Japan
2. Yokohama National University, Japan
3. Waseda University, Japan

32:Crystalline Materials for Electrical, Optical and Medical Applications

(29-P-S32-01) Photoluminescence and Scintillation Properties of Ce-doped $Ca(Gd,Y)Al_3O_7$ Single Crystals

IGASHIRA, Kenta*1; NAKAUCHI, Daisuke1; FUJIMOTO, Yutaka2; KAWAGUCHI, Noriaki1; YANAGIDA, Takayuki1
1. Nara Institute of Science and Technology, Japan
2. Tohoku University, Japan

(29-P-S32-02) Scintillation properties of Pr-doped $Ga_2Si_2O_7$ single crystals

KANTUPTIM, Prom*1; AKATSUKA, Masaki1; KAWAGUCHI, Noriaki1; YANAGIDA, Takayuki1
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(29-P-S32-03) Scintillation properties of Tl-doped Cs_2BaBr_4 crystals

TAKAHASHI, Kentaro*1; KIMURA, Hiromi1; NAKAUCHI, Daisuke1; KAWAGUCHI, Noriaki1; YANAGIDA, Takayuki1
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(29-P-S32-04) Evaluation of radiation induced fluorescence properties in Tl-doped SiO_2 glasses prepared by the SPS method

HASHIMOTO, Kosuke*1; SHIRATORI, Daiki1; KIMURA, Hiromi1; KATO, Takumi1; KAWAGUCHI, Noriaki1; YANAGIDA, Takayuki1
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(29-P-S32-05) Float zone growth of $GdVO_4$:Eu single crystals for β -ray imaging

MATSUOKA, Minori*1; HIGUCHI, Mikio1; MASUBUCHI, Yuji1; NISHIKIDO, Fumihiko2; YAMAYA, Taiga2; KANEKO, Junichi1
1. Hokkaido University, Japan
2. National Institute of Radiological Science, Japan

(29-P-S32-06) Neutron-induced thermoluminescence of Tb^{3+}- and Dy^{3+}-doped $CaO-Al_2O_3-B_2O_3$-based glasses

KAWAMURA, Ichiro*1; KAWAMOTO, Hiroki1; FUJIMOTO, Yutaka1; KOSHIMIZU, Masanori1; OKADA, Go2; KOBA, Yusuke3; OGAWARA, Ryo3; SUDA, Mitsuru3; YANAGIDA, Takayuki4; ASAI, Keisuke1
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2. Kanazawa Institute of Technology, Japan
3. National Institutes for Quantum and Radiological Science and Technology, Japan
4. Nara Institute of Science and Technology, Japan

(29-P-S32-07) Neutron-induced thermoluminescence of Ce^{3+}-doped $CaO-Al_2O_3-B_2O_3$-based glasses

KAWAMURA, Ichiro*1; KAWAMOTO, Hiroki1; FUJIMOTO, Yutaka1; KOSHIMIZU, Masanori1; OKADA, Go2; KOBA, Yusuke3; OGAWARA, Ryo3; SUDA, Mitsuru3; YANAGIDA, Takayuki4; ASAI, Keisuke1
1. Tohoku University, Japan
2. Kanazawa Institute of Technology, Japan
3. National Institutes for Quantum and Radiological Science and

Technology, Japan
4. Nara Institute of Science and Technology, Japan

(29-P-S32-08) Evaluation of dosimetric properties of Tb-doped MgF_2 transparent ceramics

MATSUO, Tatsuya*[1]; KATO, Takumi[1]; KIMURA, Hiromi[1]; NAKAMURA, Fumiya[1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
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(29-P-S32-09) Development of crystalline $(Tl_{1-x}A_x)MgCl_3$ scintillators

ARAI, Miki*[1]; FUJIMOTO, Yutaka[1]; KOSHIMIZU, Masanori[1]; YANAGIDA, Takayuki[2]; ASAI, Keisuke[1]
1. Tohoku Univ., Japan
2. NAIST, Japan

(29-P-S32-10) $TlSr_2Cl_5$: New self-activated crystalline scintillator

ARAI, Miki*[1]; TAKAHASHI, Keisuke[1]; FUJIMOTO, Yutaka[1]; KOSHIMIZU, Masanori[1]; YANAGIDA, Takayuki[2]; ASAI, Keisuke[1]
1. Tohoku Univ., Japan
2. NAIST, Japan

(29-P-S32-11) Development of Halide-Based Scintillators Using 5d-4f Transition of Yb^{2+}

SEKINE, Dai[1]; KOSHIMIZU, Masanori*[1]; FUJIMOTO, Yutaka[1]; YANAGIDA, Takayuki[2]; ASAI, Keisuke[1]
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2. Nara Institute of Science and Technology, Japan

(29-P-S32-12) Development of Fast Scintillators Using CsCl-Based Crystals Exhibiting Auger-Free Luminescence

TAKAHASHI, Keisuke[1]; KOSHIMIZU, Masanori*[1]; FUJIMOTO, Yutaka[1]; YANAGIDA, Takayuki[2]; ASAI, Keisuke[1]
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2. Nara Institute of Science and Technology, Japan

(29-P-S32-13) Synthesis of Bi_2O_3 nanoparticles using various organic modifiers and application to plastic scintillators for X-ray detection

MAGI, Arisa*[1]; KAGAMI, Kei[1]; KOSHIMIZU, Masanori[1]; YOKO, Akira[1]; SEONG, Gimyeong[1]; TOMAI, Takaaki[1]; ADSCHIRI, Tadafumi[1]; FUJIMOTO, Yutaka[1]; KISHIMOTO, Shunji[2]; HARUKI, Rie[2]; NISHIKIDO, Fumihiko[3]; ASAI, Keisuke[1]
1. Tohoku University, Japan
2. High Energy Accelerator Research Organization, Japan
3. National Institutes for Quantum and Radiological Science and Technology, Japan

(29-P-S32-14) Development of plastic scintillators containing 1,1,2,2-tetraphenylethene exhibiting aggregation induced fluorescence properties

MAGI, Arisa*[1]; KOSHIMIZU, Masanori[1]; FUJIMOTO, Yutaka[1]; YANAGIDA, Takayuki[2]; ASAI, Keisuke[1]
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2. Nara Institute of Science and Technology, Japan

(29-P-S32-15) Luminescence properties of Ag-exchanged zeolite after X-ray irradiation

KAWAMOTO, Hiroki*[1]; KOSHIMIZU, Masanori[1]; FUJIMOTO, Yutaka[1]; ASAI, Keisuke[1]
1. Graduate School of Engineering, Tohoku University, Japan

(29-P-S32-16) Development of new intrinsic scintillator: Cs_2HfBr_6 and Cs_2ZrBr_6 crystals

FUJIMOTO, Yutaka*[1]; SAEKI, Keiichiro[1]; KOSHIMIZU, Masanori[1]; NAKAUCHI, Daisuke[2]; YANAGIDA, Takayuki[2]; ASAI, Keisuke[1]
1. Tohoku Univ., Japan
2. NAIST, Japan

(29-P-S32-17) New yellow-emitting crystalline phosphor Te^{4+}-activated Cs_2HfCl_6 for X-ray and gamma-ray detection

FUJIMOTO, Yutaka*[1]; SAEKI, Keiichiro[1]; NAKAUCHI, Daisuke[2]; FUKADA, Haruki[3]; YANAGIDA, Takayuki[2]; KAWAMOTO, Hiroki[1]; KOSHIMIZU, Masanori[1]; ASAI, Keisuke[1]
1. Tohoku Univ., Japan
2. NAIST, Japan
3. KIT, Japan

(29-P-S32-18) Evaluation of optically-stimulated luminescence properties of Tm-doped $NaMgF_3$ single crystal

TAKEBUCHI, Yuma*[1]; FUKUSHIMA, Hiroyuki[1]; KAWAGUCHI, Noriaki[1]; YANAGIDA, Takayuki[1]
1. Nara Institute of Science and Technology, Japan

(29-P-S32-19) Preparation and luminescence properties of *RE*-doped Li_2O-B_2O_3 glasses (*RE* = Eu, Tb)

ZHANG, ChuMing*[1]; HIGUCHI, Mikio[1]; MASUBUCHI, Yuji[1]; KANEKO, Junichi H.[1]; TAKETANI, Atsushi[2]; GOTO, Makoto[2]; TAKANASHI, Takaoki[2]; OTAKE, Yoshie[2]
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2. RIKEN, Japan

(29-P-S32-20) Spectroscopic properties and single crystal growth of K_2NiF_4- and melilite-type Yb-doped oxides

HIGUCHI, Mikio*[1]; CHIKAZOE, Shinya[1]; MASUBUCHI, Yuji[1]; OGAWA, Takayo[2]; WADA, Satoshi[2]
1. Hokkaido University, Japan
2. RIKEN, Japan

(29-P-S32-21) Glass forming region and optical properties of glasses in the TeO_2 - ZnO - MoO_3 system

ZAMYATINA, Evgeniya*[1]; NOSOV, Zahar[1]; ZAMYATIN, Oleg[1]
1. Lobachevsky State University of Nizhni Novgorod, Russia

(29-P-S32-22) Visualization of Stress Distribution from Outside the Biological Tissue by Near-infrared Mechanoluminescence Material

ISHII, Yoshiharu*[1,2]; UENO, Naohiro[3]; XU, Chao-Nan[1,2]
1. National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Department of Molecular and Material Sciences, Kyushu University, Japan
3. Department of Mechanical Engineering, Saga University, Japan

(29-P-S32-23) Single-crystal powder-plate phosphors for high-brightness lightening applications

VILLORA, Encarnacion G.*[1]; SHIMAMURA, Kiyoshi[1]; INOMATA, Daisuke[2]; ITO, Akira[2]
1. National Institute for Materials Science, Japan
2. Tamura Corp., Japan

(29-P-S32-25) Exploration of structure and physical properties of hexanuclear molybdenum cluster compounds crystallized by counter cation exchange

NONAKA, Yoji*[1]; SAITO, Norio[1]; LEMOINE, Pierric[2]; CORDIER, Stephane[2]; WADA, Yoshiki[3,4]; GRASSET, Fabien[3,4]; KONDO, Yukishige[1]; OHASHI, Naoki[3,4,5]
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2. Institut des Sciences Chimiques de Rennes (ISCR; UMR 6226), France
3. Electroceramics Group, National Institute for Materials Science (NIMS), Japan
4. 4 Laboratory for Innovative Key Materials and Structures (LINK UMI 3629), Japan
5. Materials Research Center for Element Strategy (MCES), Japan

(29-P-S32-26) Gas sensing properties of $Mg_xZn_{1-x}O$ thin films

ADACHI, Yutaka*[1]; SAITO, Noriko[1]; SAKAGUCHI, Isao[1]; SUZUKI, Taku[1]
1. National Institute for Materials Science, Japan

(29-P-S32-27) Performance Improvement of Multi-Piezo Material by Control of Crystal Structure

HARA, Hirotaka*[1,2]; WANG, Ruiping[1]; ZHENG, Xu-Guang[3]; NISHIBORI, Maiko[2]; XU, Chao-Nan[1,2]
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2. Department of Molecular and Material Sciences, Kyushu University, Japan
3. Department of Physics, Saga University, Japan

(29-P-S32-28) Development of KNN-based Lead-free Piezoelectric Single Crystals

VASCHALDE, Lucile[*1,2]; VILLORA, Encarnacion G.[1]; SHIMAMURA, Kiyoshi[1,2]
1. National Institute for Materials Science, Japan
2. Graduate School of Advanced Science and Engineering, Waseda University, Japan

(29-P-S32-29) Fermi Level Depinning in Metal/Germanium Junctions by Insertion of Graphene Layers

KHURELBAATAR, Zagarzusem[*1,2]; TSAGAANCHULUUN, Sugir[2]; FUJIOKA, Masaya[1]; NISHII, Junji[1]
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2. School of Information and Communication Technology, Mongolian University of Science and Technology, Mongolia

36:Second Young Professional Forum (YPF) in PACRIM

(29-P-S36-01) Strength improvement of $Yb_2Si_2O_7$/SiC nanocomposites by suraface crack healing

ARAI, Kota[*1]; SON, Thanh Nguyen[2]; HE, Lingfeng[3]; NAKAYAMA, Tadachika[1]; SUEMATSU, Hisayuki[1]; NIIHARA, Koichi[1]
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2. National Institute of Technology, Kushiro College, Japan
3. Idaho National Laboratory, USA