# INTERMAG 2005

Program of the 2005 IEEE
International Magnetics Conference

April 4-8, 2005
Nagoya, Japan


http://www.intermag2005.jp

Sponsors:
The Magnetics Society of Japan
The Magnetics Society of the IEEE

# APRIL 4

## MONDAY MORNING

**10:00 AM - 3:00 PM**

**Technical Tour to Toyota Motor Corp.** *Grand Floor Atrium (Meeting Place)*

## MONDAY AFTERNOON

**2:00 PM - 7:00 PM**

**Registration Desks Open** *Grand Floor Atrium*

**4:00 PM - 6:50 PM**

**TZ Tutorials** *Room 141/142*

## MONDAY EVENING

**7:00 PM**

**Welcome Reception** *Event Hall*

# APRIL 5

## TUESDAY MORNING

**8:20 AM - 5:00 PM**

**Registration Desks Open** *Grand Floor Atrium*

**9:30 AM**

**AA** GMR and Current Induced Instabilities I *Reception Hall*

**AB** Symposium on Heat Assisted Recording Technology *Room 141/142*

**AC** Nanocrystalline Materials *Room 234*

**AD** Films and Surfaces I *Room 224*

**AE** Motors I *Room 131/132*

**AF** Magnetic Recording System I *Room 133/134*

## TUESDAY AFTERNOON

**2:30 PM**

**BA** Current Induced Switching I *Reception Hall*

**BB** Symposium on Advanced Perpendicular Magnetic Recording *Room 141/142*

**BC** Clusters and Particles I *Room 234*

**BD** Magnetic Imaging I *Room 224*

**BE** Actuators and Power Devices *Room 131/132*

**1:30 PM - 5:00 PM** *Event Hall*

**BP** Magneto-Optical Recording and Heat Assisted Recording

**BQ** Magnetic Semiconductors I

**BR** Nanocrystalline and Other Materials I
**BS** Hard Magnets
**BT** Films and Surfaces II
**BU** Films and Surfaces III
**BV** Magnetoimpedance
**BW** Magnetic Sensors and Sensing Systems
**BX** Magnetic Particles in Life Science

**TUESDAY EVENING**

**6:00 PM - 8:00 PM**
**BZ Evening Symposium on MRAM** *Room 141/142*

## APRIL 6

**WEDNESDAY MORNING**

**8:20 AM - 5:00 PM**
**Registration Desks Open** *Grand Floor Atrium*

**9:30 AM**
**CA** Magnetic Tunnel Junctions *Reception Hall*
**CB** Magnetic Recording Physics I *Room 141/142*
**CC** Symposium on Biosensing with Magnetic Beads *Room 234*
**CD** Nanocrystalline and Other Materials II *Room 224*
**CE** Integrated Passives and Devices I *Room 131/132*

**8:30 AM - 12 Noon** *Event Hall*
**CP** Inductive Heads & Materials
**CQ** Perpendicular Recording Media I
**CR** Spin Injection & Transport: Theory to Devices
**CS** Hard Magnet Applications I
**CT** Clusters and Particles II
**CU** Magnetic Imaging II
**CV** Motors II
**CW** Motors III

**WEDNESDAY AFTERNOON**

**2:30 PM**
**DA** Magnetic Semiconductors II *Reception Hall*
**DB** Current Developments in Inductive Heads & Materials *Room 141/142*
**DC** Magnetic Nanoparticles in Biomagnetism *Room 234*
**DD** Applications of Soft Magnetic Materials I *Room 224*

**DE** New Phenomena & Applications *Room 131/132*
**DF** Micromagnetic Simulations *Room 133/134*

**WEDNESDAY EVENING**

**4:10 PM**
**DZ Plenary Session** *Shirotori Hall*

**6:10 PM - 8:00 PM**
**Plenary Reception** *Event Hall*

## APRIL 7

**THURSDAY MORNING**

**8:20 AM - 2:30 PM**
**Registration Desks Open** *Grand Floor Atrium*

**9:30 AM**
**EA** MRAMs *Reception Hall*
**EB** FePt Media and Materials *Room 141/142*
**EC** Ferrites *Room 234*
**ED** Patterned Nanostructures I *Room 224*
**EE** Rare Earth-Transition Metal Magnets and Processing *Room 131/132*
**EF** Magnetic Sensors I *Room 133/134*

**8:30 AM - 12 Noon** *Event Hall*
**EP** Advanced Coding and Recording Channels
**EQ** Current Induced Switching II
**ER** Nanocrystalline and Other Materials III
**ES** Clusters and Particles III
**ET** Inductors and Transformers
**EU** Integrated Passives and Devices II
**EV** Biomagnetism and Applications I
**EW** Biomagnetism and Applications II
**EX** Domains & Interdisciplinary Topics

**THURSDAY AFTERNOON**

**12:30 PM - 1:00 PM**
**IEEE Magnetics Society Annual General Meeting** *Room 131/132*

**2:30 PM**
**FA** Physics of Spin Injection *Reception Hall*
**FB** Sensors, Mostly CPP I *Room 141/142*
**FC** Biomagnetism *Room 234*
**FD** Magnetic Sensors II *Room 224*
**FE** Intermetallic and Other Hard Magnetic Materials *Room 131/132*
**FF** Clusters and Particles IV *Room 133/134*

**1:30 PM - 5:00 PM** *Event Hall*

**FP** Perpendicular Recording Media II (SUL)
**FQ** Magnetic Recording Physics II
**FR** Patterned Media and FePt Media
**FS** Head Disk Interface I
**FT** Magnetic Actuators
**FU** Magnetoresistive Oxides & Halfmetallic Materials
**FV** Ferrites and Other Materials
**FW** Patterned Nanostructures II
**FX** Shielding and Magnetic Particles

**THURSDAY EVENING**

**6:00 PM - 8:00 PM**
**FZ Town Meeting** *Room 141/142*

## APRIL 8

**FRIDAY MORNING**

**8:20 AM - 2:30 PM**
**Registration Desks Open** *Grand Floor Atrium*

**9:30 AM**
**GA** Symposium on Spin Electronics Technology *Reception Hall*
**GB** Advanced Perpendicular Recording Media *Room 141/142*
**GC** Coding and Recording Channels *Room 234*
**GD** Exchange Biasing and Fast Switching I *Room 224*
**GE** Nanostructured Hard Magnetic Materials *Room 131/132*
**GF** Magneto-Optic and Other Magnetic Materials/Devices *Room 133/134*

**8:30 AM - 12 Noon** *Event Hall*
**GP** Magnetic Recording System II
**GQ** Sensors, Mostly CPP II
**GR** Particulate & Tape, Thin Film Media
**GS** GMR and Current Induced Instabilities II
**GT** Applications of Soft Magnetic Materials II
**GU** Magnetoelastc and Novel Magnetic Materials/Devices
**GV** Magnetic Measurements
**GW** Computational Magnetics

**FRIDAY AFTERNOON**

**2:30 PM**
**HA** Novel Magnetoresistive Oxides & Halfmetallic Materials *Reception Hall*

**HB** Head Disk Interface II *Room 141/142*

**HC** Symposium on High Magnetic Anisotropy $L1_0$ and Related Materials *Room 234*

**HD** Microwave and Magnetoelastic Materials/Devices *Room 224*

**HE** Hard Magnet Applications II *Room 131/132*

**1:30 PM - 5:00 PM** *Event Hall*

**HP** MRAMs and Magnetic Tunnel Junctions

**HQ** Exchange Biasing

**HR** Exchange Biasing and Fast Switching II

**HS** Microwave and Magneto-Optic Materials/Devices

**HT** Crystalline and Transport Properties of Magnetic Materials

**HU** Unconventional Magnetic Properties

**5:00 PM**

**Conclusion of the INTERMAG 2005 Conference**

## WELCOME TO INTERMAG ASIA 2005

The INTERMAG ASIA 2005 Conference will be held in Nagoya, Japan, from Monday, April 4th, to Friday, April 8th, 2005. This conference, jointly sponsored by the IEEE Magnetics Society and the Magnetics Society of Japan, is certain to draw a large attendance. An exciting and informative technical program is planned including six invited symposiums, three tutorial topics, and a special plenary session & reception. All members of the international scientific and engineering communities interested in new developments in magnetism and associated technologies are invited to enjoy and to contribute to all the technical discussions. The conference will be held in the Nagoya Congress Center which is equipped with the most modern facilities and is conveniently close to the center of Nagoya city. A new related attraction nearby will be EXPO 2005 linked by a MAGLEV train connection and featuring a futuristic transit system based on magnetics technologies.

### SCOPE OF CONFERENCE

Intermag is the major annual conference for the IEEE Magnetics Society and is the premier conference in its field. The conference addresses all basic and applied science and technology related to the field of magnetism. Topics include magnetic and magneto-optical recording, spin-electronics, soft magnetic materials and permanent magnet materials and applications, biomagnetics and many other magnetics related topics. The conference starts with the first day allocated to a technical tour of Toyota Motor Corporation and to tutorials on magnetic recording, spintronics, and biomagnetism in the afternoon. The four days of technical sessions will include invited symposia on perpendicular recording, hybrid recording, spin-electronics, biosensing, high-anisotropy materials, and MRAM. Altogether about 1,000 technical presentations will be given in either oral or poster sessions. These have been selected from the over 1,500 digests submitted. We expect the number of attendees to also approach one thousand. Many of the highest quality presentations will subsequently appear as papers in the October issue of the IEEE Transactions on Magnetics.

### LOCATION

The Nagoya Congress Center is conveniently located in an area easily accessible from major train stations such as Nagoya and Kanayama. The Congress Center has been recently renovated and offers an appealing selection of food outlets and comfortable amenities.

Visitors can quickly and easily reach Nagoya by air or rail. The new Central Japan International Airport is scheduled to be completed in February 2005, and will be served by direct flights from the world's major cities.
The trip from the Central Japan International Airport to Nagoya will take approximately 1 hour by train. The city is also conveniently connected by Shinkansen bullet trains to Tokyo and Osaka, Japan's two major gateways.
The travel times are 1 hour and 40 minutes from Tokyo and 1 hour from Osaka.

**CONFERENCE REGISTRATION**

Participants can pay the registration fee either in Japanese yen or in U.S. dollars by credit card, bank transfer (yen only), or personal or corporate check (U.S. dollars only). Registration fee at a reduced rate is available, but fee **must be received** by the Secretariat no later than February 28th, 2005 in order to be eligible for **the reduced rate**. All Conference attendees, including speakers, must pay registration fees.

The Conference Registration Form and complete instructions for submission can be found on the INTERMAG 2005 website at: http://www.intermag2005.jp. Registration via the secure website is the most convenient way to register and is highly recommended so that you are registered well in advance of the deadline of February 28th, 2005. If you would like to know the flow of the registration procedure, go to http://www.intermag2005.jp/flow.html. On-line registration will be available until March 20th, however, Advance Registration at a reduced rate is available only until February 28th. Between March 1st and March 20th, registration via the website will still be available but only the higher registration fees will be accepted. March 21st and on, registration can only be made at the Registration Desks on the day of the Conference and at the higher fee. Forms not accompanied by payment or with incomplete or incorrect credit card information will be considered "late" and the higher rates will be collected on the day of the Conference.

All registrants paying the full registration fees will receive a copy of the Digest Book, which will be distributed at the Conference Registration Desks. They will also receive the Conference Proceedings, scheduled to be published in the *IEEE Transactions on Magnetics* (Fall 2005).

| **Registration Fees:** | **Until Feb. 28th** | **After March 1st** |
|---|---|---|
| IEEE or MSJ Member | ¥65,000/$550 | ¥70,000/$600 |
| Non-Member | ¥80,000/$700 | ¥85,000/$750 |
| Student/Retiree | ¥25,000/$200 | ¥30,000/$245 |

Students and unemployed retirees who register at the lower fees will not receive a copy of the Proceedings, except through their membership in the IEEE Magnetics Society. Non-member students registering for the Conference will be given IEEE and Magnetics Society memberships free of charge for the remainder of the year 2005 (April onwards). This offer is only valid if a completed IEEE membership application form is submitted at the Conference.

All attendees will be required to wear INTERMAG 2005 name badges to enter the Technical Sessions and Exhibits. **The use of cameras, videotaping and/or recording devices in the technical sessions is strictly prohibited.**

**REMEMBER: All Advance Registration forms must be accompanied by full payment and must be received by February 28, 2005.**

The Conference Registration Desks, located in the Grand Floor Atrium in front of the Event Hall, will be open during the following hours:

| | |
|---|---|
| Monday, April 4th | 2:00 PM ~ 7:00 PM |
| Tuesday, April 5th | 8:20 AM ~ 5:00 PM |
| Wednesday, April 6th | 8:20 AM ~ 5:00 PM |
| Thursday, April 7th | 8:20 AM ~ 2:30 PM |
| Friday, April 8th | 8:20 AM ~ 2:30 PM |

At the Registration Desks, each registrant will receive the receipt for registration payment, a bag, a name badge, a lunch map, and the Digest.

**Registration Cancellation Policy**: Cancellations of Advance Registrations must be submitted in writing and received by the Secretariat no later than February 28th, 2005. Refunds of the original payment, less ¥8,000 or $70 service fee will be made following the Conference. After February 28th, cancellations can be made, but registration fees are not refundable.

**VISA REQUIREMENTS FOR ENTRY INTO JAPAN**

Citizens of countries other than Japan must carry a valid passport and visa to enter Japan. Participants requiring visas should contact the Japanese Embassy, Consulate, or Office of Tourism in their home country AS SOON AS POSSIBLE to determine their particular visa requirements. The application process for a visa should be started well in advance of the departure date (preferably two months). The Secretariat can is-

sue a signed letter of invitation and necessary documents to those participants who have completed both the registration and payment, and need a visa. Once you have registered AND made your payment, download the Application Form for the Invitation Letter from the INTERMAG 2005 Profile ID login User's Page, fill in all appropriate items, and mail it to the INTERMAG 2005 Secretariat. Upon confirmation of payment, the Invitation Letter will be issued and mailed to you. Be sure to provide your full name and complete mailing address so that the signed Invitation Letter can then be mailed to you via standard mail service. Refer to the VISA information section from your User's Page for details.

**PLEASE NOTE that the INTERMAG 2005 Secretariat CANNOT contact or intervene with any Japanese Embassy or Consulate office abroad on your behalf.**

**PUBLICATIONS ROOM**

The Publications Room will be located in Room 143 on the fourth floor of the Nagoya Congress Center. Authors can check the status of their manuscripts. The status of all papers can be located here and authors should check periodically on their individual papers. This room will be open 9:30 AM - 5:30 PM from Tuesday, April 5th to Thursday, April 7th and 9:30 AM - 12:00 Noon on Friday, April 8th.

**SPEAKER PRACTICE ROOM**

All presentations must be in English. Speakers will be allowed 12 minutes plus 2 minutes for discussion. Speakers should wait in the speaker waiting seats of their oral session rooms at least thirty minutes before their presentation. Oral presentations are given on Tuesday, Thursday, and Friday from 9:30 AM - 12:30 PM and 2:30 PM - 5:30 PM and on Wednesday from 9:30 AM - 12:30 PM and 2:30 PM - 4:00 PM. Speakers are reminded that the Conference is planning an all-electronic presentation format. Just prior to making their oral presentation, authors will attach their own laptop computers to digital projection equipment supplied by the Conference. Every speaker will be responsible for operating the equipments themselves. **You should come prepared with your presentation in Microsoft PowerPoint format for a PC, or else on a MAC. MAC presenters should bring the display cable that came with their PCs. If you are bringing your presentation in USB flash memory and plan to use the PC provided by the Conference, only presentations in Microsoft PowerPoint format will be accepted and authors should preview their material using the Windows PC in the Speaker Practice Room. Please take the time to test your computer with the in-house**

**equipment provided in the Speaker Practice Room well before the day and time of your individual presentation.** To ensure smooth operation, a strict procedure will be enforced: detailed instructions will be sent to all speakers and will be posted on the INTERMAG 2005 website. *To keep the time schedule precisely as planned the presenters must also bring overhead transparencies*. In case a problem with a digital presentation occurs, which cannot be solved within a minute, the speaker will be asked to transfer to his/her transparencies. The session chairs will control precise schedule of the whole meeting.

Speakers may use Room 222 in Building 2 to practice their presentations. Audiovisual equipment will be available for authors to use to check connection of their laptops to the projectors provided from 2:00 PM until 7:00 PM on Monday, from 9:00 AM until 9:00 PM on Tuesday through Thursday, and from 9:00 AM until 4:00 PM on Friday. Speakers are urged to use the facility to practice their presentation, either alone or with colleagues.

**POSTER SESSIONS**

The hours of the Poster Sessions are 8:30 AM - 12:00 PM and 1:30 PM - 5:00 PM. Authors should set up their materials at least ten minutes before session start times. Clear descriptive visual material should be arranged within the board size of W1800cm X H2100cm.The hall will open at 8:00 AM for the morning session. They must be by their posters from 8:30 AM - 9:30 AM and 11:00 AM - 12:00 PM for the morning sessions, and from 1:30 PM - 2:30 PM and 4:00 PM - 5:00 PM for the afternoon sessions. **Authors are reminded to remove all of their materials, excluding the pushpins that have been provided by the Conference, promptly at the end of their session. Materials that are not removed will be discarded in order to prepare for the next session.**

**PLENARY SESSION**

During the Conference Plenary Session on Wednesday, April 6th, at 4:10 PM in the Shirotori Hall, the IEEE Magnetics Society will recognize its 2005 award recipients: the IEEE Reynold B. Johnson Information Storage Systems Award will be presented to Dr. Francois Dolivo, and the IEEE Magnetics Society Achievement Award will be presented to Dr. Robert E. Fontana, Jr. of Hitachi Global Storage Technologies.

The following newly elected IEEE Fellows will be recognized: Dr. Pavel J.D. Kabos of National Institutes of Standards and Technology, Dr. Nobutake Imamura of TeraHouse Corporation, Prof. Jaekyun Moon of University of Minne-

sota, Dr. Kent Ritter Davey of University of Texas and Dr. Giorgio Bertotti of IEN Galileo Ferrais. The INTERMAG Student Travel Award winners will also be announced.
Afterwards, a plenary lecture on "Future Power-train System for Sustainable Mobility" will be given by Mr. Kiyoshi Nakanishi, President of Genesis Research Institute, INC. and Advisor of Toyota Motor Corporation.

**TUTORIALS**

Three successive lectures will be presented on Monday, April 4th, 2005, from 4:00 PM to 6:50 PM in Room 141/142 in Tutorials as follows: "MODELING AND THE FUTURE OF MAGNETIC RECORDING" will be presented by Prof. Randall Victora, University of Minnesota; "MANIPULATION OF MAGNETIC MOMENTS BY SPIN TRANSFER: EXPERIMENTS AND THEORY" will be presented by Prof. Albert Fert, Unité Mixte de Physique CNRS-Thales and Université Paris-Sud; "NEW HORIZON IN BIOMAGNETICS" will be presented by Prof. Shoogo Ueno, University of Tokyo.

**IEEE MAGNETICS SOCIETY ANNUAL GENERAL MEETING**

This meeting is open to all. Please come to learn what the IEEE Magnetics Society is doing for you. Or please come to find out the benefits of joining. Note that free membership is being offered to students attending this conference!
The meeting will be held from 12:30 PM to 1:00 PM on Thursday, April 7th in Room 131/132.

**TECHNICAL TOUR**

A tour of the hybrid car plant of Toyota Motor Corporation is planned for Monday, April 4th, from 11:30 AM to 1:30 PM. The cost of the tour is free. The meeting place will be located near the Conference Registration Desks. Two buses are reserved for a capacity of 80 persons and will leave from the Nagoya Congress Center at 10:00 AM and hope to be back at the Nagoya Congress Center by 3:00 PM; but due to EXPO 2005, traffic may be delayed. Boxed lunches (tea included) will be available at ¥1,050 payable on the day of the tour for those who wish, but carry-ins are also welcome. To reserve the tour (and lunch), please download and fill out an application form from the INTERMAG 2005 website at http://www.intermag2005.jp and send it as an attachment to Professor Gomi at gomi@mse.nitech.ac.jp. Seats are limited, so please make the reservation well ahead of time.
The hybrid car is a new-generation vehicle that achieves outstanding fuel economy and low emission levels. Currently,

medium class cars represented by Prius, which is the world's first mass-produced hybrid car, are manufactured in this plant. This plant has almost all the processes necessary to produce a car. It is a plant worth visiting.

**CONFERENCE SOCIAL EVENT**

Welcome Reception
Date: Monday, April 4th
Time: 7:00 PM ~
Place: Event Hall
Cost: Free (Included in the Registration Fee)
Please participate in the Welcome Reception after registering at the Registration Desks.

Plenary Reception
Date: Wednesday, April 6th
Time: 6:00 PM ~
Place: Event Hall
Cost: Free (Included in the Registration Fee)

**BIERSTUBE AND COFFEE**

Coffee service will be available on Tuesday through Friday mornings among the Poster Sessions and Exhibits in the Event Hall, from 8:30 AM to 10:00 AM. On Tuesday and Thursday evenings, the Bierstube will be held in the Event Hall from 5:00 PM to 6:00 PM.

**SPOUSE HOSPITALITY**

In keeping with recent INTERMAG Conferences, the Nagoya Conference will not include a specific program for accompanying spouses. However, we will have a hospitality area with seating available in Room 225 in Building 2 to provide a convenient meeting point.

**LUNCH**

Nagoya Congress Center has three dining locations: the Skyview Restaurant Pastel with 120 seats, Cafeteria Cascade with 250 seats, and the Coffee Shop Yuri with 100 seats. Also, a map with nearby lunch locations will be provided at the Registration Desks.

**STUDENT TRAVEL AWARD**

The Conference awards travel grants of approximately $1,000 each to a limited number of students working in basic and applied magnetism. These awards are intended to partially offset travel costs to attend INTERMAG 2005. Award is for current graduate students only; postdoctoral fellows or non-students are not eligible. Preference will be given to students who are nearing completion of their graduate studies and are presenting Conference Papers. The oral and poster presentation students have an equal chance to get the Student Travel Award. To apply, forms and instructions will be available at http://www.intermag2005.jp, under the category "Student Travel". Students must download and fill out an application form and send it as an attachment to the INTERMAG 2005 Secretariat at st-intermag@secretariat.ne.jp. The student must also download an advisor form and ask the advisor to fill it out and send it to the Secretariat. The forms may be sent together by the student, or separately by the student and the advisor. The INTERMAG 2005 Secretariat will forward those applications from students or advisors to Dr. Matthew Carey and Prof. Masahiko Yamamoto as they come in. Applications AND letters of endorsement must be submitted between January 1st and February 1st, 2005. (Applications closed on February 1st, 2005.)

**PARTNER PROGRAM**

The 1,500 professionals in attendance during the INTERMAG Conference are primarily scientists, engineers and managers representing a diverse range of disciplines related to the physics and engineering applications of magnetism and magnetic materials. Principal areas of interest cover both theory and applications, and include magnetic recording, magnetic thin films, magnetic computation, magnetism in the biological sciences, soft and hard magnetic materials, and microwave magnetics to name a few.

Contributions from our Partners help offset the expenditures involved with the screening process of papers and presentations, food and beverage and audiovisual needs. These contributions help keep down registration fees without compromising the quality of the program. We thank you for your consideration and appreciate any monetary support you are able to provide.

*DIAMOND PARTNERSHIP*.....*More than $2,000*
*PLATINUM PARTNERSHIP*.....*$2,000*
*GOLD PARTNERSHIP*.....*$1,500*
*SILVER PARTNERSHIP*.....*$1,000*
*BRONZE PARTNERSHIP*.....*Less than $1,000*

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**IEEE MAGNETICS SOCIETY**

| | |
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| | |
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**ELECTED ADMINISTRATIVE COMMITTEE MEMBERS**

*Terms Expiring December 31, 2005*

G. Bertotti; T. Howell; D. Lambeth; R. O'Handley; C. Ross; D. Weller; P. Wigen; R. Wood

*Terms Expiring December 31, 2006*

D. Jiles; D. Lavers; T.D. Lee; Y. Miura; K. Ounadjela; J-U Thiele; S. Ueno; R. Victora

*Terms Expiring December 31, 2007*

J. Chapman; W. Doyle; L. Folks; B. Hillebrands; H. Muraoka; M. Pardavi-Horvath; B. Terris; S. Wang

**FUTURE CONFERENCES**

50th Conference on Magnetism and Magnetic Materials: October 30-November 3, 2005, San Jose, CA

INTERMAG Conference: May 8-12, 2006, San Diego, CA

10th Joint MMM-Intermag Conference: January 7-11, 2007, Baltimore, MD

52nd Conference on Magnetism and Magnetic Materials: November 5-9, 2007, Tampa, FL
INTERMAG Conference: May 4-8, 2008, Madrid, Spain
53rd Conference on Magnetism and Magnetic Materials: November 10-14, 2008, Austin, TX

**CONFERENCE ORGANIZATION**

| | |
|---|---|
| Conference Chairs | Susumu Uchiyama |
| | Roger Wood |
| Vice Chair | Ken Ichi Arai |
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| Program Chairs | Masanori Abe |
| | Yoshimasa Miura |
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| Publication Chairs | Masaaki Matsui |
| | Giora J. Tarnopolsky |
| General Affair | Satoshi Iwata |
| Facility Management | Kenji Sumiyama |
| Publicity | Masaaki Matsui |
| Student Travel Award Co-Chairs | Matthew J. Carey |
| | Masahiko Yamamoto |
| Social Program | Manabu Gomi |
| Exhibition | Yasuo Okazaki |

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*Editors:* J.R. Cruz, Francis Dawson, Joseph Feng, Peter George, Romel "Mel" D. Gomez, Satoshi Hirosawa, Michael Ho, Junichiro Inoue, Shunji Ishio, Masahiko Kaneko, Kazuyuki Koike, Adalbert Konrad, Hideki Miyajima, Terunobu Miyazaki, William Rippard, Daniel Robb, Hiroshi Sakakima, Yoshishige Suzuki, David Wachenschwanz, Kazuhiko Yamada, Masahiro Yamaguchi

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Kazuhiro Hono, Osamu Ichinokura, Nobuyuki Inaba, Mitsuteru Inoue, Keiji Iramina, Takahiko Iriyama, Akira Kikitsu, Chong-Oh Kim, Osamu Kitakami, Yoshitaka Kitamoto, Hae-Woong Kwon, Sang Ho Lim, Bo Liu, Mikio Matsuzaki, Akimitsu Morisako, Koichi Mukasa, Shigeki Nakagawa, Katsuji Nakagawa, Ryoichi Nakatani, Shigehiro Ohnuma, Yoshihiro Okamoto, Hans Juergen Richter, Yoshiaki Saito, Hiroshi Sakakima, Akimasa Sakuma, Ichiro Sasada, Toshiro Sato, Hang-Ping Shieh, Kyung-Ho Shin, Sung Chul Shin, Satoshi Sugimoto, Yoshishige Suzuki, Yoshio Suzuki, Koki Takanashi, Yasushi Takemura, Atsushi Tanaka, Yoichiro Tanaka, Masaaki Tanaka, Keiji Tsukada, Masakiyo Tsunoda, Masahiro Yamaguchi, Kiyoshi Yamakawa, Setsuo Yamamoto, Keita Yamazaki, Yeong Der Yao, Kazuetsu Yoshida, Yoshihito Yoshizawa

**ADDITIONAL INFORMATION**

If you would like to receive more information about INTERMAG 2005, please contact INTERMAG 2005 Secretariat at:

**INTERMAG 2005 Secretariat**
c/o Convention Linkage, Inc.
Asahiseimei Yabacho Bldg, 3-32-20, Sakae,
Naka-ku, Nagoya 460-0008, Japan
Phone: +81-52-262-5070
Fax: +81-52-262-5084
Email: info@intermag2005.jp

You may also access complete conference information through the Web at the INTERMAG home page at: http://www.intermagconference.com

**GENERAL INFORMATION**

**TRANSPORTATION**

The all-new Nagoya International Airport is being constructed and scheduled to begin operation on February 17th, 2005. The 24-hour airport is called "Centrair" and is located 35km south of Nagoya. The airport is about 40 minutes by car (about ￥15,000 by taxi) and 37 minutes by Meitetsu railway (about ￥700~￥1200) from central Nagoya. It's not just an airport, but also an amusement park full of entertainment with zones for shopping, relaxation, gourmet, events, etc. For more information, please visit
http://www.cjiac.co.jp/foreign/english/index.html
To get to places in Nagoya, there are three major railways, an extensive subway system, buses, and taxis. The subway is recommended for its convenience and ease. Visit the following

URL for the Nagoya Subway Network Diagram
http://www.intermag2005.jp/subway.pdf

**NAGOYA CITY**

Geographically located around the center of main island of Japan, Nagoya has been a cultural crossroad since ancient times. Due to its convenient location, it has served as a meeting place for the nation's eastern and western cultures.

Nagoya has outstanding features both in historical and modern aspects. Back in the 16th century, three very popular Samurai heroes - Oda, Toyotomi, and First Shogun Tokugawa - were all born in and out of Nagoya.

At present, the city enjoys prosperity as a center of various industries. It has a population of 2.17 million, making it the 4th largest city in Japan.

**NAGOYA WEATHER**

The temperature in Nagoya during the Conference period is quite pleasant, and it will range between 10-14℃(50-57 ℉). However, the average temperature last April was around 20 ℃, so please come ready for any unpredictable weather.

**ACCOMODATION**

The travel agency, JTB, is assigned as the official travel agency for INTERMAG 2005. JTB has booked several hotels near some of the major stations in Nagoya that are conveniently located from the Conference site, but the number of rooms are limited. If you wish to reserve a hotel room or book a tour from our web site, please register for the Conference. After registration, you will receive your Profile ID, with which you can login to your own personal User's Page. Click on the Hotel & Travel link to access information on application for hotel reservation. If you already have a Profile ID, please follow the same direction as above. You may find difficulty in reserving hotel rooms due to EXPO 2005. Please reserve hotel rooms well in advance.

**EXPO 2005**

The first World Expo of the 21st century, EXPO 2005 Aichi, Japan, is to be held in the outskirts of Nagoya from March 25th until September 25th, 2005.

Japan's first maglev train service (HSST) is scheduled to begin its operation and provides access to the EXPO 2005 site. Within the site, an Intelligent Multimode Transit System (IMTS), utilizing magnetics technology, will be operating. EXPO 2005 visitors will experience futuristic intelligent transport systems (ITS) traveling to, between, and within the event exhibition areas.

The theme of EXPO 2005 is "Nature's Wisdom". For more information, please visit: http://www.expo2005.or.jp

**CURRENCY EXCHANGE**

The currency used in Japan is yen(¥). Foreign currency can be changed to yen at major banks, hotels or airports. Only Japanese yen is accepted at stores and restaurants. Bills come in units of 1,000, 2,000, 5,000 and 10,000 yen, and coins in units of 1, 5, 10, 50, 100 and 500 yen. The approximate exchange rate for US$1.00 is 104 yen (as of December 2004) and it fluctuates daily depending on the money market.

**Traveler's Checks**

Traveler's checks are not as popular in Japan as in some other countries. Usually, only major banks and hotels accept them. It is necessary to show your passport for identification when exchanging traveler's checks.

**Credit Cards**

Visa, MasterCard, American Express, and Diners Club cards are widely accepted at hotels, department stores, shops and restaurants. However, credit card transactions are not always convenient outside big cities.

**ATMs**

Automatic Teller Machines (ATMs) are commonly available in large urban areas throughout Japan. However, most do not accept foreign credit cards or cash cards and their service hours are very often restricted: Many ATMs operate only during banking hours and weekend services are restricted to Saturday mornings.

For ATMs that accept credit cards, it is advised to contact each credit card company beforehand and check its availability as these conditions vary from machine to machine.

Most Japanese Post Office ATMs in Tokyo show the service availability with stickers indicating which cards are accepted. Cards from the Cirrus, Plus, Maestro and Visa Electron networks can be used. Accepted credit cards include Visa, MasterCard, American Express and Diners Club.

**TIPPING**

There is no custom of individual tipping in Japan. Instead, a service charge will be included in the bill where applicable. And 5% consumption tax applies to almost all consumer goods purchased in Japan.

**ELECTRICAL APPLIANCES**

The voltage used throughout Japan is uniformly 100 volts,

A.C. There are two frequencies in use; 50 Hertz in eastern Japan (including Tokyo) and 60 Hertz in western Japan (including Nagoya, Kyoto and Osaka).
A convertible type of electrical appliance such as a hair dryer, travel iron and shaver will therefore be handy; otherwise a step-down transformer is required to convert the voltage.
There are no columnar-shaped plugs or 3-pin plugs used in Japan but 2-flat-pin plugs as in North America are used instead. It is therefore advised to purchase a plug adapter beforehand.

**SHOPPING**

There are many department stores around major train/subway stations in Nagoya. They offer just about everything from grocery, clothing, to furniture and even goods from foreign countries. There are usually restaurants of different cuisine and nationality at the top level that people enjoy. The prices, however, are higher than average.
Underground shopping centers are also popular amongst the Japanese on rainy days. There are cafes, bookstores, shoe stores, clothing stores, you name it.
The Osu shopping arcade is popular amongst people looking for authentic Japanese mementos. There are traditional Japanese food concession stands, new and used kimono shops, and antique shops.
If you love shopping, you'll enjoy shopping in Nagoya.

**USEFUL WEBSITES FOR TRAVELING IN JAPAN**

The following website offers wide range of information about all of Japan.

・Japan National Tourist Organization
http://www.jnto.go.jp/eng

The following two websites offer information on Nagoya.

・Nagoya Convention and Business Bureau
http://www.ncvb.or.jp/index_e.html

・Nagoya InfoGuide http://www.japaninfoguides.com/

**Apr. 4** **Room 141/142**

## Session TZ
## Tutorials

**Y. Miura**
Shinsyu University
**N. Matsushita**
Tokyo Institute of Technology

**16:00**

***TZ-01 MODELING AND THE FUTURE OF MAGNETIC RECORDING**
R. H. Victora, *MINT, Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, United States of America*

**17:00**

***TZ-02 MANIPULATION OF MAGNETIC MEMORY BY SPIN TRANSFER: EXPERIMENTS AND THEORY**
A. Fert, *Unite Mixte de Physique CNRS-Thales and Universite Paris-Sud, France*

**18:00**

***TZ-03 NEW HORIZON IN BIOMAGNETICS**
Shoogo Ueno, *Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*

## Session AA
## GMR and Current Induced Instabilities I

**J.R. Childress**
San Jose Research Center, Hitachi Global Storage Technologies

**AA-01 9:30 MICROWAVE DYNAMICS IN NANOSCALE MULTILAYER CPP DEVICES DRIVEN BY SPIN-TRASFER TORQUE**

Sergey I. Kiselev[1], Jack C. Sankey[2], Ilya N. Krivorotov[2], Nathan C. Emley[2], Robert A. Buhrman[2], Daniel C. Ralph[2], *[1]Hitachi GST, United States of America, [2]Cornell University, United States of America*

**AA-02 9:45 SUB-NS MAGNETIZATION SWITCHING AND RF EMISSION IN CoFe/Cu/CoFe PILLARS USING SPIN-TRANSFER EFFECT**

Thibaut Devolder[1], Ashwin A. Tulapurkar[2], Paul Crozat[1], Claude Chappert[1], Yoshishigue Suzuki[2], Kunji Yagami[3], *[1]Institut d'Electronique Fondamentale, CNRS UMR 8622, Bat. 220, Universite Paris Sud, France, [2]NanoElectronics Research Institute, National Institute of Advanced Industrial Science and Technology, Japan, [3]SSNC, Semiconductor Technology Development Group, SONY Corp., Japan*

**AA-03 10:00 APPROXIMATE THEORY OF MICROWAVE GENERATION IN A MAGNETIC NANO-CONTACT DRIVEN BY A SPIN-POLARIZED CURRENT**

Andrei N. Slavin[1], Pavel Kabos[2], *[1]Dept. of Physics, Oakland University, United States of America, [2]Electromagnetics Division, National Institute of Standards, United States of America*

**AA-04 10:15 MAGNETIZATION SELF-OSCILLATIONS INDUCED BY SPIN-POLARIZED CURRENTS**

Roberto Bonin[1], Giorgio Bertotti[2], Claudio Serpico[3], Isaak D. Mayergoyz[4], Alessandro Magni[2], Massimiliano d'Aquino[3], *[1]Physics Dept., Polytechnic of Turin, Italy, [2]Materials Dept., IEN Galileo Ferraris, Italy, [3]Dept. of Electrical Engineering, University of Naples, Italy, [4]Dept. of Electrical and Computer Engineering, University of Maryland, MD, United States of America*

**AA-05 10:30 PELTIER EFFECT IN METALLIC CPP STRUCTURES**

Akio Fukushima[1], Hitoshi Kubota[1], Atsushi Yamamoto[1], Yoshishige Suzuki[2], Shinji Yuasa[1], *[1]National Institute of Advanced Industrial Science and Technology, Japan, [2]Graduate School of Engineering Science, Osaka University, Japan*

**AA-06 10:45 THE RELATION BETWEEN NANOCONTACT MAGNETORESISTANCE AND CONDUCTANCE QUANTIZED STATES**

Koji Sekiguchi, Eiji Saitoh, Hideki Miyajima, *Dept. of Physics, Keio University, Japan*

**AA-07 11:00 CPP CHARGE AND HEAT TRANSPORTS IN MULTILAYERED NANOWIRES: THE SPIN-PELTIER EFFECT**

Laurent Gravier, *Ecole Polytechnique federale de LAUSANNE, Switzerland*

**AA-08 11:15 COMPOSITIONAL DEPENDENCE OF MAGNETORESISTANCE IN TbFeCo AMORPHOUS FILMS**

Md. Tofizur Rahman, Xiao Xi Liu, Mitsunori Matsumoto, Akimitsu Morisako, *Dept. of Information Engineering, Faculty of Engineering, Shinshu University, Japan*

**AA-09 11:30 CPP SPIN-VALVES UTILIZING ULTRA-STRONG Ir COUPLED ANTIPARALLEL PINNED LAYERS FOR THICK REFERENCE LAYER STABILIZATION**

Stefan Maat, Matthew Carey, Jordan Katine, Jeff Childress, *Hitachi Global Storage Technologies, United States of America*

**AA-10 11:45 VARIATIONS OF MAGNETIC PROPERTIES FOR VARIOUS NITROGEN CONCENTRATION IN Ta THIN FILMS FOR SPIN VALVE STRUCTURE**

Yeonbong Choi[1], Soonchul Jo[1], Ji Seop So[2], Moon Kyu Song[2], Chang Woo[2], *[1]School of Electronics, Soongsil University, Republic of Korea, [2]Dept. of Nano & Electronic Physics, Kookmin University, Republic of Korea*

**AA-11 12:00 CARRIER SCATTERING CAUSED BY ANTIPARALLEL COUPLED PERPENDICULAR MAGNETIC DOMAINS IN Co/Pd MULTILAYERS**

Tomoki Kobayashi, Sigeki Nakagawa, *Department of Physical Electronics, Tokyo Institute of Technology, Japan*

**AA-12 12:15 IN-SITU MAGNETORESISTANCE MEASUREMENTS OF A NANOCONSTRICTED NICKEL-IRON FILM WITH IN-PLANE CONFIGURATION**

Yuichi Ohsawa[1], Yuichi Ohsawa[2], *[1]CR & D Center, Toshiba corp., Japan, [2]RIEC, Tohoku University, Japan*

**Apr. 5** **Room 141/142**

## Session AB
## Symposium on Heat Assisted Recording Technology

**K. Nakagawa**
Nihon University

***AB-01 9:30 THERMAL MANAGEMENT IN HEAT ASSISTED MAGNETIC RECORDING**
T. E. Schlesinger, E. J. Black, J. A. Bain, *Carnegie Mellon University, United States of America*

***AB-02 10:00 PSEUDO-BINARY ALLOYS AND EXCHANGE SPRINGS: A REVIEW OF MEDIA CONCEPTS FOR THERMALLY ASSISTED MAGNETIC RECORDING**
Jan-Ulrich Thiele, *Hitachi Global Storage Technologies, San Jose Research Center, United States of America*

***AB-03 10:30 NEAR FIELD ASSISTED MAGNETIC RECORDING**
Shintaro Miyanishi, Naohiro Iketani, Kazuhisa Takayama, Kousuke Innami, Ippei Suzuki, Tazuko Kitazawa, Yasushi Ogimoto, Yoshiteru Murakami, Kunio Kojima, Akira Takahashi, *Devices Technology Research Lab. Sharp Co., Japan*

***AB-04 11:00 CHARACTERIZATION OF BLUE- AND RED- VERY SMALL APERTURE LASERS FOR HYBRID RECORDING**
Tomoki Ohno[1], J. A. Bain[2], T. E. Schlesinger[2], *[1]Sharp Laboratories of America Inc., United States of America, [2]Carnegie Mellon University, United States of America*

***AB-05 11:30 LASER INDUCED ULTRAFAST MANIPULATION OF SPINS IN ANTIFERROMAGNETIC MATERIALS: A NEW AVENUE IN MAGNETIC MEMORY**
Theo Rasing, *IMM, Radboud University Nijmegen,*

***AB-06 12:00 THERMO-MAGNETIC RANDOM ACCESS MEMORY: A NEW ROUTE FOR LOW POWER APPLICATIONS**
Olivier Redon[1], Ioan Lucian Prejbeanu[1], Ricardo C. Sousa[1], Marta Kerekes[1], Bernard Dieny[1], Jean-Pierre Nozieres[1], Paulo P. Freitas[2], *[1]SPINTEC, France, [2]INESC-MN, Portugal*

**Apr. 5** **Room 234**

## Session AC
## Nanocrystalline Materials

**K.Y. Kim**
Korean Institute of Science and Technology

**AC-01 9:30 B CONTENT DEPENDENCE ON ANISOTROPY FIELD OF CoFeB THIN FILM FOR GHz FREQUENCY USE**
Masashi Namikawa, Makoto Munakata, Sin-Ichi Aoqui, Masaaki Yagi, *Energy Electronics Laboratory and Faculty of Engineering, Sojo University, Japan*

**AC-02 9:45 DEVELOPMENT OF SOFT MAGNETIC THIN FILMS FOR GHz APPLICATIONS**

Jongsik Shim[1], Inyoung Kim[1], Jong-Ryoul Kim[1], Suk Hee Han[2], HeeJung Kim[2], Ki Hyeon Kim[3], Masahiro Yamaguchi[3], *[1]Dept. of Materials Engineering Science, Hanyang University, Republic of Korea, [2]Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea, [3]Research Institute of Electrical Communication, Tohoku University, Japan*

**AC-03 10:00 EXTRACTION OF COMPLEX PERMEABILITY ON COPLANAR TRANSMISSION LINE BY MEASURING SCATTERING PARAMETERS UP TO 20GHz**

Jaecheon Sohn, Ki Hyeon Kim, Masahiro Yamaguchi, *Dept. of Electrical and Communication Engineering, Tohoku University, Japan*

**AC-04 10:15 DYNAMIC LOSSES AND DOMAIN REFINEMENT IN NANOCRYSTALLINE TAPE WOUND CORES**

Sybille Flohrer[1], Rudolf Schaefer[1], Jeffrey McCord[1], Stefan Roth[1], Giselher Herzer[2], Ludwig Schultz[1], *[1]IFW Dresden, Germany, [2]VACUUMSCHMELZE GmbH & Co. KG, Germany*

**AC-05 10:30 GROWTH RATE EFFECTS IN SOFT CoFe FILMS**

Marian Vopsaroiu[1], Milena Georgieva[2], Phil J. Grundy[2], Mike J. Thwaites[3], Kevin O'Grady[1], *[1]Department of Physics, University of York, England, [2]Department of Physics, University of Salford, M5 4WT, United Kingdom, [3]Plasma Quest Ltd., United Kingdom*

**AC-06 10:45 THE CHANGE OF MAGNETIC PROPERTIES BY ION IRRADIATION IN THE Co-BASED AMORPHOUS RIBBON**

Duck-Gun Park[1], Gi-Duck Kim[1], Jae-Hyung Lee[1], Cheol-Gi Kim[2], Jun-Hwa Hong[1], *[1]Dept. Development of Nuclear Material, Korea Atomic Energy Research Institute, Republic of Korea, [2]Dept. of Materials Engineering, Chungnam National University, Republic of Korea*

**AC-07 11:00 INFLUENCE OF THE MAGNETOELASTIC MECHANISM ON THE SWITCHING FIELD FLUCTUATIONS ON Fe BASED AMORPHOUS MICROWIRES**

K. L. Garcia[1], R. Varga[2], M.Vazquez[1], *[1]Materials Science Institute of Madrid, Spain, [2]Institute of Physics, Faculty of Sciences, UPJS, Slovakia*

**AC-08 11:15 HELICAL MAGNETIC STRUCTURE IN COLD-RAWN Fe-RICH AMORPHOUS WIRE**

A. Chizhik[1], C. Garcia[1], J. Gonzalez[1], J. J. del Val[2], J. M. Blanco[3], D. N. Merenkov[4], S. L. Gnatchenko[4], Y. A. Shakhayeva[4], A. N. Bludov[4], *[1]Dep. Fisica de Materiales, Facultad de Quimica, UPV, San Sebastian, Spain, [2]Unidad Fisica Materiales, CSIC-UPV/EHU, San Sebastian, Spain, [3]Dep. Fisica Aplicada I, EUPDS, UPV/EHU, San Sebastian, Spain, [4]Institute for Low Temperature Physics & Engineering, NAS of Ukraine, Kharkov, Ukraine*

**AC-09 11:30 COMBINED SOFT MAGNETISM, GOOD CORROSION RESISTANCE, AND HIGH MECHANICAL STRENGTH IN GLASSY $Fe_{65.5}Cr_4Mo_4Ga_4P_{12}C_5B_{5.5}$**

Mihai Stoica, Stefan Roth, Uwe Gaitzsch, Annett Gebert, Ludwig Schultz, *IFW Dresden, Germany*

**AC-10 11:45 THE INFLUENCE OF TRANSVERSE FIELD ANNEALING ON MAGNETIC PROPERTIES OF $(Fe_{1-x}Co_x)_{81}Nb_7B_{12}$ (x=0.25, 0.33, 0.5, 0.66) NANOCRYSTALLINE ALLOYS**

Ivan Skorvanek, *Inst. Exp. Physics SAS, Kosice, Slovakia*

**AC-11 12:00 ORIGIN OF THE STRESS-INDUCED MAGNETIC ANISOTROPY IN Fe-BASED NANOCRYSTALLINE ALLOY**

Masato Ohnuma[1], Takeshi Yanai[2], Masaki Nakano[2], Hirotoshi Fukunaga[2], Kazuhiro Hono[1], Yoshihito Yoshizawa[3], *[1]National Institute for Materials Science, Japan, [2]Nagasaki University, Japan, [3]Hitachi Metals Ltd., Japan*

**AC-12 12:15 ROLE OF HEAT OF FORMATION ON SOFT MAGNETIC PROPERTIES AND STRUCTURE OF METAL-INSULATOR TYPE NANO-GRANULAR MAGNETIC FILMS**

Shigehiro Ohnuma[1], Masato Ohnuma[2], Kazuhiro Hono[2], Hiroyasu Fujimori[1], Tsuyoshi Masumoto[1], *[1]The Research Institute for Electric and Magnetic Materials, Japan, [2]National Institute for Materials Science, Japan*

**Apr. 5** **Room 224**

## Session AD
## Films and Surfaces I

**K. Takanashi**

Institute for Materials Research, Tohoku Univeristy

**AD-01 9:30 W AND Ag INDUCED MAGNETIZATION PROFILE IN MULTILAYER WITH 3d METALS**

Nicolas Jaouen, Fabrice Wilhelm, Andrei Rogalev, Jose Goulon, *European Synchrotron Radiation Facility (ESRF), France*

**AD-02 SPIN-POLARIZED SCANNING TUNNELING**
**9:45 SPECTROSCOPY STUDY OF EPITAXIAL IRON(001) LAYERS ON BCT-MANGANESE(001)**

Toyokazu Yamada[1], Amadeo L. Vazquez de Parga[2], Maarten M.J. Bischoff[3], Tadashi Mizoguchi[1], Herman van Kempen[3], *[1]Dept. of Physics, Gakushuin University, Japan, [2]Dept. Fisica de la Materia Condensada, Universidad Autonoma de Madrid, Spain, [3]Institute for Molecules and Molecular systems, Radboud University, Netherlands*

**AD-03 ANTIFERROMAGNETIC Mn ON Fe(001) STUDIED**
**10:00 BY SPIN-POLARIZED SCANNING TUNNELING MICROSCOPY**

U. Schlickum, N. Janke-Gilman, W. Wulfhekel, J. Henk, P. Bruno, J. Kirschner, *Max Planck Institute of Microstructure Physics, Germany*

**AD-04 MAGNETISM AND MAGNETO-OPTICAL RESPONSE**
**10:15 FROM ULTRA-THIN Co FILMS EPITAXIALLY GROWN ON Pd SUBSTRATES**

Marek Przybylski, Miroslav Nyvlt, Yisheng Shi, Long Yan, Jan Zukrowski, Jochen Barthel, Jurgen Kirschner, *Max-Planck-Institut fuer Mikrostrukturphysik, Germany*

**AD-05 STRUCTURAL AND MAGNETIC ANISOTROPY**
**10:30 PROPERTIES IN EPITAXIAL Fe FILMS ON $Al_{0.48}In_{0.52}As(001)$**

Nicolas Tournerie, Philippe Schieffer, Bruno Lepine, Claude Lallaizon, Guy Jezequel, *UMR CNRS 6627 PALMS, France*

**AD-06 SPIN AND ORBITAL MOMENTS OF ULTRA-THIN Fe**
**10:45 FILMS ON VARIOUS SEMICONDUCTOR SURFACES**

Jill S. Claydon[1], Daxin Niu[1], Yong Bing Xu[1], Neil D. Telling[2], Ian W. Kirkman[2], Gerrit van der Laan[2], *[1]Spintronics Laboratory, Department of Electronics, University of York, United Kingdom, [2]Daresbury Laboratory, United Kingdom*

**AD-07 ANNEALING INDUCED Fe OXIDE**
**11:00 NANOSTRUCTURES ON GaAs**

Yong Xiong Lu[1], Ehsan Ahmad[1], Yong Bing Xu[1], Sarah M. Thompson[2], *[1]Spintronics Laboratory, Department of Electronics, University of York, United Kingdom, [2]Department of Physics, University of York, United Kingdom*

**AD-08 MAGNETIZATION RELAXATION IN SPUTTERED**
**11:15 THIN Fe FILMS: EVIDENCE OF SPIN-PUMPING EFFECT**

Bijoy K. Kuanr[1], Alka V. Kuanr[2], R. E. Camley[1], Z. Celinski[1], *[1]Department of Physics, University of Colorado at Colorado Springs, CO, United States of America, [2]College of Applied Sc. for Women, Delhi University, Delhi-92, India*

**AD-09 11:30 HIGH WAVE VECTOR SPIN WAVES IN ULTRATHIN Co-FILMS INVESTIGATED BY SPIN-POLARIZED ELECTRON ENERGY LOSS SPECTROSCOPY**

M. Etzkorn[1], P. S. Anil Kumar[1], R. Vollmer[1], W. Tang[1], Y. Zhang[1], H. Ibach[2], J. Kirschner[1], *[1]Max-Planck Institute of Microstructure Physics, Germany, [2]Institute of Surfaces and Interfaces, Research center Juelich, Germany*

**AD-10 11:45 SYNTHESIS AND MAGNETIC MOMENT OF ALPHA PRIME AND GAMMA PRIME-Fe-N PHASES WITH VARIOUS UNIT-CELL VOLUME**

Kazuyuki Sunaga[1], Masakiyo Tsunoda[1], Migaku Takahashi[2], *[1]Dept. of Electronic Engineering, Tohoku University, Japan, [2]New Industry Creation Hatchery Center, Tohoku University, Japan*

**AD-11 12:00 HIGHLY (001) ORIENTED $L1_0$ FePt THIN FILM USING NiTa SEED LAYER**

Tomoyuki Maeda, *Corporate R&D Center, Toshiba Corporation, Japan*

**AD-12 12:15 MICROSTRUCTURE OF HIGH COERCIVITY FePt THIN FILMS FABRICATED AT 400 °C**

Z. L. Zhao[1], J. S. Chen[1], J. Ding[2], J. B. Yi[2], B. H. Liu[2], J. P. Wang[3], *[1]SMI Division, Data Storage Institute, Singapore, [2]Dept. of Materials Science, National University of Singapore, Singapore, [3]Dept. of Electrical and Computer Engineering, The Center for Micromagnetics and Information Technologies (MINT), University of Minnesota, United States of America*

**Apr. 5** **Room 131/132**

## Session AE
## Motors I

**D. Dorrell**
The University of Glasgow

**AE-01 9:30 IRON LOSS IN A MODULAR ROTOR SWITCHED RELUCTANCE MACHINE FOR THE 'MORE-ELECTRIC' AERO-ENGINE**

David J. Powell, Geraint W. Jewell, Stuart D. Calverley, David Howe, *Electronic and Electrical Engineering, University of Sheffield, United Kingdom*

**AE-02 9:45 ASSESSING THE CORE LOSSES IN SWITCHED RELUCTANCE MACHINES**

Ivan Chindurza, David G. Dorrell, Calum Cossar, *Dept. of Electronics and Electrical Engineering, University of Glasgow, United Kingdom*

**AE-03 10:00 AN ACCURATE ANALYTICAL METHOD FOR ESTIMATION OF FLUX-LINKAGE CHARACTERISITCS OF A SWITCHED RELUCTANCE MOTOR**

Nimit K. Sheth, K. R. Rajagopal, *Electrical Engineering Department, Indian Institute of Technology Delhi, New Delhi, India*

**AE-04 10:15 A NOVEL SWITCHED RELUCTANCE MOTOR WITH WOUND-CORES PUT ON STATOR AND ROTOR POLES**

Kenji Nakamura, Tomoya Ono, Keisuke Sugano, Tadaaki Watanabe, Hiroki Goto, Osamu Ichinokura, *Graduate School of Engineering, Tohoku University, Japan*

**AE-05 10:30 DESIGN OPTIMIZATION OF PERMANENT MAGNET MOTORS USING RESPONSE SURFACE METHODOLOGY AND GENETIC ALGORITHMS.**

Laurent Jolly[1], M. A. Jabbar[1], Qing Hua Liu[2], *[1]Dept. of Electrical Engineering, National University of Singapore, Singapore, [2]ASM Specific Technology, Singapore*

**AE-06 10:45 DEVELOPMENT OF A WINDING METHOD AND AN INVERTER CIRCUIT TO DRIVE A BLDC MOTOR AT HIGH SPEED WITH LARGE STARTING TORQUE**

Gun Hee Jang, Chung Ill Lee, *PREM Lab., Hanyang University, Republic of Korea*

**AE-07 11:00 ANALYSIS OF COGGING TORQUE IN BRUSHLESS MACHINES HAVING NON-UNIFORMLY DISTRIBUTED STATOR SLOTS AND STEPPED ROTOR MAGNETS**

Zi Qiang Zhu, Som Ruangsinchaiwanich, Dahaman Ishak, David Howe, *Dept. of Electronic and Electrical Engneering, University of Sheffield, United Kingdom*

**AE-08 11:15 ROTOR LOSS ESTIMATION IN PERMANENT MAGNET MACHINES WITH CONCENTRATED WINDINGS**

Oriano Bottauscio[1], Mario Chiampi[2], Paolo Guglielmi[2], Gianmario Pellegrino[2], Alfredo Vagati[2], *[1]IEN Galileo Ferraris, Torino, Italy, [2]Dept. Ingegneria Elettrica, Politecnico di Torino, Italy*

**AE-09 11:30 AN AUTOMATIC PIN IDENTIFICATION METHOD FOR THE THREE-PHASE DC BRUSHLESS MOTOR**

Shyh-Jier Wang[1], Shir-Kuan Lin[2], Jau-Jiu Ju[1], Der-Ray Huang[1], *[1]Industrial Technology Research Institute, Opto-Electronics & Systems Laboratories, Taiwan, [2]Department of Electrical and Control Engineering, National Chiao Tung University, Taiwan*

**AE-10 11:45 MEASUREMENT AND MODELLING OF CORE LOSSES OF SOFT MAGNETIC COMPOSITES UNDER 3D MAGNETIC EXCITATIONS IN ROTATING MOTORS**

You Guang Guo, Jian Guo Zhu, Jin Jiang Zhong, Zhi Wei Lin, *Faculty of Engineering, University of Technology, Sydney, Australia*

**AE-11 12:00 ANALYSES OF A BEARINGLESS MACHINE WITH DIVIDED WINDINGS**

Jossana M. S. Ferreira[1], Felipe E. F. Castro[1], Andres O. Salazar[1], Mauro Zucca[2], Lorenzo Donadio[2], [1]*Computation and Automation Dept., UFRN, Lagoa Nova, Brazil,* [2]*Istituto Elettrotecnico Nazionale Galileo Ferraris (IEN), Italy*

**AE-12 12:15 DRIVE OF HIGH-VOLTAGE SINGLE-PHASE BRUSHLESS DC MOTORS BASED ON TORQUE ANALYSIS**

Li Zhi Sun, Jing Shang, Ji Bin Zou, *Harbin Institute of Technology, China*

**Apr. 5** **Room 133/134**

## Session AF
## Magnetic Recording System I

**D.C. Palmer**
Seagate Technology

**AF-01 9:30 STUDY OF GMR SIDE READING EFFECT IN PERPENDICULAR RECORDING SYSTEM**

Peng Luo, Yan Wu, Herbert G. Lin, *Maxtor Corporation, United States of America*

**AF-02 9:45 GEOMETRY EFFECTS FOR PRINTING FINAL SERVO PATTERNS ON PERPENDICULAR DISKS**

Bill R. Baker, *Redwood Technology, United States of America*

**AF-03 10:00 ALTERNATING-DC TRACK SERVO PATTERN FOR PERPENDICULAR RECORDING**

Takehiko Hamaguchi[1], Hideaki Maeda[1], Kazuaki Usui[1], Kazuhisa Shishida[2], [1]*Storage Research Center, Research & Development Group, Hitachi, Ltd., Japan,* [2]*Advanced & Common HDD Technology, Hitachi Global Storage Technologies, Japan*

**AF-04 10:15 THERMAL ASPERITY SUPPRESSION IN PERPENDICULAR RECORDING CHANNELS**

George Mathew, Indrawan Tjhia, *Dept. of Electrical & Computer Eng., National University of Singapore, and Data Storage Institute, Singapore*

**AF-05 10:30 LOW CROSS TALK INTERCONNECT FOR MAGNETIC RECORDING HEAD**

Yen Fu, Chao-Hui Yang, Li-Yan Zhu, Manuel A. Hernandez, Ellis Cha, *SAE Magnetics, United States of America*

**AF-06 10:45 NUMERICAL SIMULATION OF SHOCK RESPONSE OF A HARD DISK DRIVE AT OPERATIONAL STATE**

Qing Hua Zeng[1], Fu-Ying Huang[1], Hiroyasu Tsuchida[2], *[1]San Jose Research Center, Hitachi Global Storage Technologies, United States of America, [2]Mobile BU, Hitachi Global Storage Technologies, Japan*

**AF-07 11:00 ON-OFF ROBUST DESIGN OF HARD DISK RAMP LOADING**

Ke Xiu Liu[1], Ben M. Chen[2], Qing Wei Jia[1], *[1]Servo DE, Seagate Technology International, Singapore, [2]ECE Dept., National University of Singapore, Singapore*

**AF-08 11:15 INTERACTION DECOUPLING CONTROL OF MULTIPLE MILLIACTUATORS IN DUAL-STAGE SERVOS**

Chun Ling Du, Guo Xiao Guo, Jing Liang Zhang, *Mechatronics and Recording Channel, Data Storage Institute, A*STAR, Singapore*

**AF-09 11:30 ELECTRO-STATIC MICRO-ACTUATOR FOR HDD TRACKING SERVO: COMPATIBILITY WITH CONTACT RECORDING**

Toshiki Hirano, Mathew Mate, Robert Payne, *San Jose Research Center, Hitachi Global Storage Technologies, United States of America*

**AF-10 11:45 ADAPTIVE NEAR TIME-OPTIMAL SEEK CONTROL OF A DISK DRIVE ACTUATOR**

Pakorn Serikitkankul, Hiroaki Seki, Masatoshi Hikiu, Yoshitsugu Kamiya, *Dept of Mechanical Systems Engineering, Kanazawa University, Japan*

**AF-11 12:00 THE EFFECTS OF ACTUATOR ARM GEOMETRY ON AIRFLOW AND READ/WRITE HEAD OFF-TRACK VIBRATION IN A MODELED HARD DISK DRIVE PART I: THE EFFECTS OF ACTUATOR ARM THICKNESS**

Hany M. Gross[1], Toru Watanabe[2], David B. Bogy[3], Omer Savas[3], *[1]Seagate Technology, United States of America, [2]Fujitsu Ltd., Japan, [3]University of California at Berkeley, United States of America*

**AF-12 DYNAMICS OF THE OIL-AIR INTERFACE IN HARD**
**12:15 DISK DRIVE BEARINGS**

Ferdinand Hendriks[1], Burt Tilley[2], John Billingham[3], Paul Dellar[4], Rob Hinch[5], *[1]San Jose Research Center, Hitachi Global Storage Technologies, United States of America, [2]F.W. Olin College of Engineering, Needham, United States of America, [3]University of Nottingham, School of Mathematical Sciences, United Kingdom, [4]The Oxford Centre for Industrial and Applied Mathematics, United Kingdom, [5]Brasenose College, Oxford, United Kingdom*

**Apr. 5** **Reception Hall**

## Session BA
## Current Induced Switching I

**Y. Suzuki**

Graduate School of Engineering Science, Osaka University

***BA-01 CRITICAL CURRENT DISTIBUTION IN SPIN**
**14:30 TRANSFER SWITCHED MAGNETIC TUNNELING JUNCTIONS**

M.Pakala, Y.Huai, T.Valet, Z.Diao, *Grandis Inc., United States of America*

**BA-02 MAGNETIZATION SWITCHING DUE TO NON-**
**15:00 OCAL SPIN INJECTION INTO SMALL FERROMAGNETIC PARTICLE**

Takashi[1], Jaroslav Hamrle[1], Tao Yang[1], Yoshichika[2], *[1]Riken FRS, Japan, [2]ISSP Univ of Tokyo, Japan*

**BA-03 NANOMETER SCALE OBSERVATION OF CURRENT-**
**15:15 INDUCED NARROW DOMAIN WALL DEPINNING IN PERPENDICULAR SPIN VALVES**

D. Ravelosona, D. Lacour, J. A. Katine, B. D. Terris, *Hitachi Global Storage Technologies, San Jose Research Center, United States of America*

**BA-04 CURRENT INDUCED MODIFICATIONS OF DOMAIN**
**15:30 WALL**

Pierre-Oliver Jubert[1], Mathias Klaeui[2], Andreas Bischof[1], Rolf Allenspach[1], C. A. F. Vaz[3], G. Faini[4], Ulrich Ruediger[2], *[1]IBM Research, Zurich Research Laboratory, Rueschlikon, Switzerland, [2]Fachbereich Physik, Universitaet Konstanz, Universitaetsstr. 10, Konstanz, Germany, [3]Cavendish Laboratory, University of Cambridge, Madingley Road, Cambridge, United Kingdom, [4]Laboratoire de Photonique et de Nanostructures-CNRS, Route de Nozay, Marcoussis, France*

**BA-05 SPIN TRANSFER EFFECT IN MAGNETIC TUNNEL**
**15:45 JUNCTION WITH LOW RESISTANCE**

Hao Meng, Jian-Ping Wang, *Dept. of Electrical Engineering, University of Minnesota, United States of America*

**BA-06 16:00 ENHANCEMENT OF SPIN CURRENT BY MODIFYING THE CHEMICAL POTENTIAL PROFILE IN THE NANOPILLAR**

Tao Yang[1], Jaroslav Hamrle[1], Takashi Kimura[1], Yoshichika Otani[2], *[1]FRS-RIKEN and CREST-JST, Japan, [2]ISSP-University of Tokyo, FRS-RIKEN and CREST-JST, Japan*

**BA-07 16:15 GREAT ENHANCEMENT OF THE CURRENT INDUCED MAGNETIZATION SWITCHING EFFECT IN EXCHANGE BIASED SPIN VALVES WITH NANO OXIDE LAYER**

Nguyen Thi Hoang Yen, Hyun Jung Yi, Wang-Hyun Park, Sung-Jung Joo, Kyung-Ho Shin, *Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea*

**BA-08 16:30 INSPECTION OF INTRINSIC CRITICAL CURRENTS FOR SPIN-TRANSFER MAGNETIZATION SWITCING BY LOW-TEMPERATURE MEASUREMENTS**

Kojiro Yagami[1], Ashwin Tulapurkar[2], Akio Fukushima[2], Yoshishige Suzuki[3], *[1]SSNC, Sony Corp., Japan, [2]Nano-electronics Institute, AIST, Japan, [3]Department of Materials Engineering Science, Osaka Univ., Japan*

**BA-09 16:45 THERMAL EFFECTS ON THE MAGNETIC-FIELD DEPENDENCE OF SPIN-TRANSFER-INDUCED MAGNETIZATION REVERSAL**

Daniel Lacour, Jordan Katine, Neil Smith, Matthew Carey, Jeffrey Childress, *Hitachi San Jose Research Center, San Jose, CA, United States of America*

**BA-10 17:00 MAGNETIZATION REVERSAL BY SPIN POLARIZED CURRENT IN NANO-PILLARS WITH A SYNTHETIC ANTIFERROMAGNET FREE LAYER**

Nobuki Tezuka[1], Kazuhiro Yonezawa[1], Takao Ochiai[1], Yang Jiang[2], Satoshi Sugimoto[1], Koichiro Inomata[1], *[1]Tohoku University, Japan, [2]CREST-JST, Japan*

**BA-11 17:15 CURRENT INDUCED MAGNETISATION SWITCHING IN ASYMMETRIC NECKED WIRES**

Serban G. Lepadatu, Yong Bing Xu, *Department of Electronics, The University of York, United Kingdom*

## Session BB
## Symposium on Advanced Perpendicular Magnetic Recording

**H. Muraoka**
Tohoku University

***BB-01 14:30 EXCHANGE COUPLED COMPOSITE MEDIA FOR PERPENDICULAR RECORDING**
R. H. Victora, Xiao Shen, *The Center for Micromagnetics and Information Technologies (MINT), United States of America*

***BB-02 15:00 AN OVERVIEW OF THE BENEFITS AND CHALLENGES OF DISCRETE TRACK RECORDING MEDIA**
David Wachenschwanz, Paul Dorsey, Andrew Homola, Wen Jiang, David Treves, Bruce Harper, Norbert Staub, Shoji Suzuki, Henry Nishihira, Crystal Tang, Eric Roddick, *Komag, Inc., United States of America*

***BB-03 15:30 MAGNETIC AND RECORDING PROPERTIES OF PATTERNED PERPENDICULAR ISLANDS**
B. D. Terris[1], G. Hu[1], M. Albrecht[1], T. Thomson[1], C. T. Rettner[2], *[1]Hitachi Global Storage Technologies, San Jose Research Center, United States of America, [2]IBM Almaden Research Center, United States of America*

***BB-04 16:00 NANOIMPRINT TECHNOLOGY AND APPLICATIONS**
Akihiro Miyauchi[1], Chiseki Haginoya[2], Takashi Andou[1], *[1]Materials Research Laboratory, Hitachi Ltd., Japan, [2]Storage Technology Research Center, Hitachi Ltd., Japan*

***BB-05 16:30 MICROMAGNETIC SIMULATION OF HIGH SPEED HEAD DYNAMICS IN PERPENDICULAR RECORDING**
Werner Scholz, Sharat Batra, *Seagate Research, United States of America*

***BB-06 17:00 FUNDAMENTAL FEATURES OF PERPENDICULAR MAGNETIC RECORDING AND THE DESIGN CONSIDERATION FOR FUTURE PORTABLE HDD INTEGRATION**
Yoichiro Tanaka, *Core Technology Center, Toshiba Corporation, Japan*

## Session BC
## Clusters and Particles I

**D.E. Nikles**
University of Alabama

***BC-01 14:30 MODELLING EXCHANGE BIAS IN THIN FILMS AND NANOSTRUCTURES**
Ulrich Nowak, B. Beckmann, G. Scholten, K. D. Usadel, *Universitat Duisburg-Essen, Germany*

**BC-02 15:00 CONTROL OF THE SIZE OF OCTAHEDRAL FePt NANO-DOTS AND THEIR MAGNETIC PROPERTIES**
Hirotaka Ito[1], Toshiyuki Shima[1], Koki Takanashi[1], Yukiko Takahashi[2], Kazuhiro Hono[2], *[1]Institute for Material Research, Tohoku University, Japan, [2]National Institute for Materials Science, Japan*

**BC-03 15:15 MICROSTRUCTURE AND MAGNETIC PROPERTIES OF INTERFACIALLY DISORDERED FePt PARTICLES**
Y. K. Takahashi[1], K. Hono[1], S. Okamoto[2], O. Kitakami[2], Yutaka Shimada[2], *[1]National Institute for Material Science, Japan, [2]IMRAM, Tohoku University, Japan*

**BC-04 15:30 QUANTITATIVE ANALYSIS OF ORDERING OF EQUIATOMIC FePt NANOPARTICLES BY ELECTRON DIFFRACTION**
Takamichi Miyazaki[1], Yukiko K. Takahashi[2], Satoshi Okamoto[1], Osamu Kitakami[1], Yutaka Shimada[1], Zentaro Akase[1], Yasukazu Murakami[1], Daisuke Shindo[1], Kazuhiro Hono[2], *[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan, [2]National Institute for Materials Science, Japan*

**BC-05 15:45 NOVEL FABRICATION METHOD OF IBICVD FOR FePt AND CoPt NANO-PARTICLES**
Qing Yu Xu, Yasuyuki Kageyama, Takao Suzuki, *Information Storage Materials Laboratory, Toyota Technological Institute, Japan*

**BC-06 16:00 EFFECT OF ALIGNING FIELD ON EASY-AXIS ORIENTATION OF DIRECTLY SYNTHESIZED $L1_0$ NANOPARTICLES**
J. W. Harrell, David E. Nikles, Shishou Kang, Zhi Yong Jia, *Center for Materials for Information Technology, The University of Alabama, United States of America*

**BC-07 16:15 CRYSTALLOGRAPHIC ALIGNMENT OF NANOPARTICLES DURING SELF-ASSEMBLY**
Shihai Kan, Madhur Sachan, Jennifer Kirchhoff, Sara A. Majetich, *Physics Dept., Carnegie Mellon University, United States of America*

**BC-08 16:30 XPS STUDY OF THERMAL EFFECTS ON FePt and FePtAg Nanoparticles**

Tao Song[1], Tiejun Zhou[1], Chilong Chen[1], Hao Gong[2], *[1]Data Storage Institute, Singapore, [2]Materials Science Department, National University of Singapore, Singapore*

**BC-09 16:45 MAGNETIC PROPERTIES AND MICROSTRUCTURE OF ISOLATED Fe-Pt NANOPARTICLE-MONOLAYER ASSEMBLY BY PROTECTIVE COATING**

Mu-Pei Chen, Kazuya Kuroishi, Yoshitaka Kitamoto, *Department of Innovative and Engineered Materials, Tokyo Institute of Technology, Japan*

**BC-10 17:00 CO-DEPOSITION OF FePt AND CoPt NANOPARTICLES ON SILICON DIOXIDE**

L. Castaldi [1], Giannakopoulos K.[1], Travlos A.[1], Niarchos D.[1], Boukari S.[2], Beaurepaire E.[2], *[1]Institute of Materials Science NCSR Demokritos, Greece, [2]IPCMS UMR 7504 CNRS-ULP, France*

**BC-11 17:15 STRUCTURAL PHASE TRANSFORMATION OF FePt NANOPARTICLES BY ION IRRADIATION**

B. Rellinghaus[1], O. Dmitrieva[2], M.O. Liedke[3], J. Fassbender[3], *[1]IFW Dresden, Institut fur Metallische Werkstoffe, Germany, [2]Experimentalphysik, AG Farle, Univ. Duisburg Essen, Germany, [3]Institut fur Ionenstrahlphysik und Materialforschung, Forschungszentrum Rossendorf, Germany*

**Apr. 5** **Room 224**

## Session BD
## Magnetic Imaging I

**K. Sueoka**
Hokkaido University

***BD-01 14:30 ADVANCES IN HIGH RESOLUTION MAGNETIC FORCE MICROSCOPY**

H. J. Hug, *University of Basel, Switzerland*

**BD-02 15:00 DIRECT OBSERVATION OF FERROMAGNETIC EXCHANGE BY MAGNETIC FORCE MICROSCOPY**

Antoine Vanhaverbeke, Michel Viret, Olivier Klein, *Commissariat de l'Energie atomique, Saclay, France*

**BD-03 15:15 COMPARING MEDIUM MODELS TO PHYSICAL MEDIA VIA MFM IMAGERY**

Clayton T. Miller, Ronald S. Indeck, Joseph A. O'Sullivan, Marcel W. Muller, *Dept. of Electrical and Systems Engineering, Washington University in St. Louis, United States of America*

**BD-04 15:30 CHARACTERIZATION OF Fe/W SPIN-POLARIZED TIPS BY MEANS OF HOLOGRAPHIC TEM AND SPIN-POLARIZED-STS OF OPTICALLY PUMPED P-GaAs**

Tsuyoshi Matsuda[1], Akira Tonomura[1], Toyokazu Yamada[2], Daisuke Okuyama[2], Naosumi Mizuno[2], Amadeo L. Vazquez de Parga[3], Herman van Kempen[4], Tadashi Mizoguchi[2], *[1]Advanced Research Laboratory, Hitachi, Ltd., Japan, [2]Dept. of Physics, Gakushuin University, Japan, [3]Dept. Fisica de la Materia Condensada, Universidad Autonoma de Madrid, Spain, [4]Institute for Molecules and Molecular systems, Radboud University of Nijmegen, Netherlands*

**BD-05 15:45 LORENTZ MICROSCOPY STUDIES OF DOMAIN WALL TRAP STRUCTURES**

Stephen McVitie[1], Craig Brownlie[1], John N Chapman[1], Chris D W Wilkinson[2], *[1]Department of Physics and Astronomy, University of Glasgow, United Kingdom, [2]Department of Electronics and Electrical Engineering, University of Glasgow, United Kingdom*

**BD-06 16:00 MAGNETIC MICROSTRUCTURES IN NANO-GRANULAR CoPt-Al-O THIN FILMS STUDIED BY ELECTRON HOLOGRAPHY AND LORENTZ MICROSCOPY**

H. S. Park[1], D. Shindo[1], S. Mitani[2], K. Takanashi[2], *[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan, [2]Institute for Materials Research, Tohoku University, Japan*

**BD-07 16:15 SCANNING HALL PROBE MICROSCOPY (SHPM) USING QUARTZ CRYSTAL AFM FEEDBACK**

Munir Dede[1], Koray Urkmen[1,2], Ahmet Oral[2], *[1]Dept. of Physics, Bilkent University, Turkey, [2]Dept. of Physics, Bilkent University, Turkey*

**BD-08 16:30 FOCUSED ION BEAM MODIFIED ATOMIC FORCE MICROSCOPE TIPS FOR SCANNING HALL PROBE MICROSCOPY**

Dorothee Petit[1], Sherri Johnstone[2], David Wood[3], Russel P. Cowburn[1], *[1]Nanoscale Magnetics group, Dept. of Physics, University of Durham, United Kingdom, [2]Centre for Electronic Systems, School of Engineering, University of Durham, United Kingdom, [3]Microsystems Technology group, School of Engineering, University of Durham, United Kingdom*

**BD-09 16:45 NONEQUILIBRIUM MAGNETIC DOMAIN CONFIGURATIONS ASSISTED BY THERMALLY EXCITED MAGNONS**

Byoung C. Choi[1], Grey Arnup[2], Mark R. Freeman[2], *[1]Dept. of Physics & Astronomy, Univ. of Victoria, Canada, [2]Dept. of Physics, Univ. of Alberta, Canada*

**BD-10 MAGNETO-OPTICAL IMAGING USING LIQUID**
**17:00 CRYSTAL MODULATOR**

Takayuki Ishibashi, Zhihao Kuang, Shuta Yufune, Masaru Oda, Toshiro Tani, Yasufumi Iimura, Katsuaki Sato, *Faculty of Technology, Tokyo University of Agriculture and Technology, Japan*

**BD-11 EVOLUTION OF Co/Pt-COVERED NANOLINES**
**17:15 UNDER MAGNETIC FIELD USING COHERENT SOFT X-RAY RESONANT MAGNETIC SCATTERING**

Guillaume Beutier[1], Frederic Livet[2], Alain Marty[1], Gerrit van der Laan[3], Stefan Stanescu[4], Virginie Chamard[2], Vincent Baltz[5], *[1]CEA-SP2M, France, [2]CNRS-LTPCM, France, [3]Magnetic Spectroscopy Group, Daresbury Lab., United Kingdom, [4]ESRF, France, [5]CEA-Spintec, France*

**Apr. 5** **Room 131/132**

## Session BE
## Actuators and Power Devices

**K. Yamasawa**
Shinshu University

**BE-01 ADAPTIVE FUZZY LOGIC FOR THE**
**14:30 CHARECTERIZATION OF AC ACTUATORS**

A. A. Arkadan, Mohamed Mneimneh, N. Alaawar, *Department of Electrical and Computer Engineering, Marquette University, United States of America*

**BE-02 DEVELOPMENT OF A SLOTLESS TUBULAR**
**14:45 LINEAR INTERIOR PERMANENT MAGNET MICRO MOTOR FOR ROBOTIC APPLICATIONS**

Hai Wei Lu, Jian Guo Zhu, Youguang Guo, *Faculty of Engineering, University of Technology, Sydney, Australia*

**BE-03 DEVELOPMENT OF THE CONICAL SPRING LINEAR**
**15:00 VIBRATOR (CSLV) FOR MOBILE PHONE**

Ju Ho Kim[1], Il Oung Park[1], Hwa Young Oh[1], Joon Choi[1], Sung Hong Won[2], *[1]Samsung Electro-Mechanics, Republic of Korea, [2]Division of Electrical and Computer Engineering, Hanyang University, Republic of Korea*

**BE-04 CYLINDRICAL MOVING MAGNET TYPE LINEAR**
**15:15 ACTUATOR HAVING LARGE MOTOR CONSTANT**

Mizuno Tsutomu[1], Kawai Masanori[1], Tsuchiya Fumiaki[1], Kosugi Masashi[1], Yamada Hajime[2], *[1]Faculty of Engineering, Shinshu University, Japan, [2]Doctoral International Collaboration Institute, Japan*

**BE-05 15:30 DESIGN OF A VOICE COIL MOTOR USED IN THE FOCUSING SYSTEM OF A DIGITAL CAMERA**

Shyh-Jier Wang, Mei-Lin Lai, Hsing-Cheng Yu, Jau-Jiu Ju, Der Ray Huang, *Opto-Electronics & Systems Laboratories /ITRI, Taiwan*

**BE-06 15:45 IMPROVMENT OF MAGNETIC CIRCUIT IN LEVITATION SYSTEM USING HTS AND SOFT MAGNETIC MATERIAL**

Mojtaba Ghodsi, Toshiyuki Ueno, Toshiro Higuchi, *Dept of Precision Machinery Eng., The Univ. of Tokyo, Japan*

**BE-07 16:00 EXPERIMENTAL DEVELOPMENT OF A1-D.O.F CONTROLLED MAGNETIC LINEAR BEARING**

I. D. Silva[1], O. Horikawa[2], *[1]Escola Politecnica - University of Sao Paulo, Brazil, [2]Escola Politecnica - University of Sao Paulo, Brazil*

**BE-08 16:15 DISTRIBUTED INDUCTOR DESIGN FOR VRM APPLICATIONS**

Christina Collins, Maeve Duffy, *Dept. Electronic Engineering, NUIGalway, Ireland*

**BE-09 16:30 A PLANAR INDUCTOR USING Mn-Zn FERRITE/POLYIMIDE COMPOSITE THICK FILM FOR LOW-VOLTAGE, LARGE-CURRENT DC-DC CONVERTER**

Isao Kowase, Toshiro Sato, Kiyohito Yamasawa, Yoshimasa Miura, *Faculty of Engineering, Shinshu University, Japan*

**BE-10 16:45 SIMULATION OF A MAGNETIC AMPLIFIER CIRCUIT INCLUDING HYSTERESIS**

Lars Austrin[1], David Ribbenfjard[2], Goran Engdahl[2], *[1]Saab AB, Saab Aerosystems, Linkoping, Sweden, [2]Electrical Engineering, Royal Institute of Technology, Stockholm, Sweden*

**BE-11 17:00 HYBRID PULSE TRANSFORMER WITH PERMANENT MAGNET FOR FLYBACK CONVERTER**

Mizuno Tsutomu, Takata Yukinobu, Matsumoto Masashi, *Faculty of Engineering, Shinshu University, Japan*

**BE-12 17:15 A SYCHRONOUS RECTIFICATION USING A DIGITAL PLL TECHNIQUE FOR CONTACTLESS POWER SUPPLYS**

Hidekazu Miura[1], Shinsuke Arai[1], Fumihiro Sato[1], Hidetoshi Matsuki[1], Tadakuni Sato[2], *[1]Graduate school of engineering, Tohoku University, Japan, [2]NEC Tokin Corporation, Japan*

**13:30-17:00** **Session BP**

## Magneto-Optical Recoroding and Heat Assisted Recording

**T. Klemmer**
Seagate Technology

**A. Nakaoki**
Sony Corporation

**BP-01 ON THE STUDY OF COERCIVITY AND INTERACTION FIELD DISTRIBUTIONS FROM MICROHYSTERESIS LOOPS**

Lin-Xiu Ye, Jia-Mou Lee, Te-Ho Wu, *Taiwan SPIN Research Center and Graduate school of Engineering Science & Technology, National Yunlin Univ. of Science and Technology, Taiwan*

**BP-02 MECHANISM OF DOMAIN EXPANSION IN MAMMOS**

Philipp Herget, T. E. Schlesinger, Daniel D. Stancil, *Data Storage Systems Center, Carnegie Mellon University, United States of America*

**BP-03 MEASUREMENTS OF MAGNETIC DAMPING IN GdFeCo THIN FILMS**

Arata Tsukamoto[1], Katsuji Nakagawa[1], Akiyoshi Itoh[1], Arexei Kimel[2], Daniel Stanciu[2], Andrei Kirilyuk[2], Theo Rasing[2], *[1]College of science and technology, Nihon University, Japan, [2]NSRIM Institute, Radboud University Nijmegen, Netherlands*

**BP-04 FDTD ANALYSIS OF RECORDING LIGHT DISTRIBUTION IN NEAR-FIELD MAMMOS RECORDING SYSTEM**

Matthew M. Manfredonia[1], Paul W. Nutter[1], C. David Wright[2], *[1]School of Computer Science, University of Manchester, United Kingdom, [2]School of Engineering and Computer Science, University of Exeter, United Kingdom*

**BP-05 DESIGN OF OPTICAL FLYING HEAD FOR MAGNETO OPTICAL RECORDING**

Sang-Joon Yoon[1], Jong Soo Lee[2], Young-Pil Park[3], Dong-Hoon Choi[1], *[1]iDOT, Hanyang University, Republic of Korea, [2]Dept. Mech. Eng., Yonsei University, Republic of Korea, [3]CISD, Yonsei University, Republic of Korea*

**BP-06 MAGNETO-OPTICAL PROPERTIES OF TbFeCo FILMS ON A NANO-STRUCTURED SUBSTRATE**

Morio Nakatani[1], Yoshihisa Suzuki[1], Satoshi Sumi[1], Shinji Kobayashi[2], Sakae Tanemura[3], *[1]HD Project BU, SANYO Electric Co., Ltd.,, Japan, [2]Digital Systems Development Center BU, SANYO Electric Co., Ltd., Japan, [3]Nagoya Institute of Technology, Japan*

**BP-07 THERMO-RESISTIVE FLYGHT ATTITUDE MEASUREMENTS OF FLYING HEADS IN NEAR FIELD MAGNETO-OPTICAL DATA STORAGE**

Hans H. Gatzen[1], Stephan Knappmann[2], Claudia Neumeister[1], *[1]Inst. for Microtechnology, Hanover University, Germany, [2]Deutsche Thomson-Brandt GmbH, Germany*

**BP-08 THE EFFECT OF EXTERNAL MAGNETIC FIELD ON MARK SIZE DURING FIELD EMISSION ASSISTED MAGNETIC PROBE RECORDING ON CoNi/Pt MULTILAYERS**

Li Zhang[1], James A. Bain[1], Jian-Gang Zhu[1], Leon Abelmann[2], Takahiro Onoue[2], *[1]Data Storage Systems Center, Carnegie Mellon University, United States of America, [2]MESA Research Institute, University of Twente, Netherlands*

**BP-09 IMPROVED PATTERNED MEDIA FOR PROBE-BASED HAMR**

Emmanuelle Algre, Gilles Gaudin, Ahmad Bsiesy, Jean Pierre Nozieres, *SPINTEC CNRS/CEA (URA2512), France*

**BP-10 TRANSIENT THERMAL RESPONSE OF A NANOSCALE HOT-SPOT IN A FILM WITH ALTERNATING MATERIALS**

Sartaj S. Ghai[1], Cristina H. Amon[2], Woo Tae Kim[3], Myung S. Jhon[1], *[1]Department of Chemical Engineering, Data Storage Systems Center, and Institute for Complex Engineered Systems, Carnegie Mellon University, United States of America, [2]Institute for Complex Engineered Systems, Carnegie Mellon University, United States of America, [3]Department of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, United States of America*

**BP-11 REDUCTION OF COERCIVITY IN FePt/FeRh BILAYER FILMS BY HEATING**

Shigenobu Koyama[1], Hidehiro Ogata[2], Masaki Konno[2], Takao Goto[2], Kunihiro Koike[3], *[1]Daido Electronics Co., Ltd., Japan, [2]Faculty of Engineering, Tohoku Gakuin University, Japan, [3]Faculty of Engineering, Yamagata University, Japan*

**BP-12 DAMPING PARAMETER AND WALL VELOCITY OF RE-TM FILMS**

Tadashi Kobayashi, Hideaki Hayashi, Yuji Fujiwara, Shigeru Shiomi, *Dept. of Physics Engng., Mie University, Japan*

**13:30-17:00** **Session BQ**

## Magnetic Semiconductors I

**H. Munekata**

Imaging Science and Engineering Laboratory, Tokyo Institute of Technology

**BQ-01 FERROMAGNETISM AND ANOMALOUS HALL EFFECT IN Mn-DOPED ZnO THIN FILMS GROWN BY REACTIVE SPUTTERING**

Hyun Jung Kim[1], Jae Ho Sim[2], Hyojin Kim[2], Soon-Ku Hong[2], Dojin Kim[2], Young Eon Ihm[2], Woong Kil Choo[1], *[1]Dept. of Materials Science and Engineering, KAIST, Republic of Korea, [2]Dept. of Materials Science and Engineering, Chungnam National University, Republic of Korea*

**BQ-02 FERROMAGNETISM IN NEW DILUTED MAGNETIC SEMICONDUCTOR $Si_{1-x}Mn_xTe$ CRYSTALS**

Young Hun Hwang, Hye Kyeong Kim, Young Ho Um, *Department of Physics, University of Ulsan, Republic of Korea*

**BQ-03 ROOM TEMPERATURE FERROMAGNETISM IN $Co_xTi_{1-x}O_2$ POWDERS MADE BY SOL-GEL METHOD: A NMR STUDY**

Shi Hui Ge, Xin Wei Wang, Xiao Ming Kou, Xue Yun Zhou, Li Xi, Yalu Zuo, Xiao Lin Yang, Cheng Xian Li, *Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, China*

**BQ-04 MAGNETIC AND HALF-METALLIC PROPERTIES OF Cr-DOPED BETA-SiC**

Yoon-Suk Kim[1], Hanchul Kim[2], Yong-Chae Chung[1], *[1]Dept. of Ceramic Eng., Hanyang University, Republic of Korea, [2]Materials Evaluation Center, Korea Research Institute of Standards and Science, Republic of Korea*

**BQ-05 LOW TEMPERATURE HYDROGEN TREATMENT OF Fe DOPED ZnO FERROMAGNETIC SEMICONDUCTOR**

Geun Young Ahn[1], Seung-Iel Park[1], Sam Jin Kim[1], Bo Wha Lee[2], Chul Sung Kim[1], *[1]Dept. of Physics, Kookmin University, Republic of Korea, [2]Dept. of Physics, Hankuk University of Foreign Studies, Republic of Korea*

**BQ-06 EFFECTS OF OXYGEN PRESSURE ON FERROMAGNETIC ORDERING IN Mn-DOPED ZnO THIN FILMS**

Woo Young Shim[1], Kyung Il Lee[1], Kyung A Jeon[2], Sang Yeol Lee[2], Myung Hwa Jung[3], Woo Young Lee[1], *[1]Department of Material Science Engineering,Yonsei University, Seoul, Republic of Korea, [2]Department of Electrical and Electronic Engineering, Yonsei University, Seoul, Republic of Korea, [3]Korea Basic Science Institute, Daejon 305-333, Republic of Korea*

**BQ-07 MAGNETIC PROPERTIES OF LOW TEMPERATURE GROWN Si:Ce THIN FILMS ON (001) Si SUBSTRATE BY MOLECULAR BEAM EPITAXY**

Takemi Terao, Yasuhito Yoshimizu, Yoshihiro Nishimura, Norifumi Fujimura, *Dept. of Applied materials science, Osaka prefecture university, Japan*

**BQ-08 MAGNETIC, ELECTRICAL PROPERTIES AND STRUCTURE OF Cr-AlN AND Mn-AlN THIN FILMS GROWN ON Si SUBSTRATES**

Yasushi Endo, Takanobu Sato, Ayumu Takita, Yoshio Kawamura, Masahiko Yamamoto, *Dept. of Materials Science and Engineering, Osaka University, Japan*

**BQ-09 MAGNETIC PROPERTIES OF MANGANESE GERMANIUM DIPHOSPHIDE AND MANGANESE PHOSPHIDE GROWN BY MOLECULAR BEAM EPITAXY TECHNIQUE**

Kazuyuki Minami, Jumpei Jogo, Manami Mori, Takayuki Ishibashi, Katsuaki Sato, *Tokyo University of Agriculture and Technology, Japan*

**BQ-10 EFFECT OF ANNEALING ON MAGNETIC PROPERTIES OF NEW (In, Al, Mn)As FERROMAGNETIC SEMICONDUCTORS**

Y. F. Chen[1], W. N. Lee[2], J. H. Huang[1], T. S. Chin[1], H. C. Ku[3], *[1]Department of Materials Science & Engineering, Materials Science Center, National Tsing Hua University, Taiwan, [2]Department of Materials Science & Engineering, National Chiao Tung University, Taiwan, [3]Department of Physics, National Tsing Hua University, Taiwan*

**BQ-11 DILUTED FERROMAGNETIC PROPERTIES IN Fe- AND Co-DOPED $TiO_2$-THIN FILMS**

Kwang Joo[1], Young Ran Park[1], Geun Young Ahn[2], Chul Sung Kim[2], Jae Yun Park[3], *[1]Department of Physics, Konkuk University, Republic of Korea, [2]Department of Physics, Kookmin University, Republic of Korea, [3]Department of Materials Science and Engineering, University of Incheon, Republic of Korea*

**BQ-12 MAGNETIC PROPERTIES OF $Ti_{0.99}Fe_{0.01}O_2$**

Eng Chan Kim, Su Ho Moon, Seung Il, Woo, Hyung Dong Kim, Byung Yong Kim, Sung Hyun Lee, Jong Ho Cho, Young Gull Joh, Dong Ho Kim, *Dept. of Physics, Yenungnam University, Republic of Korea*

**BQ-13 MAGNETOTRANSPORT PROPERTIES OF A ROOM TEMPERATURE FERROMAGNET (Ga,Mn)N**

Heikki Holmberg[1], Natalia Lebedeva[1], Sergei Novikov[1], Pekka Kuivalainen[1], Mathieu Malfait[2], Victor Moschalkov[2], Pasi Kostamo[3], *[1]Electron Physics Laboratory, Department of Electrical and Communications Engineering, Helsinki University of Technology, Finland, [2]Pulsvelden-LVSM,*

*Katholieke Universiteit Leuven, Belgium, [3]Optoelectronics Laboratory, Department of Electrical and Communications Engineering, Helsinki University of Technology, Finland*

**BQ-14 ROOM TEMPERATURE FERROMAGNETISM AND MAGNETORESISTANCE IN CHROMIUM-DOPED INDIUM TIN OXIDE**

Hyoun Soo Kim[1], Sung Hwa Ji[2], Hyojin Kim[2], Dojin Kim[2], Soon Kil Yoon[2], Woong Kil Choo[1], *[1]Dept. of Materials Science and Engineering, KAIST, Republic of Korea, [2]Dept. of Materials Science and Engineering, Chungnam National University, Republic of Korea*

**BQ-15 Co VALENCE AND POSSIBLE SPIN TRANSFORMATION IN DILUTED MAGNETIC SEMICONDUCTORS $Zn_{1-x}Mg_xO$ AND $Zn_{1-x}Co_xO$**

Germanas Peleckis[1], Xiao Lin Wang[1], Ru-Shi Liu[2], Shixue Dou[1], *[1]Institute of Superconducting and Electronic Materials, University of Wollongong, Australia, [2]Dept. of Chemistry, National Taiwan University, Taiwan*

**Apr. 5** **Event Hall**

**13:30-17:00** **Session BR**

## Nanocrystalline and Other Materials I

**A. Makino**

Akita Prefectual Univeristy

**BR-01 MAGNETIC PROPERTIES OF NANOCRYSTALLINE MECHANICALLY ALLOYED $Fe_{86.5}Zr_7B_5Cu_{1.5}$ POWDERS AND THICK FILMS**

Chun-Rong Lin, Wen-Jie Lee, *Dept. of Mechanical Engineering, Southern Taiwan University of Technology, Taiwan*

**BR-02 MICROSTRUCTURE AND MAGNETIC PROPERTIES OF AMORPHOUS AND NANOCRYSTALLINE $Fe_{82}Mn_8Zr_{10}$ ALLOY**

Alagarsamy Perumal[1], Veeturi Srinivas[2], M. Vasundara[2], V. V. Rao[3], R. A. Dunlap[4], *[1]Department of Physics, Indian Institute of Technology Guwahati, India, [2]Department of Physics, Indian Institute of Technology, Kharagpur, India, [3]Cryogenic Engineering Center, Indian Institute of Technology, Kharagpur, India, [4]Department of Physics, Dalhousie University, Canada*

**BR-03 NANO-STRUCTURE AND MAGNETIC PROPERTIES OF AS QUENCHED Fe BASED RIBBONS**

Jifan Hu[1], Bo Li[2], Hong Wei Qin[1], Min Hua Jiang[1], *[1]Department of Physics, Shandong University, China, [2]Central Iron & Steel Research Institute, China*

**BR-04 MAGNETIC PROPERTIES OF HIGH Bs NANOCRYSTALLINE FeCoCuNbSiB ALLOYS**

Yoshihito Yoshizawa, Yuichi Ogawa, *Advanced Electronics Research Lab., Hitachi Metals, Ltd., Japan*

**BR-05 SURFACE MAGNETIC CHARACTERISATION OF FeSiB AMORPHOUS RIBBONS**

Marius Dobromir[1], Maria Neagu[1], Gheorghe Popa[1], Horia Chiriac[2], Gheorghe Singurel[1], Cornelia Hison[3], *[1]Al. I. Cuza University, Faculty of Physics, Romania, [2]National Institute of R&D for Technical Physics, Romania, [3]Dip.Ingegneria dei Materiali e della Produzione, Universita Federico II, Italy*

**BR-06 SOFT MAGNETIC TERNARY AND QUARTERNARY Y-M-B BULK METALLIC GLASSES (M= Fe, Co, Ni)**

Chih Yuan, Tsung Shune Chin, *Department of Materials Science and Engineering, National Tsing Hua University, Taiwan*

**BR-07 DISTRIBUTION OF FLUCTUATIONS OF SWITCHING FIELD IN Fe-RICH WIRES UNDER TENSILE STRESS**

Przemyslav Gawronski[1,2], Arcady Zhukov[2], Juan M. Blanco[2], Julian Gonzalez[3], Krzysztof Kulakowski[1], *[1]Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Poland, [2]Departamento de Fisica Aplicada I, Euscuela Universitaria Politecnica de Donostia, Universidad del Pais Vasco, Spain, [3]Departamento de Fisica de Materiales, Facultad de Quimicas, Universidad del Pais Vasco, Spain*

**BR-08 HIGH TEMPERATURE SUPERPARAMAGNETISM IN BORON SUBSTITUTED FeZrMn ALLOYS**

A. N. Ulyanov[1], Seong-Cho Yu[1], Young-min Kang[2], Sang-Im Yoo[2], *[1]Department of Physics, Chungbuk National University, Cheongju, Republic of Korea, [2]School of Materials Science and Engineering, Seoul National University, Republic of Korea*

**BR-09 MAGNETIC PROPERTIES OF MAGNETICALLY SOFT NANOCOMPOSITE Co-$SiO_2$ PREPARED VIA MECHANICAL MILLING**

Sanjay R. Mishra[1], Igor Dubenko[2], Joe Losby[1], Kanishka Marasinghe[3], Mehdi Ali[3], Nausad Ali[2], *[1]Department of Physics, The University of Memphis, United States of America, [2]Department of Physics, Southern Illinois University, United States of America, [3]Department of Physics, University of North Dakota, United States of America*

**BR-10 MAGNETIC SOFTNESS OF PERMALLOY GRANULAR FILMS PRODUCED BY CO-EVAPORATION**

Yutaka Shimada[1], Tetsuo Itoh[2], Shigeyoshi Yoshida[2], Satoshi Okamoto[1], Osamu Kitakami[1], *[1]Inst. for Multidisciplinary Research, Tohoku University, Japan, [2]NEC Tokin Corporation, Japan*

**BR-11 EFFECTS OF POST-ANNEALING ON THE MAGNETIC PROPERTIES OF FeCoBN THIN FILMS**

Cheon Woon Ji, Inyoung Kim, Jong-Ryoul Kim, *Dept. of Materials Engineering Science, Hanyang University, Republic of Korea*

**Apr. 5** **Event Hall**

**13:30-17:00** **Session BS**

## Hard Magnets

**T. Iriyama**
Daido Steel Co. Ltd

**H. Kato**
Graduate School of Engineering, Tohoku University

**BS-01 MICROSTRUCTURE OF Fe/Pt(110) MULTILAYERS WITH HIGH IN-PLANE Ku**

D. H. Wei[1], C. C. Yu[2], J. H. Chan[3], Y. D. Yao[2], Y. Liou[2], W. C. Cheng[3], T. S. Chin[1], *[1]Department of Materials Science and Engineering, National Tsing-Hua University, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan, [3]Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taiwan*

**BS-02 MAGNETIC PROPERTIES OF Co-Zr-C ALLOYS**

Tetsuji Saito[1], Yasushi Kamagata[1], Wen Quan Wang[2], *[1]Dept. Mechancial Science and Engineering, Chiba Institute of Technology, Japan, [2]Dept. Physics, Jilin University, China*

**BS-03 STUDYING OF MAGNETOELASTIC EFFECTS IN $YFe_{10}V_2$ FERROMAGNETIC ALLOY**

Hassan Khandan Fadafan[1], Mohammad Reza[1], Nasser Tajabor[1], Daniel Fruchart[2], *[1]Dept. of Physics, Ferdowsi Univ. of Mashhad, Iran, [2]Lab. de crystallographie, Poly CNRS, Grenoble, France*

**BS-04 STRUCTURE TRANSITION AND MAGNETIC ANOMALY IN $(Nd_{1-x}Er_x)_3Fe_{18}Co_6Cr_5$ COMPOUNDS**

Bao Dan Liu[1], Yoshio Bando[1], Yi Hua Gao[2], Cheng Chun Tang[2], Guangheng Wu[1], Fuming Yang[1], *[1]Graduate School of Pure and Applied Science, University of Tsukuba, Japan, [2]Advanced Materials Laboratory, National Institute for Materials Science, Japan*

**BS-05 MAGNETOSTRICTIVE STRAIN EFFECTS IN $Pr_6Fe_{11}Ga_3$ ALLOY**

Mohammad Reza Alinejad[1], Nasser Tajabor[1], Ahmad Amirabadizadeh[2], Faiz Pourarian[3], *[1]Dept. of Physics, Ferdowsi University of Mashhad, Mashhad, Iran, [2]Dept. of Physics, University of Birjand, Birjand, Iran, [3]Carnegie Mellon Univ., Pittsburgh, United States of America*

**BS-06 REDUCTION OF GRAIN SIZE AND ORDERING TEMPERATURE IN $L1_0$ FePt THIN FILMS**

An-Cheng Sun[1], Po-Cheng Kuo[1], Jen-Hwa Hsu[2], Huei-Li[2], *[1]Institute of Materials Science and Engineering, and Center for Nanostorage Research, National Taiwan University, Taiwan, [2]Department of Physics, National Taiwan University, and Center for Nanostorage Research, National Taiwan University, Taiwan*

**BS-07 FABRICATION OF FePt/FeCo/FePt EXCHANGE SPRING TRILAYERS WITH VERY THIN FeCo LAYER FOR HIGH RESOLUTION MFM TIPS**

Young Woo Rheem[1], Hitoshi Saito[2], Shunji Ishio[2], *[1]Venture Business Laboratory, Akita University, Japan, [2]Dept. of Materials Science and Engineering, Akita University, Japan*

**BS-08 MAGNETIC PROPERTIES AND MICROSTRUCTURE OF THE GRANULAR FILMS PROCESSED BY ANNEALING Fe-Pt BASED MULTILAYERS**

Tomoko Seki[1], Yukiko Takahashi[2], Kazuhiro Hono[2], *[1]Graduate School of Pure and Applied Sciences,University of Tsukuba, Japan, [2]National Institute for Materials Science, Japan*

**BS-09 ENERGY PRODUCT ENHANCEMENT IN $Fe_{49-x}Co_xPt_{51}$ THIN FILMS**

Shi-Kun Chen[1], Shih-Nan Hsiao[1], Fu-Te Yuan[1], Wen-Cheng Chang[2], *[1]Department of Materials Science and Engineering, Feng Chia University, Taiwan, [2]Department of Physics, National Chung Cheng University, Taiwan*

**BS-10 PRODUCTION OF BULK NANOCOMPOSITE MAGNETS OF AN $Nd_4Fe_{77.5}B_{18.5}$ ALLOY BY COMPRESSION SHEARING METHOD**

Tetsuji Saito[1], Hiroyuku Takeishi[1], Noboru Nakayama[2], *[1]Dept. Mechanical Science and Engineering, Chiba Institute of Technology, Japan, [2]Dept. Machine Intelligence and Systems Engineering, Akita Prefectural University, Japan*

**BS-11 MAGNETIC PROPERTIES OF HIGH COERCIVITY MELT-SPUN Pr-Fe-Co-Ti-B-Si SYSTEM RIBBONS AND THEIR BONDED MAGNETS**

Hroshi Yamamoto, Ryuki Monma, *School of Science & Technology, Meiji University, Japan*

**BS-12 EFFECT OF Fe/Pt RATIO ON THE MAGNETIC PROPERTIES AND CORROSION BEHAVIOR OF NANOCOMPOSITE FePtB RIBBONS**

C. W. Chang, H. W. Chang, C. H. Chiu, Wen-Cheng Chang, *Department of Physics, National Chung Cheng University, Taiwan*

**BS-13 CRYSTALLIZATION BEHAVIOR IN TWO-PHASE PrFeB MECHANICALLY MILLED POWDER**

Melania Marinescu, Yong Zhang, Alexander Gabay, George C. Hadjipanayis, *Dept. of Physics & Astronomy, University of Delaware, United States of America*

**BS-14 EFFECT OF HIGH-MAGNETIC-FIELD ANNEALING ON THE MAGNETIC PROPERTIES OF Nd-Co-B NANOCOMPOSITE RIBBONS**

Hiroaki Kato[1], Keiichi Koyama[2], Terunobu Miyazaki[1], *[1]Dept. of Applied Physics, Tohoku University, Japan, [2]Inst. for Materials Research, Tohoku University, Japan*

**BS-15 PERPENDICULAR ORIENTATION OF BARIUM FERRITE THIN FILM WITH ALUMINUM TOPLAYER**

Nazmun Nahar Shams, Xiao Xi Liu, Mitsunori Matsumoto, Akimitsu Morisako, *Dept. of Information Engineering Shinshu University, Japan*

**BS-16 SIMULATIONS AND EXPERIMENTS ON EDDY CURRENT IN Nd-Fe-B MAGNETS**

Yasuaki Aoyama, Koji Miyata, Ken Ohashi, *Shin-Etsu Chemical Co. Ltd., Japan*

**BS-17 MAGNETIC PROPERTIES OF Nd-Fe-B HDDR THIN HOT PRESSED MAGNET**

Katsuhiko Mori[1], Ryoji Nakayama[1], Koichiro Morimoto[2], *[1]Central Research Institute, Mitsubishi Materials Corp., Japan, [2]Niigata Plant, Mitsubishi Materials Corp., Japan*

**BS-18 PRECISION ANALYSIS OF MAGNETIZATION PROCESS IN $Nd_2Fe_{14}B$ SINTERED MAGNETS**

Kurima Kobayashi[1], Kengo Itoh[1], Masato Sagawa[2], *[1]Dept. of Materials and Life Science, Shizuoka Institute of Science and Technology, Japan, [2]Intermatallics Co.,Ltd., Japan*

**BS-19 MICROSTRUCTURE CONTROL IN HDDR PROCESS FOR HIGHER ANISOTROPIC Nd-Fe-B MAGNET POWDERS**

Noriyuki Kuwano[1], Masaru Itakura[2], Yoshitsugu Tomokiyo[2], Ryoji Nakayama[3], Koichiro Morimoto[4], *[1]ASTEC, Kyushu University, Japan, [2]Dept. of Appl. Sci. for Electr. Mater., Kyushu University, Japan, [3]Central Res. Inst., Mitsubishi Materials Corp., Japan, [4]Niigata Plant, Mitsubishi Materials Corp., Japan*

**BS-20 EFFECT OF BORON CONTENT ON THE MAGNETIC PROPERTIES, PHASE EVOLUTION AND MICROSTRUCTURE OF $Pr_9Fe_{100-x}Ti_{2.5}B_x$ (x=7-15) NANOCOMPOSITES**

C. H. Chiu, C. W. Chang, H. W. Chang, Wen-Cheng Chang, *Department of Physics, National Chung Cheng University, Taiwan*

**BS-21 ANISOTROPIC THIN BONDED MAGNETS PREPARED BY COMPACTION USING SLIP-FLOW PHENOMENON**

Fumitoshi Yamashita[1], Hirotoshi Fukunaga[2], *[1]Matsushita Electric Industrial Co., Ltd., Japan, [2]Faculty of Engineering, Nagasaki University, Japan*

**BS-22 THE EFFECT OF $H_2$ ANNEALING ON THE MAGNETIC PROPERTIES OF ELECTRODEPOSITED CoPt**

Fernando M. F. Rhen, J. M. D. Coey, *Physics Department, Trinity College, Ireland*

**Apr. 5** **Event Hall**

**13:30-17:00** **Session BT**

## Films and Surfaces II

**S. Nakagawa**

Tokyo Institute of Technology

**BT-01 MAGNETIC REVERSAL STUDY OF Au/FePt THIN FILMS WITH VERY HIGH COERCIVITY**

Fu-Te Yuan[1], Shi-Kun Chen[1], Lance Horng[2], Jia-Lin Tsai[3], *[1]Dept. Materials Science and Engineering, Feng Chia University, Taiwan, [2]Dept. Physics, National Changhua University of Education, Taiwan, [3]Dept. Materials Science & Engineering, National Chung Hsing University, Taiwan*

**BT-02 MICROSTRUCTURE AND MAGNETIC PROPERTIES OF GRANULAR NANOCOMPOSITE FePt/Ag MULTILAYER FILMS**

S. C. Chen[1], P. C. Kuo[2], A. C. Sun[2], C. Y. Chou[2], Y. H. Fang[2], S. Y. Kuo[3], *[1]Department of Mechanical Engineering, De Lin Institute of Technology, Taipei 236 and Center for Nanostorage Research, National Taiwan University, Taiwan, [2]Institute of Materials Science and Engineering and Center for Nanostorage Research, National Taiwan University, Taiwan, [3]Department of Civil Engineering, De Lin Institute of Technology, Taiwan*

**BT-03 EFFECT OF Ru INTERLAYER ON EXCHANGE COUPLING IN FePt/Fe FILMS**

Jian Hua Jiang, N. Tezuka, K. Inomata, *Department of Materials Science, Tohoku University, Japan*

**BT-04 ELECTRODEPOSITION OF FePt MAGNETIC MATERIAL AND EMBEDDING INTO ANODIC ALUMINA-NANOHOLES**

Shigeru Ichihara, Miki Ueda, Toru Den, *Inorganic Material Research, Canon Inc., Japan*

**BT-05 Pt THICKNESS DEPENDENCE OF OSCILLATORY INTERLAYER EXCHANGE COUPLING IN [CoFe/Pt/CoFe]/IrMn MULTILAYERS WITH PERPENDICULAR ANISOTROPY**

Jong Gu Choi[1], Jin Yong Lee[1], Mi Sun Kim[1], Sun Wook Kim[1], Do Guwn Hwang[1], Sang Suk Lee[1], Jang rho Rhee[2], *[1]Dept. of Computer and Electronic Physics, Sangji University, Republic of Korea, [2]Dept. of Physics, Sookmyung Women University, Republic of Korea*

**BT-06 THERMAL STABILITY STUDY IN CoFe/Os/OsMn FILMS**

Tai-Yen Peng[1], Yeong-Der Yao[2], Chi-Kuen Lo[3], Ta-Chang Tien[4], San-Yuan Chen[1], *[1]The Department of Materials Science and Engineering, National Chiao Tung University, Taiwan, [2]Opto Electronics and Systems Laboratories, Industrial Technology Research Institute, Taiwan, [3]Institute of Phys., Academia Sinica, Taiwan, [4]Material Research Laboratories, Industrial Technology Research Institute, Taiwan*

**BT-07 MAGNETO-OPTICAL PROPERTIES OF SPIN VALVE STRUCTURE**

Jung-Hwa Seo[1], Jae-Joon Lim[1], Lan Jin[1], Kwang-Enn Lee[1], E. A. Gan' shina[2], Cheo Gi Kim[1], Chong-Oh Kim[1], *[1]Dept. of Materials Science and Engineering, Chungnam National University, Republic of Korea, [2]Physical Faculty, Moscow State University, Russian Federation*

**BT-08 EFFECT OF RuCo AND $PdSiO_2$ UNDERLAYERS ON MAGNETIC PROPERTIES OF Co/$PdSiO_2$ MULTILAYERS**

Won Bae, Byun, Taek Dong Lee, *Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea*

**BT-09 MAGNETIC PROPERTY CALCULATIONS FOR B2-$Co_xAl_{1-x}$ STRUCTURE AT THE INTERFACE OF Co/Al MULTILAYER**

Sang-Pil Kim[1], Seung-Cheol Lee[2], Kwang-Ryeol Lee[2], Yong-Chae Chung[1], *[1]Dept. of Ceramic Eng., Hanyang University, Republic of Korea, [2]Future Technology Research Division, KIST, Republic of Korea*

**BT-10 SELECTIVE MOCVD GROWTH OF $Fe_3O_4$ EPITAXIAL THIN FILMS FOR NANOSTRUCTURE**

Manabu Gomi[1], Hiromitsu Nogi[2], *[1]Dept. of Environmental and Materials Engineering, Nagoya Institute of Technology, Japan, [2]School of Materials Science, Japan Advanced Institute of Science and Technology, Japan*

**13:30-17:00** **Session BU**

## Films and Surfaces III

**R. Nakatani**

Science and Technology Center for Atoms, Molecules and Ions Control, Graduate School of Eng, Osaka University

**BU-01 SYNTHESIS AND CHARACTERIZATION OF FERROMAGNETIC MnSiC COMPOUND**

Fumiyoshi Takano[1], Hironori Ofuchi[2], Jeung Woo Lee[3], Koki Takita[3], Hiro Akinaga[1], *[1]Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology, Japan, [2]Department of Materials Science and Engineering, Graduate School of Engineering, Nagoya University, Japan, [3]Institute of Materials Science, University of Tsukuba, Japan*

**BU-02 EPITAXIAL $ABO_3$-TYPE OXIDE FILMS PREPARED BY THE SOL-GEL METHOD**

Takashi Taniguchi[1], Fukuoka Naoto[1], Ozawa Tadashi[2], Nagata Yujiro[1], Noro yoshihiko[3], Samata Hiroaki[4], *[1]Dept. of Electrical Engn. and Electronics, Aoyama Gakuin University, Japan, [2]National Institute for Materials Science, Japan, [3]Kawazoe Frontier Technologies, Co. Ltd, Japan, [4]Faculty of Maritime Sciences, Kobe University, Japan*

**BU-03 STUDY OF MAGNETIC INTERACTION IN METALLIC NANOWIRES NETWORKS**

Ioan Dumitru[1], Feng Li[2], John B. Wiley[2], Dorin Cimpoesu[3], Alexandru Stancu[3], Leonard Spinu[4], *[1]Advanced Materials Research Institute, University of New Orleans, United States of America, [2]AMRI and Department of Chemistry, University of New Orleans, New Orleans, United States of America, [3]Faculty of Physics, Al. I. Cuza University, Iasi, Romania, [4]Department of Physics and AMRI, University of New Orleans, New Orleans, United States of America*

**BU-04 THE MAGNETIZATION REVERSAL OF Fe FILMS ON Ag SUBMICROMETER PYRAMIDAL ISLANDS**

Chin-Chung Yu[1], Yeong-Der Yao[2], Yung Liou[2], *[1]Dept. of Appl. Phys, National University of Kaohsiung, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan*

**BU-05 MAGNETIC AND ORDERING STUDIES OF SPUTTERING NANOSTRUCTURED $Fe_{50}Ni_{50}$ FILMS**

Qi Zeng, Ian Baker, *Thayer School of Engineering, Dartmouth College, United States of America*

**BU-06 TUNED MAGNETISM IN OFF-STOICHIOMETRIC YTTRIUM IRON GARNET THIN FILMS AND ITS RELATION TO PREFERENTIAL SITE-OCCUPATION**

Niels Keller[1], Yves Dumont[2], Elena Popova[3], David S. Schmool[4], Sarbari Bhattacharya[5], Branko Stahl[5], Pierre Richard Dahoo[1], Michel Tessier[1], Marcel Guyot[1], *[1]LMOV, University of Versailles - CNRS, France, [2]LPSC, University of Versailles - CNRS, France, [3]Lab. Vaste-Stoffysica en Magnetisme, K.U. Leuven, Belgium, [4]Departamento de Fisica and IFIMUP, Univ. do Porto, Portugal, [5]Fachbereich Materialwissenschaft, TU Darmstadt, Germany*

**BU-07 MAGNETIC PROPERTIES OF THIN CHROMIUM LAYERS IN Gd/Cr AND Y/Cr MULTILAYERS STUDIED USING $^{119}$Sn MOSSBAUER SPECTROSCOPY**

Norihiro Jiko[1], Ko Mibu[2], Tomasz Baczewski[3], *[1]Institute for Chemical Research, Kyoto University, Japan, [2]Research Center for Low Temperature and Materials Sciences, Kyoto University, Japan, [3]Institute of Physics, Polish Academy of Sciences, Poland*

**BU-08 MODIFIED SUFACE STATE OF Cr(001) THIN FILM SURFACES OBSERVED BY SCANNING TUNNELING SPECTROSCOPY**

Hirofumi Oka, Kazuhisa Sueoka, *Graduate School of Information Science and Technology, Hokkaido University, Japan*

**BU-09 THEORETICAL STUDY OF IRON FILMS ON TUNGSTEN**

Daniel Spisak, Juergen Hafner, *Dept. of Materials Science, Vienna University, Austria*

**Apr. 5** **Event Hall**

**13:30-17:00**

## Session BV
## Magnetoimpedance

**M. Vazquez**

Instituto de Ciencia de Materiales de Madrid, CSIC

**BV-01 CHARACTERISTICS OF HIGHLY ENHANCED PHASE DETECTION TYPE MAGNETIC FIELD SENSOR BY CONTROLLING AN ANNEALING TEMPERATURE**

Tetsuya Ozawa, Chikako Yokota, Shin Yabukami, Ken-ichi Arai, *Research Institute of Electrical Communication, Tohoku University, Japan*

**BV-02 HIGH FREQUENCY IMPEDANCE OF AMORPHOUS MAGNETIC TRANSMISSION LINES**

Kwang-Ho Shin[1], Younghak Kim[2], Geon Sa-Gong[3], Sang-Ho Lim[4], *[1]Dept. of Multimedia Engineering, Kyungsung University, Republic of Korea, [2]Department of Electrical Engineering, Pukyeong National University, Republic of Korea, [3]Department of Electrical Engineering, Dong-A University, Republic of Korea, [4]Division of Materials Science and Engineering, Korea University, Republic of Korea*

**BV-03 MAGNETOIMPEDANCE EFFECTS IN ELECTRODEPOSITING FeCoNi THIN FILMS DIRECTLY ON n-Si(100)**

Z. Y. Zhong[1], H. W. Zhang[1], X. L. Tang[1], Y. Shi[1], S. Liu[2], *[1]College of Microelectronics and Solid-state Electronics, University of Electronic Science and Technology of China, China, [2]College of Opto-electronics Information, University of Electronic Science and Technology of China, China*

**BV-04 MICROMACHINED LAYERED THIN FILM MAGNETOIMPEDANCE ELEMENT**

Hideya Yamadera[1], Yuji Nishibe[1], Norikazu Ohta[1], Atsushi Tsukada[1], Nobuyoshi Sugitani[2], *[1]Toyota Central Research & Development Laboratories,Inc., Japan, [2]Toyota Motor Co., Japan*

**BV-05 AC BIASED SUB NANO TESLA MAGNETIC FIELD SENSOR FOR LOW FREQUENCY APPLICATIONS UTILISING MAGNETO IMPEDANCE IN MULTILAYER FILMS**

Paul Delooze, Larissa V. Panina, Desmond J. Mapps, *School of Computing, Communications and Electronics, University Of Plymouth, United Kingdom*

**BV-06 CHARACTERIZATION OF INTERFACIAL PROPERTIES IN MAGNETIC TUNNEL JUNCTIONS BY BIAS-DEPENDENT COMPLEX IMPEDANCE SPECTROSCOPY**

C. Y. Hsu, J. C. A. Huang, *Department of Physics, National Cheng Kung University, Taiwan*

**BV-07 MAGNETO-IMPEDANCE EFFECT IN NiFeP/CuBe ELECRTOLESS-DEPOSITED WIRES BY DC JOULE ANNEALING**

Shirong Wu, Wangzhi Yuan, Zhen Jie Zhao, Jian Zhong Ruan, Xie Long Yang, *Dept. of Physics, East China Normal University, China*

**BV-08 THE INFLUENCE OF CURRENT AMPLITUDE ON ASYMMETRIC OFF-DIAGONAL MAGNETOIMPEDANCE IN FIELD-ANNEALED AMORPHOUS RIBBONS**

Nikita A. Buznikov[1], Cheol Gi Kim[1], Chong Oh Kim[1], Seok-Soo Yoon[2], *[1]Research Center for Advanced Magnetic Materials, Chungnam National University, Republic of Korea, [2]Department of Physics, Andong National University, Republic of Korea*

**BV-09 IMPEDANCE MATCHING NETWORKS FOR POWER TRANSFER AND SENSITIVITY ENHANCEMENT IN GMI SENSORS**

David de Cos[1], Serghei Sandacci[2], Alfredo Garcia-Arribas[1], Jose Manuel Barandiaran[1], *[1]Departamento de Electricidad y Electronica, Universidad del Pais Vasco, Spain, [2]SoCCE, University of Plymouth, United Kingdom*

**BV-10 EXPERIMENTAL EVIDENCE OF FERROMAGNETIC RESONANCE IN MAGNETOIMPEDANCE MEASUREMENTS**

David de Cos, Alfredo Garcia-Arribas, Jose Manuel Barandiaran, *Departamento de Electricidad y Electronica, Universidad del Pais Vasco, Spain*

**BV-11 3-AXIS AMORPHOUS WIRE TYPE GIANT MAGNETO-IMPEDANCE SENSORS**

Chang Mei Cai, Michiharu Yamamoto, Hitoshi Aoyama, Masaki Mori, Yoshinobu Honkura, *Electronic & Magnetic product Div., Aichi Steel Corporation, Japan*

**BV-12 ACCELEROMETER USING MI SENSOR**

Hayato Takei, Masaki Mori, Eiji Kako, Hitoshi Aoyama, Michiharu Yamamoto, Yoshinobu Honkura, *Aichi Steel Corporation, Japan*

**Apr. 5** **Event Hall**

**13:30-17:00** **Session BW**

## Magnetic Sensors and Sensing Systems

**P.J.P. de Freitas**

Institute for Systems and Computer Engineering-Microsistemas e Nanotecnologias

**Y. Takemura**

Yokohama National University

**BW-01 MAGNETIC FIELD SENSING BY A PIEZOELECTRIC/MAGNETOSTRICTIVE RESONATOR**

Nobuyuki Yoshizawa[1], Yutaka Shimada[2], *[1]Salesian Polytechnic, Japan, [2]IMRAM Tohoku Univ, Japan*

**BW-02 MICROMAGNETIC SIMULATION FOR NANOBEADS DETECTION USING PLANAR HALL SENSORS**

Yao Wen Liu[1], Zong Zhi Zhang[2], Qing Yuan Jin[2], *[1]Dept. of Physics, Tongji Unversity, Shanghai, China, [2]Dept. of Optical Science and Engineering, Fudan Unversity, Shanghai, China*

**BW-03 IMPROVED GMR SENSITIVITY OF ELECTRODEPOSITED FeCoNi/Cu MULTILAYERS**

Jie Gong[1], W. H. Butler[2], G. Zangari[3], *[1]MINT center, Materials Science Program, University of Alabama, Tuscaloosa, United States of America, [2]MINT center, University of Alabama, Tuscaloosa, United States of America, [3]Materials Science and Engineering and CESE, University of Virginia, United States of America*

**BW-04 HIGH-TEMPERATURE OPERATIONS OF ROTATION ANGLE SENSORS WITH SPIN-VALVE-TYPE MAGNETIC TUNNEL JUNCTIONS**

Takashi Takenaga, Beysen Sadeh, Takeharu Kuroiwa, Hiroshi Konbayashi, Tatsuo Oomori, *Advanced R&D Center, Mitsubishi Electric Corporation, Japan*

**BW-05 CONDUCTIVE MICRO-BEAD ARRAY DETECTION BY HIGH-FREQUENCY EDDY-CURRENT TESTING TECHNIQUE WITH SV-GMR SENSOR**

Sotoshi Yamada[1], Komkrit Chomsuwan[1], Takeshi Hagino[1], Haiyan Tian[2], Masayoshi Iwahara[1], *[1]Institute of Nature and Environmental Technology, Kanazawa University, Japan, [2]The Key Laboratory of High Voltage and New Technology, Chongqing University, China*

**BW-06 APPLICATION OF EDDY-CURRENT TESTING TECHNIQUE FOR HIGH-DENSITY DOUBLE-LAYER PRINTED CIRCUIT BOARD INSPECTION**

Komkrit Chomsuwan[1], Sotoshi Yamada[1], Masayoshi Iwahara[1], Hiroyuki Wakiwaka[2], Shigeru Shoji[3], *[1]Institute of Nature and Environmental Technology, Kanazawa University, Japan, [2]Dept. of Electrical Engineering, Shinshu University, Japan, [3]TDK corporation, Japan*

**BW-07 ELECTROMAGNETIC NON-DESTRUCTIVE TESTING OF RUST REGION IN STEEL**

Yuji Gotoh[1], Hiroshi Hirano[2], Masanori Nakano[2], Koji Fujiwara[2], Norio Takahashi[2], *[1]Kurume National College of Technology, Japan, [2]Dept. Electrical and Electronic Eng. Okayama University, Japan*

**BW-08 EDDY-CURRENT SCRATCH INSPECTION WITH HIGH PROBE LIFT-OFF**

Haiyan Tian[1], Sotoshi Yamada[1], Masayoshi Iwahara[1], H.Watanabe[2], Hirotake Tooyama[1], *[1]Institute of biological measurement and applications, Kanazawa University, Japan, [2]Research & Development Lab., Daido Steel Co.Ltd., Japan*

**BW-09 EVALUATION OF FATIGUE DAMAGE IN AN AUSTENITIC STAINLESS STEEL (SUS304) USING THE EDDY CURRENT PROBE**

Mohachiro Oka[1], Terutoshi Yakushiji[2], Yuji Tsuchida[3], Masato Enokizono[3], *[1]Dept. Computer and Control Engineering, Oita National College of Thechnology, Japan, [2]Dept. Mechanical Engineering, Oita National College of Thechnology, Japan, [3]Dept. of Electrical and Electronic Engineering, Oita University, Japan*

**BW-10 NUMBER OF DETECTING PROBE AND SPECTRAL COMPONENTS IN TWO-DIMENSIONAL MAGNETIC FIELD VISUALIZATION BASED ON THE PROJECTION METHOD**

Takashi Nishimura, Yoshihiro Miyamoto, Masayoshi Iwahara, Sotoshi Yamada, *Graduate School of Natural Science and Technology, Kanazawa University, Japan*

**BW-11 MAGNETIC FIELD OPTICAL SENSORS USING (TbY)IG CRYSTALS WITH STRIPE MAGNETIC DOMAIN STRUCTURE**

K. Okubo, O. Kamada, *Dept. of Electronic Engineering, Polytechnic University, Japan*

**BW-12 PARAMETRIC MAGNETIC SENSOR WITH PULSE OSCILLATOR**

Koichi Karasawa, Masaki Kurumisawa, *Nagano National College of Technology, Japan*

**BW-13 A TORQUE SENSOR USING MAGNETOSTRICTIVE SLEEVE ATTACHED TO THE SHAFT BY SHRINK-FIT**

Ichiro Sasada, Youhei Habata, Yoshiyuki Etou, *Dept. of Applied Science for Electronics and Materials, Kyushu Univerity, Japan*

**BW-14 THE SEARCH SYSTEM FOR CRACKS IN THE DISTRIBUTION LINE USING MAGNETIC FIELD**

Hideyuki Yamaguchi[1], Takashi Nonaka[2], Fumihiro Sato[1], Hidetoshi Matsuki[1], Tadakuni Sato[3], *[1]Graduate School of Tohoku University, Japan, [2]National College of Technology Hachinohe, Japan, [3]NEC Tokin Corporation, Japan*

**BW-15 DEVELOPMENT OF A MAGNETIC SEAT SENSOR FOR MONITORING CONDITION OF A CAR DRIVER**

Yuji Tsuchida[1], Hiroyasu Shimoji[1], Takashi Todaka[1], Masato Enokizono[1], Hideyuki Yamane[2], Yoshimi Enoki[2], Etsunori Fujita[2], *[1]Faculty of Engineering, Oita University, Japan, [2]Delta Tolling Co., Japan*

**13:30-17:00** **Session BX**

## Magnetic Particles in Life Science

**A. Sandhu**

Quantum Nanoelectronics Research Center, Tokyo Institute of Technology

**BX-01 $MgFe_2O_4$ NANO-PARTICLE FOR INTERSTITIAL HYPERTHERMIA ON CANCER TREATMENT**

Toshifumi Shimizu, Masaaki Matsui, *Dep. of Crystalline Material Science, Nagoya University, Japan*

**BX-02 MAGNETIC RESONANCE OF POLYASPARTIC ACID-COATED MAGNETITE NANOPARTICLES ADMINISTERED IN MICE**

Neda Sadeghiani[1], Luzirlane Barbosa[1], Maria-Helena Guedes[1], Sacha Chaves[1], Judes Santos[2], Osni Silva[3], Fernando Pelegrini[3], Ricardo Azevedo[1], Paulo Morais[2], Zulmira G. M. Lacava[1], *[1]Instituto de Biologia, Universidade de Brasilia, Brazil, [2]Instituto de Fisica, Universidade de Brasilia, Brazil, [3]Instituto de Fisica, Universidade Federal de Goias, Brazil*

**BX-03 DIAMAGNETIC ACCUMULATION AND ALIGNMENT OF NUCLEOPROTEIN MICROPARTICLES IN HIGH GRADIENT MAGNETIC FIELD**

Svetlana B.Norina, Kwang Sup Soh, Sang Hyun Park, Smig Il Cho, *Biomedical Physics Lab., School of Physics, Seoul National University, Russian Federation, [2]Biomedical Physics Lab., School of Physics, Seoul National University, Republic of Korea*

**BX-04 MAGNETIC NANOPARTICLES ASSEMBLY ON PEPTIDE NANOTUBE**

Mutsuhiro Shima[1], Ipsita A. Banerjee[2], Ling Tao Yu[2], Hiroshi Matsui[2], Tomoko Yoshino[3], Haruko Takeyama[3], Tadashi Matsunaga[3], *[1]Dept. of Materials Science and Engineering, Rensselaer Polytechnic Institute, United States of America, [2]Dept. of Chemistry and Biochemistry at Hunter College and the Graduate Center, The City University of New York, United States of America, [3]Dept. of Biotechnology, Tokyo University of Agriculture and Technology, Japan*

**BX-05 PREPARATION OF CELLULOSE BASED BIOCOMPATIBLE SUSPENSION OF NANO SIZED $\gamma$-$Al_xFe_{2-x}O_3$**

Nand Kishore Prasad[1], Dulal Panda[2], Sher Singh[3], Dhirendra Bahadur[1], *[1]Metallurgical Engineering and Materials Science, Indian Institute of Technology, Bombay, Powai, Mumbai, India, [2]School of BioSciences & Bioengineering, Indian Institute of Technology, Bombay, Powai, Mumbai, India, [3]Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai, India*

**BX-06 IN VIVO BIO-DISTRIBUTION OF INTRAVENOUSLY INJECTED Tc-99m LABELED FERRITE NANOPARTICLES BOUNDED WITH BIOCOMPATIBLE MEDICALS**

Chao-Ming Fu[1], Yuh-Feng Wang[2], Tang-Yi Lin[1], Yu-Feng Guo[1], Fu-Wen Lee[2], *[1]Physics department, National Kaoshiung Normal University, Taiwan, [2]Department of Nuclear Medicine, Buddhish Dalin TzuChi General Hospital, Taiwan*

**BX-07 IN VITRO INVESTIGATION OF MICE BLOOD DOPED WITH MAGNETITE-COATED NANOPARTICLES**

J. F. B. Santana[1], M. A. G. Soler[1], S. W. da Silva[1], M. H. Guedes[2], Zulmira G. M. Lacava[2], P .C. Morais[1], *[1]Nucelo de Fisica Aplicada, Instituto de Fisica, Universidade de Brasilia, Brazil, [2]Departamento de Genetica e Morfologia, Instituto de Ciencias Biologias, Universidade de Brasilia, Brazil*

**BX-08 DEXTRAN-COATED MAGNETITE NANOPARTICLES EFFECTS IN MICE: A TRANSMISSION ELECTRON MICROSCOPY INVESTIGATION**

Leandro M. Lacava[1], Ricardo B. Azevedo[1], Sonia N. Bao[1], Paulo C. Morais[2], Zulmira G. M. Lacava[1], *[1]Institute of Biology, University of Brasilia, Brazil, [2]Institute of Physics, University of Brasilia, Brazil*

**BX-09 STYRENE COATED IRON NANOBEAD FOR MEDICAL USE**

Carlos S. Kuroda[1], Masahito Maeda[1], Hiroshi Nishibiraki[1], Nobuhito Matsushita[1], Hiroshi Handa[2], Masanori Abe[1], *[1]Dept. of Physical Electronics, Tokyo Institute of Technology, Japan, [2]Dept. of Biological Information, Tokyo Institute of Technology, Japan*

**BX-10 MOSSBAUER STUDIES OF NANO-SIZE CONTROLLED IRON OXIDE FOR BIOMEDICAL APPLICATIONS**

Sang Won Lee, Sam Jin Kim, In-Bo Shim, Chul Sung Kim, *Dept. of Physics, Kookmin University, Republic of Korea*

**BX-11 SYNTHESIS OF NANO-SIZE MAGNETITE COATED WITH CHITOSAN FOR MRI CONTRAST AGENT BY SONOCHEMISTRY**

Hui Ping Shao[1], Hyo Sook Lee[2], Yu Qiang Huang[1], Byung Kook Kwak[3], Chong Oh Kim[1], *[1]Department of materials engineering, ChungNam National University, Republic of Korea, [2]Korea Institute of Geoscience & Mineral Resources, Republic of Korea, [3]College of Medicine, Chung-Ang University, Republic of Korea*

**BX-12 IN VIVO AND IN VITRO INVESTIGATION OF PHOTOSENSITIZER-COATED SUPERPARAMAGNETIC NANOPARTICLES FOR PHOTODYNAMIC THERAPY**

Sang-Im Park[1], Jong-Hwan[2], Jong-Hee Kim[3], Chong-Oh Kim[1], *[1]Materials Engineering, Chungnam National University, Republic of Korea, [2]Division of veterinary pharmacology and toxicology, Chungnam National University, Republic of Korea, [3]Research Center for Advanced Magnetic Materials, Chungnam National University, Republic of Korea*

**BX-13 EVALUATION OF NEW COMPLEXES OF BIOCOMPATIBLE MAGNETIC FLUID AND 3rd GENERATION OF PHOTOSENSITIZER USEFUL TO CANCER TREATMENT**

Antonio C. Tedesco[1], Patricia P. Macaroff[1], Daniela M. Oliveira[1], Karina F. Ribeiro[1], Zulmira G. M. Lacava[2], Emilia C. D. Lima[3], Paulo C. Morais[4], *[1]FFCLRP,Universidade de Sao Paulo, Brazil, [2]Instituto de Ciencias Biologicas, Universidade de Brasilia, Brazil, [3]Instituto de Quimica, Universidade Federal de Goias, Brazil, [4]Instituto de Fisica Nucleo de Fisica Aplicada,Universidade de Brasilia, Brazil*

**Apr. 5** **Room 141/142**

**18:00-20:00** **Session BZ**

## Evening Symposium on MRAM

**T. Miyazaki**

Tohoku University

***BZ-01** Saied Tehrani, Freescale, United States of America

***BZ-02** Jim Deak, NVE, United States of America

***BZ-03** William Gallagher, IBM, United States of America

***BZ-04** Hiroaki Yoda, NEC-Toshiba, Japan

## Session CA
## Magnetic Tunnel Junctions

**K.H. Shin**
Korea Institute of Science and Technology

***CA-01 9:30 230% ROOM TEMPERATURE MAGNETORESISTANCE IN CoFeB/MgO/CoFeB MAGNETIC TUNNEL JUNCTIONS**

David D. Djayaprawira[1], Koji Tsunekawa[1], Motonobu Nagai[1], Hiroki Maehara[1], Shinji Yamagata[1], Naoki Watanabe[1], Shinji Yuasa[2], Koji Ando[2], *[1]Anelva Corporation, Japan, [2]National Institute of Advanced Industrial Science and Technology (AIST), Japan*

**CA-02 10:00 HIGH TUNNEL MAGNETORESISTANCE IN EPITAXIAL $Co_2Cr_{0.6}Fe_{0.4}Al$/MgO/CoFe TUNNEL JUNCTIONS**

Takao Marukame, Takashi Kasahara, Ken-ichi Matsuda, Tetsuya Uemura, Masafumi Yamamoto, *Division of Electronics for Informatics, Graduate School of Information Science and Technology, Hokkaido University, Japan*

**CA-03 10:15 EXTRAORDINARY TUNNEL MAGNETORESISTANCE IN HALF METALLIC FERROMAGNETIC DEVICES**

T. W. Kim[1], Injun Hwang[1], Y. K. Kim[2], R. Gambino[3], Wanjun Park[1], *[1]Samsung Advanced Institute of Technology, Republic of Korea, [2]Korea University, Republic of Korea, [3]SUNY at Stony Brook, United States of America*

**CA-04 10:30 INELASTIC ELECTRON TUNNELING SPECTROSCOPY IN MAGNETIC TUNNEL JUNCTIONS WITH MgO(001) TUNNEL BARRIER**

Takefumi Miyakoshi[1], Yasuo Ando[1], Mikihiko Oogane[1], Terunobu Miyazaki[1], Hitoshi Kubota[2], Akio Fukushima[2], Taro Nagahama[2], Shinji Yuasa[2], Shinji Yuasa[3], *[1]Dept, of Applied Physics, Tohoku University, Japan, [2]National Institute of Advanced Industrial Science and Technology, Japan, [3]PRESTO, Japan Science and Technology Agency (JST), Japan*

**CA-05 10:45 SCANNING TUNNELING MICROSCOPY STUDY OF A TUNNELING MAGNETO-RESISTANCE DEVICE WITH COHERENT TUNNELING TRANSPORTS**

Masaki Mizuguchi[1], Yoshishige Suzuki[1], Taro Nagahama[2], Shinji Yuasa[2], *[1]Osaka University / CREST, Japan, [2]AIST / CREST, Japan*

**CA-06 11:00 MAGNETORESISTANCE IN MAGNETIC TUNNEL JUNCTIONS WITH AMORPHOUS ELECTRODES**

Kentaro Nakajima, Gen Feng, John Miceal David Coey, *Physics Department, Trinity College Dublin, Ireland*

**CA-07 11:15 FABRICATION AND CHARACTERIZATION OF MAGNETIC TUNNEL JUNCTIONS WITH $L1_0$-ORDERED FePt ALLOY ELECTRODES**

Seiji Mitani, Kazuhiko Tsukamoto, Takeshi Seki, Toshiyuki Shima, Koki Takanashi, *IMR Tohoku University, Japan*

**CA-08 11:30 KONDO RESONANCE IN MAGNETIC DOUBLE TUNNEL JUNCTIONS**

Hyun Soo Yang, See-Hun Yang, Christian Kaiser, Stuart Parkin, *Stanford & IBM spintronics research center, United States of America*

**CA-09 11:45 THERMAL STABILITY OF MTJ USING Zr CAPPING LAYER**

S. C. Oh, J. E. Lee, H.-J. Kim, Y. K. Ha, J. S. Bae, K. T. Nam, S. O. Park, H. S. Kim, U-In Chung, J. T. Moon, *Process Development Team, Samsung Electronics Co., Ltd., Republic of Korea*

**CA-10 12:00 FREQUENCY-ASSISTED CURRENT-DISTRIBUTION EFFECT IN MAGNETIC TUNNEL JUNCION**

Y. M. Chang[1], K. S. Li[1], S. Y. Tong[2], M. J. Tung[2], Minn-Tsong Lin[1], Minn-Tsong Lin[2], *[1]Department of Physics, National Taiwan University, Taiwan, [2]Material Research Lab., Industrial Technology Research Institute, Taiwan*

**CA-11 12:15 OXIDATION PROCESS OF METAL FILMS BY USING HIGH CONCENTRATION OZONE IN MAGNETIC TUNNEL JUNCTIONS**

Satoru Yoshimura[1], Yosuke Narisawa[1], Toshiharu Nozawa[1], Masakiyo Tsunoda[1], Migaku Takahashi[2], *[1]Department of Electronic Engineering, Tohoku University, Japan, [2]New Industry Creation Hatchery Center, Tohoku University, Japan*

**Apr. 6** **Room 141/142**

## Session CB
## Magnetic Recording Physics I

**H.J. Richter**
Seagate Technology

**Y. Suzuki**
Tohoku University

**CB-01 9:30 THE EFFECT OF WRITE HEAD STRUCTURES ON WRITTEN TRANSITIONS IN PERPENDICULAR MEDIA**

Simon J Greaves[1], Hiroaki Muraoka[1], Yasushi Kanai[2], *[1]RIEC, Tohoku University, Sendai, Japan, [2]Niigata Institute of Technology, Kashiwazaki, Japan*

**CB-02 9:45 PARTITIONING OF THE PERPENDICULAR WRITE FIELD INTO HEAD AND SUL CONTRIBUTIONS**

Thomas Schrefl[1], Manfred E. Schabes[2], Dieter Suess[3], Otmar Ertl[3], Markus Kirschner[3], Florian Dorfbauer[3], Gino Hrkac[3], Josef Fidler[3], *[1]University of Sheffield, United Kingdom, [2]HGST, United States of America, [3]TU Vienna, Austria*

**CB-03 10:00 DYNAMIC MICROMAGNETIC STUDIES OF ANISOTROPY EFFECTS IN PERPENDICULAR WRITE HEADS**

Manfred E. Schabes[1], Thomas Schrefl[2], Dieter Suess[3], Otmar Ertl[3], *[1]San Jose Research Center, Hitachi GST, United States of America, [2]Dept. of Engineering Materials, University of Sheffield, United Kingdom, [3]Dept. of Solid State Physics, Technical University Vienna, Austria*

**CB-04 10:15 OPTIMIZATION OF PERPENDICULAR RECORDING WITH SHIELDED POLE HEAD**

Yu Hui Tang, Jiang-Gang Zhu, *Department ECE, CMU, United States of America*

**CB-05 10:30 EFFECT OF SIDE SHIELDS ON NEIGHBOR INDUCED TRANSITION SHIFT**

Sissay G. Yoseph, Mohamed U. Khan, Randall H. Victora, *Center for Micromagnetics and Information Technology (MINT), Electrical and Computer Engineering, University of Minnesota, United States of America*

**CB-06 10:45 COMPUTER SIMULATION OF GRANULAR PERPENDICULAR RECORDING MEDIA WITH DISPERSIONS OF GRAIN SIZE AND GRAIN SEPARATION**

Masukazu Igarashi[1], Fumiko Akagi[1], Miki Hara[1], Atsushi Nakamura[1], Yuzuru Hosoe[1], Yutaka Sugita[2], *[1]Storage Technology Research Center, Hitachi, Ltd., Japan, [2]Tohoku Institute of Technology, Japan*

**CB-07 11:00 EXPERIMENTAL STUDY OF OVERWRITE MODULATION IN PERPENDICULAR MAGNETIC RECORDING**

Yuchen Zhou, Jian-Gang Zhu, *Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, United States of America*

**CB-08 11:15 IMPROVED RECIPROCITY CALCULATION METHOD FOR SENSITIVITY PROFILE OF GMR HEADS**

Yoshio Suzuki, Hajime Aoi, Hiroaki Muraoka, Yoshihisa Nakamura, *RIEC, Tohoku University, Japan*

**CB-09 11:30 WRITE PROCESS STUDY UTILIZING NON-LINEAR DISTORTION (NLD) HARMONIC RATIO MEASUREMENTS AND MODELING**

Thomas Y Chang[1], David Seagle[2], *[1]Seagate Technology, United States of America, [2]Hitachi Global Storage Technologies, United States of America*

**CB-10 11:45 FULL-TRACK PROFILE DERIVATIVE METHOD FOR TRACK WIDTH MEASUREMENTS OF MAGNETIC RECORDING HEAD**

Zhong-Heng Lin, Terence Lam, Xiao Dong Che, Xiao Yu Sui, *Hitachi Global Storage Technologies, Inc., United States of America*

**CB-11 12:00 REDUCTION OF WRITE POLE-TIP ERASURE IN PERPENDICULAR MAGNETIC RECORDING BY TRACK MAGNETIZATION STATE AND MEDIA DESIGN**

Albert Chekanov, E. Noel Abarra, Gunn Choe, *MMC Technology, United States of America*

**CB-12 12:15 UNLOCKING OF REMANENT MAGNETIZATION OF POLE HEADS BY "RUMBLE STRIPS"**

Hans Juergen Richter, Elzbieta Haftek, Dean Palmer, *Seagate Technology, United States of America*

**Apr. 6** **Room 234**

## Session CC
## Symposium on Biosensing with Magnetic Beads

**N. Matsushita**
Tokyo Institute of Technology

***CC-01 9:30 MAGNETIC IMMUNOASSAY WITH SQUID AND MAGNETIC MARKER**

Keiji Enpuku, *Research Institute of Superconductor Science and Systems, Kyushu University, Japan*

***CC-02 10:00 SPINTRONIC BIOSENSORS FOR GENE OR MICRO-ORGANISM DETECTION**

P. P. Freitas[1,2], H. Ferreira[1,2], D.Graham[1], N. Feliciano[1], C. Carias[1,2], R. Ferreira[1,2], L. Clarke[3], M. Amaral[3,4], P. Galvin[5], V. Martins[1,6], L. Fonseca[6], J. S. Cabral[6], *[1]INESC Microsystems and Nanotechnologies, Portugal, [2]Physics Department, Instituto Superior Tecnico, Portugal, [3]Chemestry and Biochemestry Department, Faculty of Sciences, University of Lisbon, Portugal, [4]Center for Human Genetics, National Institute of Health, Lisbon, Portugal, [5]Tyndal Institute, Cork, Ireland, [6]Bioengineering Research Group, Chemestry Department, Instituto Superior Tecnico, Lisbon, Portugal*

***CC-03 10:30 REGENERATIVE MEDICINE UTILIZING MAGNETIC BEADS**

H. Honda, Akira Ito, *Department of Biotechnology, School of Engineering, Nagoya University, Japan*

***CC-04 11:00 MEDICAL APPLICATION OF SMALL MAGNETIC PARTICLES AND SQUID MAGNETIC SENSOR**

Saburo Tanaka, Zarina Aspanut, Chika Toriyabe, Yoshimi Hatuskade, Shinji Katsura, *Toyohashi University of Technology, Japan*

***CC-05 11:30 ON-CHIP MAGNETIC PARTICLE TRANSPORT: WHERE PHYSICS, CHEMISTRY AND BIOLOGY MEET**

Roel Wirix-Speetjens, Wim Fyen, Kai Dong Xu, Jo De Boeck, Gustaaf Borghs, *IMEC vzw., Belgium*

***CC-06 12:00 PRACTICAL HALL EFFECT SENSORS FOR BIOMEDICAL INSTRUMENTATION**

Adarsh Sandhu[1], Hiroshi Handa[2], *[1]Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Japan, [2]Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, Japan*

**Apr. 6** **Room 224**

## Session CD
## Nanocrystalline and Other Materials II

**M. Shima**

Rensselaer Polytech. Inst.

***CD-01 9:30 MECHANISM OF INDUCED MAGNETIC ANISOTROPY IN METAL-NONMETAL GRANULAR FILMS AND THEIR ENHANCEMENT BY A HIGH FIELD ANNEALING**

Masato Ohnuma[1], Hideyuki Ohtsuka[1], Hiroyasu Fujimori[2], Kazuhiro Hono[1], *[1]National Institute for Materials Science, Japan, [2]The Research Institute for Electric and Magnetic Materials, Japan*

**CD-02 10:00 MICROSTRUCTURAL STUDY OF NANOCRYSTALLINE SOFT MAGNETIC THIN FILMS OF Fe-C AND Fe-Co-C DEPOSITED BY FACING TARGETS SPUTTERING**

Yoshitaka Kitamoto, Goro Kiyota, *Department of Innovative and Engineered Materials, Tokyo Institute of Technology, Japan*

**CD-03 10:15 HIGH-FREQUENCY RESISTIVITY OF SOFT MAGNETIC GRANULAR FILMS**

Wei Dong Li, Yuqin Sun, Charles R. Sullivan, *Thayer School of Engineering, Dartmouth College, United States of America*

**CD-04 10:30** **NEW FeNbB BASED BULK AMORPHOUS AND NANOCOMPOSITE SOFT MAGNETS FOR APPLICATIONS**

Horia Chiriac, Nicoleta Lupu, *National Institute of Research and Development for Technical Physics, Iasi, Romania*

**CD-05 10:45** **PROPERTIES OF HIGH DENSITY MAGNETIC COMPOSITE (HDMC) FABRICATED FROM IRON POWDER COATED WITH NEW TYPE PHOSPHATE INSULATOR**

Shin Tajima[1], Mikio Kondoh[1], Takeshi Hattori[1], Hidefumi Kishimoto[2], Masaki Sugiyama[2], Tadayoshi Kikko[3], *[1]Toyota Central R&D., Inc., Japan, [2]Toyota Motor Corp., Japan, [3]Finesinter, Japan*

**CD-06 11:00** **LOW LOSS, HIGH FLUX DENSITY POWDER CORES MADE OF FERRITE-PLATED Fe-Si POWDERS**

Yasunobu Yamada[1], Teruhiko Fujiwara[1], Shigeyoshi Yoshida[1], Nobuhiro Matsushita[2], Masanori Abe[2], *[1]NEC Tokin Corporation, Japan, [2]Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**CD-07 11:15** **EFFECT OF ATOMIC ORDER ON THE ELECTRICAL AND MAGNETIC PROPERTIES OF $Fe_{100-x}Si_x$(6 < x < 14) ALLOYS**

Daniel Ruiz[1], Tanya Ros-Yanez[1], Leticia Ortega[1], Laura Garcia[1], Lode Vandenbossche[2], Luc Dupre[2], Bernard Legendre[3], Robert E. Vandenberghe[2], Yvan Houbaert[1], *[1]Dept. of Metallurgy and Materials Science, Ghent University, Belgium, [2]Dept. of Electrical Energy, Systems and Automation, Ghent University, Belgium, [3]Lab. Chim. Phys. Mineral & Bioinorgan, Paris-Sud University, France*

**CD-08 11:30** **CURRENT DENSITY EFFECT ON MAGNETIC PROPERTIES OF NANOCRYSTALLINE ELECTROPLATED $Ni_{80}Fe_{20}$/Cu COMPOSITE WIRES**

Hang Li Seet, Xiao Ping Li, Zhen Jie Zhao, Lik Chee Wong, Hui Min Zheng, *Department of Mechanical Engineering, National University of Singapore, Singapore*

**CD-09 11:45** **SWITCHING FILED DISTRIBUTION STUDY IN AMORPHOUS MICROWIRES.**

Rastislav Varga[1], Arcady Zhukov[2], Juan M. Blanco[2], Julian Gonzalez[3], Valentina Zhukova[4], Pavol Vojtanik[1], *[1]Inst. Phys., Fac. Sci., Park Angelinum 9, Slovakia, [2]Dpto. Fisica Aplicada I, EUPDS, UPV/EHU, Plaza Europa 1, Spain, [3]Dpto. Fisica de Materiales, Facultad de Quimica, UPV/EHU, San Sebastian, Spain, [4]"TAMag Iberica" S.L., Parque Tecnologico de Miramon, San Sebastian, Spain*

**CD-10 12:00** **A NUMERICALLY OPTIMIZED VECTOR HYSTERESIS MODEL USING PLAY OPERATOR**

Julius Krah, *Dept. of Electrical Engineering, Royal Institute of Technology, Stockholm, Sweden*

**CD-11 MODELING MICROSTRUCTURAL EFFECTS ON**
**12:15 BARKHAUSEN EFFECT SIGNALS IN SURFACE-MODIFIED MAGNETIC MATERIALS**

Emily Kinser, Chester Lo, Tony Barsic, David Jiles, *Center for Nondestructive Evaluation, Iowa State University, United States of America*

**Apr. 6** **Room 131/132**

## Session CE
## Integrated Passives and Devices I

**T. Sato**
Shinshu University

**Z. Celinski**
University of Colorado

***CE-01 ON-WAFER BAND-STOP AND BAND-PASS**
**9:30 MICROWAVE FILTERS BASED ON FERROMAGNETIC RESONANCE**

Bijoy K. Kuanr, I. R. Harward, R. E. Camley, Z. Celinski, *Center of Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, United States of America*

**CE-02 ROLE OF SHEET RESISTANCE AND MAGNETIC**
**10:00 LOSS ON A NEAR FIELD NOISE SUPPRESSION EFFECT OF MAGNETIC THIN FILMS ATTACHED ON A MICROWAVE TRANSMISSION LINE**

Shigehiro Ohnuma[1], Tadayoshi Iwasa[1], Hiroshi Ono[2], Masahiro Yamaguchi[3], Tsuyoshi Masumoto[1], *[1]The Research Institute for Electric and Magnetic Materials, Japan, [2]NEC Tokin Co., Japan, [3]Dept. of Electronics, Tohoku University, Japan*

**CE-03 STRESS-DEPENDENT MAGNETOIMPEDANCE IN**
**10:15 Co-BASED AMORPHOUS WIRES AND APPLICATION TO TUNABLE MICROWAVE COMPOSITES**

Serghei I. Sandacci[1], Dmitriy P. Makhnovskiy[2], Larissa V. Panina[2], Vladimir S. Larin[3], *[1]Sensor Technology Ltd., United Kingdom, [2]School of Computing, Communications and Electronics, University of Plymouth, United Kingdom, [3]MFTI Ltd., Republic of Moldova*

***CE-04 HIGH MAGNETIZATION FERROMAGNETIC SPIRAL**
**10:30 INDUCTORS USING SHAPE ANISOTROPY**

Sandrine Couderc[1], Bernard Viala[2], Anne-Sophie Royet[2], Pascal Ancey[1], Guillaume Bouche[1], *[1]STMicroelectronics, Crolles, France, [2]CEA-DRT-Leti, Grenoble, France*

**CE-05 11:00 CLOSED MAGNETIC CIRCUIT STRUCTURE FOR RF INTEGRATED SPIRAL INDUCTOR**

Seok Bae[1], Ki Hyeon Kim[1], Masahiro Yamaguchi[1], Kenji Tan[2], Takayuki Kusumi[2], Kiyoshi Yamakawa[2], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]Akita Research Institute of Advanced Technology, Japan*

***CE-06 11:15 LEFT HANDED TRANSMISSION CHARACTERISTICS OF RECTANGULAR WAVEGUIDES PERIODICALLY LOADED WITH FERRITE**

Tetsuya Ueda[1], Makoto Tsutsumi[2], *[1]Dept. of Electronics and Information Science, Kyoto Institute of Technology, Japan, [2]Dept. of Space Communication Engineering, Fukui University of Technology, Japan*

**CE-07 11:45 SELF GENERATION OF SOLITARY CHAOTIC SPIN WAVE PULSES**

Ming Zhong Wu[1], Boris A. Kalinikos[2], Carl E. Patton[1], *[1]Department of Physics, Colorado State University, United States of America, [2]St. Petersburg Electrotechnical University, Russian Federation*

**CE-08 12:00 FABRICATION OF CIRCULATOR WITH COPLANER WAVE GUIDE STRUCTURE**

Kazunori Oshiro[1], Hideto Mikami[2], Shigeo Fujii[2], Terumitsu Tanaka[1], Hirotaka Fujimori[1], Mitsuru Matsuura[1], Setsuo Yamamoto[1], *[1]Yamaguchi University, Japan, [2]Hitachi Metals Ltd., Japan*

**CE-09 12:15 POSSIBIRITY OF DRASTIC MINIATURIZATION OF MICROSTRIP Y-ISOLATOR**

Kazunori Oshiro, Terumitsu Tanaka, Hirotaka Fujimori, Mitsuru Matsuura, Setsuo Yamamoto, *Faculty of Engineering, Yamaguchi University, Japan*

**Apr. 6** **Event Hall**

**8:30-12:00** **Session CP**

## Inductive Heads & Materials

**I. Tagawa**

Hitachi Ltd.

**CP-01 3DAP ANALYSIS OF FeCo ELECTRODEPOSITED SOFT MAGNETIC FILMS WITH HIGH Bs**

Y. K. Takahashi[1], K. Hono[1], Y. Miyake[2], D. Kaneko[3], H. Kanai[2], *[1]National Institute for Material Science, Japan, [2]Fujitsu Ltd., Japan, [3]Fujitsu Lab.Ltd., Japan*

**CP-02 MECHANISM OF THE SOFTNESS OF HIGH Bs Fe-Co-Al-O FILMS WITH A THIN UNDERLAYER**

Kazuhiko Shintaku, Saori Watanabe, *Akita Research Institute of Advanced Technology, Japan*

**CP-03 HIGH MOMENT SOFT FeCoN/NiFe LAMINATED THIN FILMS**

Hai Jiang, Kyusik Sin, Ying Jian Chen, *Western Digital Corporation, United States of America*

**CP-04 SOFT ANISOTROPIC HIGH-MOMENT $Fe_{65}Co_{35}$ /Co THIN FILMS PREPARED BY FACING TARGETS SPUTTERING**

Yu Fu[1], Takuji Miyao[2], Shinya Chino[2], Xiao Xi Liu[2], Mitsunori Matsumoto[2], Akimitsu Morisako[2], *[1]Research Institute of Magnetic Materials, Lanzhou University, China, [2]Department of Information Engineering, Shinshu University, Japan,*

**CP-05 MATERIAL PROPERTY AND DOMAIN STRUCTURE INFLUENCE ON POLE ERASURE OCCURRENCE IN PERPENDICULAR RECORDING HEADS**

Kei Hirata, Tetsuya Roppongi, Mitsuo Ohtsuki, Atsushi Yamaguchi, Kiyoshi Noguchi, *Head Business Group, TDK Corporation, Japan*

**CP-06 3-D FEM ANALYSIS OF SPT HEAD DIMENSION ON RECORDING CHARACTERISTICS**

Masaya Ohtake, Akifumi Sadatoshi, Norio Takahashi, *Dept. Electrical and Electronic Engineering, Okayama University, Japan*

**CP-07 NEWLY DEVELOPED WRAPAROUND SHIELDED POLE HEADS FOR PERPENDICULAR RECORDING**

Tomohiro Okada, Isao Nunokawa, Masafumi Mochizuki, Hisashi Kimura, Kimitoshi Etoh, Masahiko Hatatani, Moriaki Fuyama, Kazuhiro Nakamoto, *Storage Technology Research Center, Hitachi, Ltd., Japan*

**CP-08 DISTRIBUTION OF SLANTED WRITE FIELD FOR PERPENDICULAR RECORDING HEADS WITH SHIELDED POLE**

Z. J. Liu[1], J. T. Li[1], H. T. Wang[1], J. P. Wang[2], *[1]Data Storage Institute, National University of Singapore, Singapore, [2]MINT, ECE Department, University of Minnesta, United States of America*

**8:30-12:00** **Session CQ**

## Perpendicular Recording Media I

**G. Bertero**

Komag Inc.

**CQ-01 INTEGRATION OF HIGH-PERFORMANCE PMR COMPONENTS**

Davide Guarisco, Bill E. Higgins, *Maxtor Corporation, United States of America*

**CQ-02 EFFECT OF NiCr AND NiFeCr SEEDLAYER ON MAGNETIC PROPERTIES AND CRYSTALLOGRAPHY OF CoCrPt-$SiO_2$ PERPENDICULAR RECORDING MEDIA**

Masahiro Shibamoto, Kazuto Yamanaka, David Djayaprawira, Naoki Watanabe, *Electron Device Equipment Division, ANELVA Corp., Japan*

**CQ-03 TEM STUDY OF GRAIN BOUNDARY STRUCTURE IN CoCrPt-$SiO_2$/Ru FOR PERPENDICULAR MAGNETIC RECORDING MEDIA**

Ryoko Araki, Yoshio Takahashi, *Storage Technology Research Center, Hitachi, Ltd.,, Japan*

**CQ-04 ANISOTROPY ENHANCED DUAL MAGNETIC LAYER DESIGN FOR HIGH-DENISTY PERPENDICULAR RECORDING**

B. Ramamurthy Acharya, Min Zheng, Gunn Choe, Ming Jun Yu, Paramjit Gill, E. Noel Abarra, *MMC Technology, United States of America*

**CQ-05 A NEW Co-Pt-$TiO_2$ PERPENDICULAR MAGNETIC RECORDING MEDIUM**

Jun Ariake, Takashi Chiba, Noriko Okada, Naoki Honda, *Akita Research Institute of Advanced Technology, Japan*

**CQ-06 PRELIMINARY STUDY ON (CoPtCr/NiFe)-$SiO_2$ HARD/SOFT-STACKED PERPENDICULAR RECORDING MEDIA**

Yuki Inaba[1], Takehito Shimatsu[1], Osamu Kitakami[2], Hideo Sato[1], Tadaaki Oikawa[1], Hiroaki Muraoka[1], Hajime Aoi[1], Yoshihisa Nakamura[1], *[1]Research Institute of Electrical Communication, Tohoku University, Japan, [2]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan*

**CQ-07 EFFECT OF UNDERLAYER STRUCTURE ON THE PROPERTIES OF NdFeB THIN FILMS**

T.Okumoto, K.Yamasawa, X.Liu, A.Morisako, M.Matsumoto, *Department of Information Engineering, Shinshu University, Japan*

**CQ-08 $SmCo_5$ THIN FILMS WITH HIGH MAGNETIC ANISOTROPY FOR PERPENDICULAR MAGNETIC RECORDING**

Junichi Sayama, Kazuki Mizutani, Yuki Yamashita, Toru Asahi, Tetsuya Osaka, *Waseda University, Japan*

**CQ-09 SUPERPOSITION OF MAGNETO-ELASTIC AND MAGNETO-CRYSTALLINE ANISOTROPY IN TILTED MAGNETIC RECORDING**

Wei Peng, Roy W. Chantrell, Yiao-Tee Hsia, Timothy J Klemmer, *Seagate Technology, United States of America*

**CQ-10 ACTIVATION VOLUMES IN CoPtCr-$SiO_2$ PERPENDICULAR RECORDING MEDIA**

Yuki Inaba[1], T. Shimatsu[1], H. Muraoka[1], James D. Dutson[2], Kevin O'Grady[2], *[1]Reseasch Institute of Electrical Comunication, Tohoku University, Sendai, Japan, [2]Dept. of Physics, University of York, York, United Kingdom*

**CQ-11 THERMAL DECAY IN PERPENDICULAR MEDIA**

Andreas Moser, Byron Lengsfield, Yoshihiro Ikeda, Bruce Wilson, *Hitachi Global Storage Technologies, San Jose Research Center, United States of America*

**CQ-12 DEMAGNETIZATION EFFECTS IN COERCIVITY MEASUREMENTS: A GENERALIZED SHARROCK MODEL FOR PERPENDICULAR MEDIA**

Byron H. Lengsfield, Manfred E. Schabes, *Hitachi Global Storage Technologies, United States of America*

**CQ-13 BULK AC ERASE TECHNIQUE FOR PERPENDICULAR RECORDING MEDIA: EFFECT OF EXCHANGE COUPLING**

E. Noel Abarra, Paramjit Gill, B. Ramamurthy Acharya, Jia Ning Zhou, Min Zheng, Gunn Choe, *MMC Technology, United States of America*

**CQ-14 FLUCTUATION FIELDS IN PERPENDICULAR MEDIA**

Simon J. Greaves, Hiroaki Muraoka, *RIEC, Tohoku University, Sendai, Japan*

**8:30-12:00** **Session CR**

## Spin Injection & Transport: Theory to Devices

**M-H. Jung**

Korea basic science institute

**CR-01 FULL TIGHT-BINDING CALCULATION OF TMR FOR Fe/MgO/Fe JUNCTION WITH RANDOMNESS**

Hiroyoshi Itoh, Jun-ichiro Inoue, *Dept. of Applied Physics, Nagoya University, Japan*

**CR-02 EXTERNAL MAGNETIC FIELD INFLUENCE CORRECTIONS IN RKKY EXCHANGE COUPLING MODEL**

Elena Gomonay[1], Yevgen Pogoryelov[2], *[1]Institute for Physics and Technology, National Ukrainian Technical University, Ukraine, [2]Institute for Magnetism, National Academy of Sciences of Ukraine, Ukraine*

**CR-03 A TRIAL FOR FABRICATING A SPIN-FILTER OPERATING AT ROOM TEMPERATURE USING A FERROMAGNETIC INSULATOR**

Ryota Goto[1], Nobuki Tezuka[2], Satoshi Sugimoto[1], Koichiro Inomata[2], *[1]Graduate School of Engineering, Tohoku University, Japan, [2]Graduate School of Engineering, Tohoku University and CREST-JST, Japan*

**CR-04 VERTICAL SPIN ELECTRONIC DEVICE WITH LARGE ROOM TEMPERATURE MAGNETORESISTANCE**

Ehsan Ahmad, Alex Valavanis, Yong Bing Xu, *Spintronics Laboratory, Department of Electronics, University of York, United Kingdom*

**CR-05 A NOVEL TYPE OF SPIN INJECTION BARRIER IN A GaAs BASED TWO-DIMENSIONAL ELECTRON GAS SYSTEM**

H. C. Koo, Hyun Jung Yi, J. D. Song, J. Y. Chang, Suk Hee Han, *Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea*

**CR-06 GENERALIZED DIFFUSIVE SPIN TRANSPORT THEORY IN MAGNETIC MULTILAYER STRUCTURES**

Mansoor B. A. Jalil, *Electrical and Computer Engineering Department, National University of Singapore, Singapore*

**CR-07 DOMAIN WALL MAGNETORESISTANCE IN A QUANTUM WIRE**

Arash Phirouznia, Mohammad Mehdi Tehranchi, Majid Ghanaatshoar, *Laser Research Institute and Dept. of Physics, Shahid Beheshti University, Iran*

**CR-08 SPIN ACCUMULATION AND DETECTION IN AN InAs BASED TWO-DIMENSIONAL ELECTRON GAS WITH NOVEL MEASUREMENT GEOMETRY**

Hyun Jung Yi[1], H. C. Koo[1], W. Y. Kim[1], Joon Yeon Chang[1], Suk Hee Han[1], Y. H. Cho[2], M. H. Jung[2], *[1]Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea, [2]National Fusion R&D center, Korea Basic Science Institute, Republic of Korea*

**CR-09 SILICON BASED SPIN VALVE DEVICE**

Won Young Kim, Joon Yeon Chang, Hyun Jung, Hyun Cheol Koo, Suk Hee Han, Woo Young Lee, *Dept. of Materials Science & Engineering, Yonsei University, Republic of Korea*

**CR-10 GEOMETRICAL EFFECT ON SPIN ACCUMULATION IN MAGNETIC NANO-STRUCTURES**

Masahiko Ichimura[1,2], Saburo Takahashi[1], Sadamichi Maekawa[1], *[1]Institute for Materials Research, Tohoku University, Japan, [2]Advanced Research Laboratory, Hitachi, Ltd., Japan*

**CR-11 INFLUENCE OF Au CAPPING LAYER ON SPIN ACCUMULATION IN LATERAL SPIN-VALVE STRUCTURE**

Takashi Kimura[1], Jaroslav[1], Yoshichika Otani[2], *[1]Riken FRS, Japan, [2]ISSP Univ of Tokyo, Japan*

**CR-12 CURRENT-INDUCED DOMAIN NUCLEATION IN FERROMAGNET**

Junya Shibata[1], Gen Tatara[2], Hiroshi Kohno[3], Yoshichika Otani[4], *[1]RIKEN FRS, Japan, [2]Graduate School of Science, Osaka University, Japan, [3]Graduate School of Engineering Science, Osaka University, Japan, [4]Institute for Solid State Physics, University of Tokyo, Japan*

**CR-13 THICKNESS DEPENDENCE OF GIANT MAGNETORESISTANCE IN SINGLE, SYNTHETIC AND DUAL SPIN VALVES: INFLUENCE OF INTERFACE AND BULK SCATTERING**

Li Wang[1], William Joseph McMahon[1], Guchang Han[1], Bo Liu[1], Yi Hong Wu[2], *[1]Data Storage Institute, DSI Building, 5 Engineering Drive 1, Singapore, [2]Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

**CR-14 MAGNETITE SCHOTTKY BARRIERS ON GaAs SUBSTRATES**

Steven M. Watts, Catherine Boothman, Sebastiaan van Dijken, J. M. D. Coey, *SFI Trinity Nanoscience Laboratory, Physics Department, Trinity College, Dublin, Ireland*

**CR-15 LARGE SPIN SUSCEPTIBILITY OF HgCdTe TWO DIMENSIONAL ELECTRON GAS IN THE EXTREME QUANTUM LIMIT REGIME**

Jinki Hong[1], Jinseo Lee[1], Sung Jung Joo[1], Kungwon Rhie[1], B. C. Lee[2], Se-Young An[3], Jinsang Kim[3], Kyung-Ho Shin[3], *[1]Department of Physics, Korea University, Republic of Korea, [2]Department of Physics, Inha University, Republic of Korea, [3]Nano Devices Research center, KIST, Republic of Korea*

**CR-16 CALCULATIONS OF IMPURITY DOPING EFFECTS IN $CrO_2$**

Katsuhiko Suzuki[1], Hiroyuki Abe[2], *[1]Dept. Integrated Arts and Sciences, Miyagi National College of Technology, Japan, [2]Dept. Applied Physics, Tohoku Univ., Japan*

**CR-17 RECOILED PARTICLE IIRRADIATION EFFECTS TO RE-TM FILMS AROUND COMPENSATION POINT OBSERVED BY FERROMAGNETIC HALL EFFECT**

Mitsunobu Okuda, Sarbanoo Das, Tomoki Kobayashi, Shigeki Nakagawa, *Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**CR-18 GATE EFFECT ON HALL VOLTAGE IN A InSb/FM DEVICE**

Won Young Kim, Joon Yeon Chang, Suk Hee, Woo Young Lee, *Dept. of Materials Science & Engineering, Yonsei University, Republic of Korea*

**Apr. 6** **Event Hall**

**8:30-12:00** **Session CS**

## Hard Magnet Applications I

**F. Yamashita**

Matsushita Electric Industrial Co., Ltd.

**K. Ohmori**

Sumitomo Metal Mining Co.

**CS-01 DEVELOPMENT OF WOOFER MICROSPEAKERS USED CELLULAR PHONES**

Ki-Chang Bang[1], Yong-Chang Yang[1], Gun-Yong Hwang[2], Sang-Moon Hwang[1], *[1]School of Mechanical Engineering, Pusan National University, Republic of Korea, [2]School of Information and Communication Engineering, Youngsan University, Republic of Korea*

**CS-02 APPLICATION OF THE REPUSIVE-TYPE MAGNETIC BEARING FOR MANUFATURING MICRO-MASS MEASURMENT BALANCE EQUIPMENT**

Alaa A. Hussien[1], Sotoshi Yamada[1], Masayoshi Iwahara[1], Tomotada Okada[1], Takahisa Ohji[2], *[1]Institute of Nature and Environmental Technology, Kanazawa University, Japan, [2]Dept. of Electrical and Electronic Engineering, Toyama University, Japan*

**CS-03 ELECTROMAGNETICALLY ACTUATED ACTIVE BALANCER WITH FLUX GUIDES**

Branislav Hredzak, Guo Xiao Guo, *A*Star, Data Storage Institute, Singapore*

**CS-04 CHARACTERISTICS OF MOVING MAGNET ROTATOR OVER CONDUCTING PLATE**

Nobuo Fujii, Yuichiro Ito, Takehiro Yoshihara, *Dept. of Electrical and Electronic Systems Engineering, Kyushu University, Japan*

**CS-05 DYNAMIC CHARACTERISTIC ANALYSIS AND EXPERIMENTS OF MOVING-MAGNET LINEAR ACTUATOR WITH CYLINDRICAL HALBACH ARRAY**

Seok Myeong Jang[1], Jang Young Choi[1], Han Wook Cho[1], Sung Ho Lee[2], *[1]Dept. of Electrical Engineering, Chungnam National University, Republic of Korea, [2]LG Digital Appliance Lab., Republic of Korea*

**CS-06 THE DESIGN FOR HIGH POWER DENSITY IN THE SLOTLESS TYPE PERMANENT MAGNET LINEAR SYNCHRONOUS MOTOR**

Dong-Yeup Lee[1], Gyu-Tak[1], Jung-Keying Choi[2], *[1]Dep. of Electrical Engineering, Changwon National University, Republic of Korea, [2]Dep. of Electronics Engineering, Changwon National University, Republic of Korea*

**CS-07 EXPERIMENT AND CHARACTERISTIC ANANYSIS OF DISK TYPE PMLSM WITH HALBACH ARRAY**

Seok-Myeong Jang, Jung-Chul Seo, Jeong-Ki Kwon, Jang-young Choi, Han Wook Cho, *Dept. of Electrical Engineering, Chungnam Nat'l Univ., Republic of Korea*

**CS-08 STIFFNESS ANALYSIS OF A MAGNETICALLY SUSPENDED BEARINGLESS MOTOR WITH PERMANENT MAGNET PASSIVE POSITIONING**

Kazuyoshi Asami[1], Akira Chiba[1], Takeshi Hoshino[2], Atsushi Nakajima[2], *[1]Tokyo University of Science, Japan, [2]Japan Aerospace Exploration Agency, Japan*

**CS-09 EFFECTS OF SHIFTED STATOR POLE AND FLAT ROTOR POLES ON THE STATIC CHARACTERISITCS OF THE DOUBLY SALIENT PERMANENT MAGNET MOTOR**

Angara. R. C. Sekhar Babu, K. R. Rajagopal, *Electrical Engineering Department, Indian Institute of Technology Delhi, New Delhi, India*

**CS-10 DEVELOPMENT OF BLDC MOTOR WITH 3 TIMES OUTPUT**

Yoshinobu Honkura, Daisuke Nagaya, Hiroshi Matsuoka, Hironari Mitarai, Norihiko Hamada, Kenji Noguchi, *Electronic & Magnetics Product Div., Aichi Steel Corporation, Japan*

**CS-11 A COMPARATIVE STUDY OF HIGH-SPEED PERMANENT MAGNET SYNCHRONOUS MOTOR FOR AIR COMPRESSOR**

Ju Lee, *Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**CS-12 DESIGN OF PERMANENT MAGNETS TO GUARANTEE FREQUENCY-CHANGING STARTUP FOR PM SYNCHRONOUS MACHINES**

Yuan Gao, K. T. Chau, *Department of Electrical & Electronic Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, China*

**CS-13 ANALYSIS ON THE EFFECT OF POLE ARC AND SALIENT POLE RATIO TO IMPROVE TORQUE CHARACTERISTICS OF IPMSM**

Kab-Jae Lee[1], Ki-Chan Kim[1], Ju Lee[2], *[1]Electro-Mechanical Research Institute , Hyundai Heavy Industry Co., Republic of Korea, [2]Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**CS-14 PERFORMANCE AND APPLICATIONS OF A SMALL PERMANENT MAGNET GENERATOR**

Chang-Chou Hwang[1], Ping-Huey Tang[2], *[1]Dept. of Electrical Engineering, Feng Chia University, Taiwan, [2]Dept. of Computer Applications Engineering, Far East College, Taiwan*

**CS-15 DYNAMIC ANALYSIS OF SPOKE TYPE PERMANENT MAGNET GENERATOR WITH LARGE OVERHANG**

Ki-Chan Kim[1], Kab-Jae Lee[2], Ju Lee[1], *[1]Dept. of Electrical Engineering, Hanyang University, Haengdang, Seongdong, Seoul, Republic of Korea, [2]Hyundai Heavy Industries Co., LTD. Mabook, Kuseong, Yongin, Republic of Korea*

**8:30-12:00** **Session CT**

## Clusters and Particles II

**E. Kita**

Institute of Applied Physics, University of Tsukuba

**CT-01 SUPERPARAMAGNETIC FLUCTUATION IN MAGNETIC NANOPARTICLES: AN APPROACH TO EXTREMELY SLOW RELAXATION**

Hiroaki Mamiya, Masato Ohnuma, Isao Nakatani, Takao Furubayashi, *National Institute for Materials Science, Japan*

**CT-02 PREPARATION OF Ni NANOPARTICLES MONO-LAYER ON POLYIMIDE SUBSTRATE**

Chong Seung Yoon, Dong Hyun Im, Ik Su Chun, Ki Sik Ban, Sang Uk Lim, Kyung Sook Jeon, Ji Weon Kim, Chang Kyung Kim, Young Ho Kim, *Dept of Materials Science and Engineering, Hanyang University, Seoul, Republic of Korea*

**CT-03 PREPARATION AND PROPERTIES OF NOVEL IRON NANOPARITLCES**

Hui Ping Shao[1], Hyo Sook Lee[2], Yu Qiang Huang[1], In Yong Ko[3], Chong Oh Kim[1], *[1]Department of materials engineering, ChungNam National University, Republic of Korea, [2]Korea Institute of Geoscience & Mineral Resources, Republic of Korea, [3]ChunBuk National Unversity, Republic of Korea*

**CT-04 CONTROLLED MONODISPERSE Fe NANOPARTICLES SYNTHESIZED BY CHEMICAL METHOD**

Wen Li Pei[1], Saku Kakibe[2], Ippei Ohta[2], Migaku Takahashi[2], *[1]College of Materials and Metallurgy, Northeastern University, China, [2]Department of Electronics Graduate School of Engineering, Tohoku University, Japan*

**CT-05 MICROSTRUCTURE AND MAGNETIC PROPERTIES OF COBALT NANOCRYSTALS**

You Hui Gao[1], Zentaro Akase[1], Daisuke Shindo[1], Yu Ping Bao[2], Kannan Krishnan[2], *[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan, [2]Department of Materails Science and Engineering, University of Washington, United States of America*

**CT-06 SYNTHESIS AND MAGNETIC PROPERTIES OF CoPt(Ag) NANOPARTICLES ASSEMBLY**

Xiang Cheng Sun[1], Yunhe Huang[2], Zhi Yong Jia[3], J. W. Harrell[3], D.E. Nikles[3], *[1]Department of Nuclear Engineering, University of Michigan, United States of America, [2]Department of Physics, University of Delaware, United States of America, [3]Center for Materials for Information Technology, the University of Alabama, United States of America*

**CT-07 SIZE CONTROL AND MAGNETIC PROPERTIES OF FePt NANOPARTICLES**

Masafumi Nakaya, Toshiharu Teranishi, *Grad. School of Pure and Appl. Sci., Univ. of Tsukuba, Japan*

**CT-08 USE OF THE PHOTOACOUSTIC SPECTROSCOPY FOR SURFACE CHARACTERIZATION OF NANOMETER-SIZED COBALT-FERRITE PARTICLES**

Paulo C. Morais[1], Luciene B. Silveira[1], Judes G. Santos[1], Aderbal C. Oliveira[1], Alvaro L. Tronconi[1], Regiane L. Santos[2], Emilia C.D. Lima[2], Juliana M. Marchetti[3], Antonio C. Tedesco[4], *[1]Instituto de Fisica, Universidade de Brasilia, Brazil, [2]Instituto de Quimica, Universidade Federal de Goias, Brazil, [3]Departamento de Farmacia, Universidade de Sao Paulo, Brazil, [4]Faculdade de Filosofia Ciencias e Letras, Universidade de Sao Paulo, Brazil*

**CT-09 SYNTHESIS OF FePtAu NANOPARTICLES IN HIGH-BOILING-POINT SOLVENTS**

Zhi Yong Jia, Shishou Kang, David E. Nikeles, J. W. Harrell, *MINT Center, The University of Alabama, United States of America*

**Apr. 6** **Event Hall**

**8:30-12:00** **Session CU**

## Magnetic Imaging II

**H. Koo**

Korea Institute of Science and Technology

**CU-01 A NOVEL INSTRUMENT FOR REAL TIME DYNAMIC DOMAIN OBSERVATION IN BULK AND MICROMAGNETIC MATERIALS**

Anthony Moses, Paul Williams, Oleksandr Hoshtanar, *Wolfson Centre for Magentics Technology, School of Engineering, Cardiff University, United Kingdom*

**CU-02 MAGNETIZATION CONFIGURATIONS IN MICROSTRUCTURED PERMALLOY NETWORKS**

Jong-Ching[1], Ida Chang[1], Zung-Hang Wei[2], Mei-Feng Lai[2], Ching-Ray Chang[2], *[1]Taiwan SPIN Research Center and Department of Physics, Nationa Changhua University of Education, Taiwan, [2]Department of Physics, National Taiwan University, Taiwan*

**CU-03 THE IRREVERSIBLE MAGNETIZATION PROCESS IN MICROSTRUCTURED PERMALLOY ELLIPSES**

Yi-Chen Chang, Chia-Chi Chang, Che-Chinmr Chen, Jong-Ching Wu, *Taiwan SPIN Research Centerand and Department of Physics, National Changhua University of Education, Taiwan*

**CU-04 HIGH-RESOLUTION MAGNETIC IMAGE BY HIGH-Tc SQUID PROBE MICROSCOPE**

Tadayuki Hayashi[1], Hideo Itozaki[2], *[1]Sendai National College of Technology and National Institute for Materials Science, Japan, [2]Osaka University and National Institute for Materials Science, Japan*

**CU-05 ANTI-PHASE DOMAINS AND CHARGE ORDERING ON EPITAXIAL MAGNETITE FILMS STUDIED BY SPIN-POLARIZED SCANNING TUNNELING MICROSCOPY**

Agus Subagyo, Kazuhisa Sueoka, *Graduate School of Information Science and Technology, Hokkaido University, Japan*

**CU-06 APPLICATIONS OF HIGH-RESOLUTION MFM SYSTEM WITH LOW MOMENT PROBE AND Q-CONTROL IN VACUUM**

Takehiro Yamaoka[1], Kazutoshi Watanabe[1], Yoshiharu Shirakawabe[1], Kazuo Chinone[1], Eiji Saitoh[2], Masaaki Tanaka[2], Hideki Miyajima[2], *[1]SII NanoTechnology Inc., Japan, [2]Dept. of Phys., Keio University, Japan*

**CU-07 MAGNETIZATION REVERSAL AND STRAY FIELD OF PERIODICALY MAGNETIC DOTS DETECTED BY BOTH MFM AND GMR READ HEAD**

Kebin Li[1], Yuankai Zheng[1], Ping Luo[1], Zhi Yong Liu[1], Lihua An[1], Zai Bing Guo[1], Guchang Han[1], Yi Hong Wu[2], *[1]Data Storage Institute, Singapore, Singapore, [2]Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

**CU-08 HIGH SENSITIVITY SCANNING HALL PROBE MICROSCOPY AND MAGNETIC IMAGING OF PERMANENT MAGNET**

Masayoshi Shimizu[1], Hiromasa Saitoh[1], Eiji Saitoh[1], Hideki Miyajima[1], Hiroshi Masuda[2], Makoto Satoh[2], *[1]Dept. of Physics, Keio University, Japan, [2]Toei Industry, Co., Ltd., Japan*

**CU-09 LOW NOISE MFM WITH HIGH RESOLUTION BY TIP COOLING**

Hitoshi Saito[1], Ryosuke Sunahara[1], Young Woo Rheem[2], Shunji Ishio[1], *[1]Dept. of Materials Science and Engineering, Akita University, Japan, [2]Venture Business Laboratory, Japan*

**CU-10 JUSTIFICATION OF AN ALTERNATIVE SYSTEM FOR ONE- AND TWO-DIMENSIONAL MAGNETIC MEASUREMENTS**

Julius Krah, *Dept. of Electrical Engineering, Royal Institute of Technology, Stockholm, Sweden*

**CU-11 MEASUREMENT AND VISUALIZATION OF THREE-DIMENSIONAL RADIAL AND VECTORED MAGNETIC FIELD DISTRIBUTION BY USE OF THE MAGNETIC CT METHOD**

Yoshihiro Miyamoto, Takashi Nishimura, Masayoshi Iwahara, Sotoshi Yamada, *Graduate School of Natural Science and Technology, Kanazawa University, Japan*

**CU-12 APPLICATION OF SPIN VALVE SENSOR FOR SCANNING MAGNETORESISTANCE MICROSCOPE**

Taiichi Takezaki, Daiki Yagisawa, Kazuhisa Sueoka, *Graduate School of Information Science and Technology, Hokkaido University, Japan*

**Apr. 6** **Event Hall**

**8:30-12:00** **Session CV**

**Motors II**

**H.J. Guo**

Tohoku Gakuin University

**CV-01 VERIFICATION OF THE FROZEN PERMEABILITIES METHOD OF CALCULATING THE INTERIOR PERMANENT MAGNET MOTOR**

Jill A. Walker, David G. Dorrell, *SPEED Laboratory, Dept. of Electronics & Electrical Engineering, University of Glasgow, United Kingdom*

**CV-02 ROTOR OPTIMIZATION OF INTERIOR PERMANENT MAGNET SYNCHRONOUS MOTOR CONSIDERING MECHANICAL STRESS**

Kab-Jae Lee[1], Ki-Chan Kim[1], Ju Lee[2], *[1]Electro-Mechanical Research Institute , Hyundai Heavy Industry Co., Republic of Korea, [2]Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**CV-03 AN INVESTIGATION ON INFLUENCE OF MAGNET ARC SHAPING UPON BACK ELECTROMOTIVE FORCE WAVEFORMS FOR DESIGN OF PERMANENT-MAGNET BRUSHLESS MOTORS**

Min-Fu Hsieh, Yu-Sheng, *Dept. of Systems and Naval Mechatronic Engineering, National Cheng Kung University, Taiwan*

**CV-04 CALCULATION OF DQ-AXIS INDUCTANCES OF PM BRUSHLESS AC MACHINES ACCOUNTING FOR SKEW**

Yang Shen Chen, Zi Qiang Zhu, David Howe, *Dept. of Electronic and Electrical Engineering, University of Sheffield, United Kingdom*

**CV-05 DESIGN OF PERMANENT MAGNETS TO CHAOTIC PM SYNCHRONOUS MOTORS FOR INDUSTRIAL MIXERS**

Shuang Ye, K. T. Chau, *Dept. of Electrical and Electronic Engineering, The University of Hong Kong, China*

**CV-06 EFFECT OF MATERIAL PROPERTIES ON MOTOR IRON LOSS**

Horoaki Toda, Kunihiro Senda, Masayoshi Ishida, *Steel Research Laboratory, JFE Steel Corporation, Japan*

**CV-07 COMPARISON AND ANALYSIS OF BLDC MOTOR WITH RADIAL AND POLAR ANISOTROPIC PLASTIC MAGNET**

Seok Myeong Jang[1], Jang Young Choi[1], Dae Joon You[1], Hyun Sup Yang[2], *[1]Dept. of Electrical Engineering, Chungnam National University, Republic of Korea, [2]SAMSUNG TECHWIN CO. LTD., Republic of Korea*

**CV-08 FE ANALYSIS AND CAD OF RADIAL-FLUX SURFACE MOUNTED PERMANENT MAGNET BRUSHLESS DC MOTORS**

Parag R. Upadhyay, K. R. Rajagopal, *Electrical Engineering Department, IIT Delhi, India*

**CV-09 A NOVEL INTEGRAL-FORCE TECHNIQUE FOR THE ANALYSIS OF AN AXIAL-FIELD PERMANENT MAGNET BRUSHLESS DC MOTOR USING FE METHOD**

Parag R. Upadhyay, K. R. Rajagopal, *Electrical Engineering Department, IIT Delhi, India*

**CV-10 FE ANALYSIS OF MULTI-PHASE DOUBLY SALIENT PERMANENT MAGNET MOTORS**

Angara. R. C. Sekhar Babu, K. R. Rajagopal, *Electrical Engineering Department, Indian Institute of Technology Delhi, New Delhi, India*

**CV-11 PERMANENT MAGNET DEMAGNETIZATION CHARACTERISTICS ANALYSIS OF A VARIABLE FLUX MEMORY MOTOR USING COUPLED PREISACH MODELING AND FEM**

Young-Jin Jang[1], Jung-Ho Lee[1], Jung-Chul Kim[2], *[1]Dept. of Electrical Engineering, Hanbat National University., Republic of Korea, [2]LG Electronics Inc., DA Research Lab., Republic of Korea*

**CV-12 DYNAMIC CHARACTERISTICS ANALYSIS IN A POLE CHANGING MEMORY MOTOR USING COUPLED FEM & PREISACH MODELING**

Jung-Min Park, Sun-Bum Kwon, Jung-Ho Lee, *Dept. of Electrical Engineering, Hanbat National University, Republic of Korea*

**CV-13 BLDC SPINDLE MOTOR COGGING TORQUE CALCULATION WITH THE MOVING MATERIAL METHOD IN THE FINITE ELEMENT METHOD**

Sung Hong Won, Ju Lee, *Dept. of Electric Eng., Hanyang University, Republic of Korea*

**CV-14 SENSORLESS DETECTION OF FREE-FALLING STATE OF A HDD BY MONITORING ELECTROMECHANICAL SIGNAL OF A SPINDLE MOTOR**

Gun Hee Jang, Sang Jin Park, *PREM Lab., Hanyang University, Republic of Korea*

**Apr. 6** **Event Hall**

**8:30-12:00** **Session CW**

## Motors III

**O. Ichinokura**

Tohoku University

**CW-01 A ROTOR ANGULAR POSITION ESTIMATION BASED ON A SIMPLE MATHEMATICAL EXPRESSION OF THE MAGNETIZING CHARACTERISTICS OF SWITCHED RELUCTANCE MACHINES**

Takanori Suzuki[1], Motoichiro Terada[1], Akira Chiba[1], Masatsugu Takemoto[2], Tadashi Fukao[2], *[1]Tokyo University of Science, Japan, [2]Musashi Institute of Technology, Japan*

**CW-02 EFFECTS OF ROTOR ECCENTRICITY ON TORQUE IN SWITCHED RELUCTANCE MOTORS**

David G Dorrell, Ivan Chindurza, Calum Cossar, *Dept. of Electronics and Electrical Engineering, University of Glasgow, United Kingdom*

**CW-03 VARIATIONS IN OVERALL DEVELOPED TORQUE OF A SWITCHED RELUCTANCE MOTOR WITH AIRGAP NONUNIFORMITY**

Nimit K. Sheth, K. R. Rajagopal, *Electrical Engineering Department, Indian Institute of Technology Delhi, New Delhi, India*

**CW-04 NOVEL POLE SHAPES FOR IMPROVED PERFORMANCE OF SWITCHED RELUCTANCE HUB MOTORS**

Kamal Pandey, K. R. Rajagopal, *Electrical Engineering Department, Indian Institute of Technology Delhi, India*

**CW-05 SPICE SIMULATION OF A SWITCHED RELUCTANCE MOTOR WITH NOVEL DRIVING CIRCUIT**

Hiroki Goto[1], Hai-Jiao Guo[2], Osamu Ichinokura[1], *[1]Department of Electrical and Communication Engineering, Tohoku University, Japan, [2]Department of Electrical and Information Engineering, Tohoku-Gakuin University, Japan*

**CW-06 SPEED CONTROL WITH NEGATIVE TORQUE MINIMIZATION IN SINGLE PHASE SRM**

Joon Seon Ahn, Hee-Kwan Park, Seung-Joo Kim, Jae-Hak Choi, Ju Lee, *Energy Conversion Lab., Department of Electrical Engineering, Hanyang University, Republic of Korea*

**CW-07 OPTIMUM DESIGN CRITERIA BASED ON RATED WATT OF SYNCHRONOUS RELUCTANCE MOTOR USING A COUPLED FEM & SUMT**

Sun-Bum Kwon[1], Jung-Ho Lee[1], Jung-Chul Kim[2], *[1]Dept. of Electrical Engineering, Hanbat National University, Republic of Korea, [2]LG Electronics Inc.DA Research Lab., Republic of KOREA*

**CW-08 EFFICIENCY EVALUATION OF PMASynRM VS. SynRM USING COUPLING FEM & PREISACH MODELING**

Rae-Hwa Lee, Young-Jin Jang, Jung-Ho Lee, *Dept. of Electrical Engineering, Hanbat National University, Republic of Korea*

**CW-09 IRON LOSS DISTRIBUTION OF FLUX-REVERSAL MACHINE ACCORDING TO VARIOUS PWM MODES**

Tae Heoung Kim, Ki-Bong Jang, Seung-Bin, Jae-Nam Bae, Ju Lee, *Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**CW-10 STARTING AND HIGH SPEED DRIVING OF SINGLE PHASE FLUX REVERSAL MOTOR FOR VACUUM CLEANER**

Ki-Bong Jang, Tae Heoung Kim, Seung-Bin Lim, Ju Lee, *Department of Electrical Engineering, Hanyang University, Republic of Korea*

**CW-11 REDUCTION OF COGGING TORQUE IN FLUX-REVERSAL MACHINE BY ROTOR TEETH PAIRING**

Tae Heoung Kim, Sung Hong Won, Jae-Nam Bae, Ju Lee, *Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**CW-12 EFFECT OF DESIGN VARIABLES ON IRREVERSIBLE PERMANENT MAGNET DEMAGNETIZATION IN FLUX-REVERSAL MACHINE**

Tae Heoung Kim, Jae Nam Bae, Ju Lee, *Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**CW-13 ANALYSIS OF A LAMINATED CORE PARAMETRIC INDUCTION MOTOR BASED ON THREE DIMENSIONAL RELUCTANCE NETWORK MODEL**

Katsubumi Tajima[1], Masatoshi Hattori[1], Tsuyoshi Miyaji[1], Tadashi Sato[1], Yoshinori Sakamoto[2], *[1]Department of Electrical and Electronic Engineering, Akita University, Japan, [2]Department of Kansei Design, Hachinohe Institute of Technology, Japan*

**Apr. 6** **Reception Hall**

## Session DA
## Magnetic Semiconductors II

**M. Tanaka**

The University of Tokyo

**DA-01 14:30 TUNNEL MAGNETORESISTANCE IN II-VI/III-V HETEROSTRUCTURE $Ga_{1-x}Mn_xAs/ZnSe/Ga_{1-x}Mn_xAs$ MAGNETIC TUNNEL JUNCTIONS**

Hidekazu Saito, Shinji Yuasa, Koji Ando, *Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology, Japan*

**DA-02 14:45 EFFECT OF CLUSTERING ON FERROMAGNETISM IN (Ga,Mn)As**

Hannes Raebiger[1], Andres Ayuela[2], Juhani von Boehm[1], Risto M. Nieminen[1], *[1]COMP/Laboratory of Physics, Finland, [2]Donostia International Physics Centre (DIPC), Spain*

**DA-03 15:00 MAGNETIZATION REVERSAL WITH DOMAIN-WALL PINNING IN (Ga,Mn)As WIRE**

Takayoshi Koike[1], Kohei Hamaya[1], Naofumi Funakoshi[2], Yasushi Takemura[2], Yoshitaka Kitamoto[1], Hiroo Munekata[3], *[1]Dept, of Innovative and Engineered Materials, Tokyo Institute of Technology, Japan, [2]Division of Electrical and Computer Engineering, Yokohama National University, Japan, [3]Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Japan*

**DA-04 15:15 FERROMAGNETIC TRANSITION-METAL-DOPED TIN DIOXIDE THIN FILMS**

Nguyen Hoa Hong[1], Joe Sakai[2], Antoine Ruyter[1], Wilfrid Prellier[3], Awatef Hassini[1], Virginie Brize[1], *[1]Laboratoire LEMA, University of Tours, France, [2]School of Materials Science, JAIST, Japan, [3]Laboratoire CRISMAT, ENSICAEN, France*

**DA-05 15:30 FERROMAGNETISM IN DILUTE MAGNETIC SEMICONDUCTORS AND NEW MATERIALS FOR SPINTRONICS**

Valery A. Ivanov[1], Victor Fleurov[2], Konstantin Kikoin[3], Vladimir M. Novotortsev[1], Tel'man G. Aminov[1], Sergei F. Marenkin[1], Galina G. Shabunina[1], Ljudmila I. Koroleva[4], Vladimir T. Kalinnikov[5], Boris A. Aronzon[6], Vladimir V. Rylkov[6], Stanislav V. Gudenko[6], *[1]N. S. Kurnakov Institute of General and Inorganic Chemistry, Russian Academy of Sciences, Russian Federation, [2]School of Physics and Astronomy, Tel Aviv University, Israel, [3]Department of Physics, Ben-Gurion University, Israel, [4]Department of Physics, M. V. Lomonosov Moscow State University, Russian Federation, [5]I. V. Tananaev Institute of Chemistry and Technology of Rare Elements and Minerals, Russian Academy of Sciences, Russian Federation, [6]Russian Scientific Center "Kurchatov Institute", Russian Federation*

**DA-06 15:45 ABSENCE OF FERROMAGNETISM AND STRONG ORBITAL COUPLING IN CARRIER RICH $Zn_{1-x}In_xCo_{0.075}O$**

Xiao Lin Wang, Germanas Peleckis, Shi Xue Dou, *Institute of Superconducting and Electronic Materials, University of Wollongong, Australia*

**Apr. 6** **Room 141/142**

## Session DB
## Current Developments in Inductive Heads & Materials

**K. Tagami**
TDK Corporation

**DB-01 14:30 ENHANCEMENT OF MAGNETIC FLUX DENSITY IN SPUTTERED FeCoPd ALLOY AND $[FeCo/Pd]_n$ SUPER-LATTICE FILMS AT ROOM TEMPERATURE**

Kenji Noma, Masaaki Matsuoka, Hitoshi Kanai, Yuji Uehara, *Advanced Head Technology Development Dept., Fujitsu Ltd., Japan*

**DB-02 14:45 EXPERIMENTAL EVIDENCE FOR GYROMAGNETIC DAMPING IN MAGNETIC HEADS DETERMINED BY IMPEDANCE MEASUREMENTS UP TO 9 GHz**

Ahmet Kaya[1], James A. Bain[2], *[1]Data Storage Systems Center, Physics Dept., Carnegie Mellon University, United States of America, [2]Data Storage Systems Center, Dept. of Electronics and Comp. Eng., Carnegie Mellon University, United States of America*

**DB-03 15:00** **WRITE HEAD ANALYSIS BY USING PARALLEL MICROMAGNETIC-FEM**

Ken-ichi Takano, El-Amine Salhi, Masanori Sakai, Moris Dovek, *Headway Technologies, United States of America*

**DB-04 15:15** **POLE-TIP SIZE EFFECT ON PERPENDICULAR RECORDING HEAD REMANENCE**

Yuchen Zhou, Jian-Gang Zhu, *Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, United States of America*

***DB-05 15:30** **CPP-GMR READER AND WRAPAROUND SHIELD WRITER FOR PERPENDICULAR RECORDING**

Kazuhiro Nakamoto, Hiroyuki Hoshiya, Tomohiro Okada, Hiroyuki Katada, Masahiko Hatatani, Katsumi Hoshino, Nobuo Yoshida, Isao Nunokawa, Kimitoshi Etoh, Katsuro Watanabe, *Storage Technology Research Center, Hitachi, Ltd., Japan*

**Apr. 6** **Room 234**

## Session DC
## Magnetic Nanoparticles in Biomagnetism

**K. Noda**

The Institute of Physical and Chemical Research (RIKEN)

**DC-01 14:30** **DETECTION OF CYSTIC FIBROSIS RELATED DNA TARGETS USING AC FIELD FOCUSING OF MAGNETIC LABELS AND SPIN-VALVE SENSORS**

Hugo A. Ferreira[1], Daniel L. Graham[1], Nuno Feliciano[1], Luka A. Clarke[2], Margarida D. Amaral[2], Paulo P. Freitas[1], *[1]INESC - Microsystems and Nanotechnologies, Portugal, [2]Chemistry and Biochemistry Department, Faculty of Sciences, University of Lisbon, Portugal*

**DC-02 14:45** **FUNCTIONALIZATION OF MICRO- HALL EFFECT SENSORS FOR BIOMEDICAL APPLICATIONS UTILIZING SUPERPARAMAGNETIC BEADS**

Adam Lapicki[1], Hideaki Sanbonsugi[2], Takuya Yamamura[3], Nobuhiro Matsushita[2], Masanori Abe[2], Hiroki Narimatsu[4], Hiroshi Handa[4], Adarsh Sandhu[1], *[1]Quantum Nanoelectronics Res. Center, Tokyo Inst. of Technology, Japan, [2]Dept. of Physical Electronics, Tokyo Inst. of Technology, Japan, [3]Dept. of Electrical Engineering, Tokyo Inst. of Technology, Japan, [4]Grad. School of Bioscience and Biotechnology, Tokyo Inst. of Technology, Japan*

**DC-03 15:00** **EXPEDITING MAGNETIC SEPARATION BY USING Ni WIRES FOR ROBOT-MANIPULATED BIO-SENSING SYSTEM**

Ryuuichi Shimazu[1], Masaru Tada[1], Nobuhiro Matsushita[1], Hiroshi Handa[2], Masanori Abe[1], *[1]Dept. of Physical Electronics, Tokyo Institute of Technology, Japan, [2]Dept. of Biological Information, Tokyo Institute of Technology, Japan*

**DC-04 15:15 DEVELOPMENT OF MAGNETIC DROPLET-HANDLING SYSTEM FOR MICROFLUIDIC BIOCHEMICAL ANALYSIS**

H. Ito[1], R. Kato[1], K. Takayanagi[2], M. Shikida[2], K. Sato[2], H. Honda[1], *[1]Dept. of Biotechnology, Nagoya University, Japan, [2]Dept. of Micro-Nano Systems Engineering, Nagoya University, Japan*

**DC-05 15:30 SURFACE MODIFICATION OF SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLES FOR CLINICAL APPLICATIONS**

Kyoungja Woo, Jang Won Hong, *Nano-Materials Research Center, Korea Institute of Science and Technology, Republic of Korea*

**DC-06 15:45 MAGNETIC HOLLOW SILICA NANOTUBES FOR BIO-APPLICATIONS**

Peng Gao[1], Daniela Caruntu[1], Lei Shao[1], Ming Hui Yu[1], Jian Feng Chen[2], Charles J. O'Connor[1], Weilie L. Zhou[1], *[1]Advanced Materials Research Institute, University of New Orleans, United States of America, [2]Research Center of the Ministry of Education for High Gravity Engineering and Technology, Beijing University of Chemical Technology, China*

**Apr. 6** **Room 224**

## Session DD
## Applications of Soft Magnetic Materials Ⅰ

**H. Chiriac**

National Institute of Research and Development for Technical Physics, Romania

**DD-01 14:30 APPLICATION FOR ELECTRIC RESISTANCE ELEMENT OF GRANULAR FILMS**

Hideya Yamadera, *Toyota Central Research & Development Laboratories,Inc., Japan*

**DD-02 14:45 EVALUATION OF INDUCED ELECTRIC CURRENTS IN STRIP-WOUND AMORPHOUS CORES**

Oriano Bottauscio[1], Valeria Chiado' Piat[2], Mario Chiampi[3], Marco Codegone[2], Alessandra Manzin[1], *[1]IEN Galileo Ferraris, Torino, Italy, [2]Dept. Matematica, Politecnico di Torino, Italy, [3]Dept. Ingegneria Elettrica, Politecnico di Torino, Italy*

**DD-03 15:00 INVESTIGATION OF GMI IN CoSiB AND NiFe TRI-LAYER THIN FILM STRUCTURES**

Amruta V. Borge, Kevin R. Coffey, *Advanced Materials Processing and Analysis Center, University of Central Florida, United States of America*

**DD-04 15:15 APPLICATION OF FeCoB HIGH-Hk HETERO AMORPHOUS THIN FILM TO RF INTEGRATED INDUCTOR**

Masahiro Yamaguchi[1], Ki Hyeon Kim[1], Takashi Kuribara[1], Tadahiro Fukushima[1], Makoto Munakata[2], Masaaki Yagi[2], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]Energy Electronics Lab., Sojo University, Japan*

**DD-05 15:30 MAGNETIC REFRIGERATOR WITH ROTATING POROUS HEAT EXCHANGER**

Peter W. Egolf, Andrej Kitanovski, Osmann Sari, *University of Applied Sciences of Western Switzerland, Switzerland*

**DD-06 15:45 INFLUENCE OF SOFT MAGNETIC MATERIALS ON THE DESIGN AND PERFORMANCE OF TUBULAR PERMANENT MAGNET MACHINES**

Jia Bin Wang, David Howe, *Dept. of Electronic & Electrical Engineering, University of Sheffield, United Kingdom*

**Apr. 6** **Room 131/132**

## Session DE
## New Phenomena & Applications

**Y.K. Kim**
Korea University

***DE-01 14:30 DISCOVERY OF A NEW MAGNETIC FLUID: BMIM[$FeCl_4$] IONIC LIQUID**

Hiro-o Hamaguchi, *Department of Chemistry, School of Science, The University of Tokyo, Japan*

**DE-02 15:00 MAGNETICALLY DEFINED DOMAIN ISOLATION FOR STUDIES OF NUCLEATION AND GROWTH COERCIVITIES**

Philipp Herget[1], Brian Knight[1], James A. Bain[1], T. E. Schlesinger[1], Hiroyuki Awano[2], *[1]Data Storage Systems Center, Carnegie Mellon University, United States of America, [2]Development and Technology Division, Hitachi-Maxell, Ltd., Japan*

**DE-03 15:15 AN ENERGY-BASED MODEL FOR DYMNAMIC HYSTERESIS AND EXTRA-LOSSES**

O. Maloberti[1], V. Mazauric[1], G. Meunier[2], A. Kedous-Lebouc[2], O. Geoffroy[3], Y. Rebiere[1], *[1]Schneider Electric Corporate Reserch, France, [2]Laboratoire d'Electrotechnique de Grenoble(CNRS), France, [3]Laboratoire Louis Neel(CNRS), France*

**DE-04 15:30 COUNTING INTRINSIC LOCALIZED MODES IN AN ANTIFERROMAGNET**

Masayuki Sato, Albert J. Sievers, *Laboratory of Atomic and Solid State Physics, Cornell University, United States of America*

**DE-05 15:45 STABILIZATION OF MAGNET CURRENT USING JOSEPHSON VOLTAGE STANDARD**

Kyu-Tae Kim, Mun-Seog Kim, Po Gyu Park, *Electricity and Magnetism Group, Korea Research Institute of Standards and Science, Republic of Korea*

**Apr. 6** **Room 133/134**

## Session DF
## Micromagnetic Simulations

**M.E. Schabes**
Hitachi Global Storage Technologies

**DF-01 14:30 MULTISCALE CALCULATIONS OF MAGNETIZATION REVERSAL IN SOFT/HARD MAGNETIC BILAYER**

Felipe Garcia-Sanchez[1], Oksana Chubykalo-Fesenko[1], Oleg Mryasov[2], Roy W. Chantrell[3], *[1]Instituto de Ciencia de Materiales de Madrid, Spain, [2]Seagate Research, Pittsburgh, United States of America, [3]University of York, United Kingdom*

**DF-02 14:45 PHASE SHIFT OF SPIN WAVES TRAVELLING THROUGH A 180$^{o}$ BLOCH DOMAIN WALL**

Christian Bayer[1], Helmut Schultheiss[1], Burkard Hillebrands[1], Robert L. Stamps[2], *[1]Fachbereich Physik and Forschungsschwerpunkt MINAS, Technische Universitaet Kaiserslautern, Germany, [2]School of Physics, University of Western Australia, Australia*

**DF-03 15:00 VORTEX-ANTIVORTEX PAIR DRIVEN MAGNETIZATION DYNAMICS**

Ki-Suk Lee, Byoung-Woo Kang, Sang-Koog Kim, *Nanospintronics Laboratory, School of Materials Science and Engineering, Seoul National University, Republic of Korea*

**DF-04 15:15 FINITE ELEMENT MICROMAGNETIC SIMULATION OF SWITCH DYNAMICS OF PERPENDICULAR MEDIA UNDER TILTED WRITE FIELD**

H. H. Long[1], J. T. Li[1], J. P. Wang[2], Z. J. Liu[1], *[1]Data Storage Institute, National University of Singapore, Singapore, [2]Dept. of Electrical and Computer Engineering, University of Minnesta, United States of America*

**DF-05 15:30 INFLUENCE OF EDDY CURRENT ON MAGNETIZATION PROCESSES IN SUB-MICRON PERMALLOY STRUCTURES**

Gino Hrkac[1], Thomas Schrefl[2], Otmar Ertl[1], Markus Kirschner[1], Dieter Suess[1], Josef Fidler[1], *[1]Solid State Physics, Technical University of Vienna, Austria, [2]Dept. of Engineering Materials, University of Sheffield, United Kingdom*

**DF-06 15:45 ANALYTICAL STUDY OF TRANSIENTS LEADING TO SELF-OSCILLATIONS IN SPIN-TORQUE-DRIVEN MAGNETIZATION DYNAMICS**

Claudio Serpico[1], Roberto Bonin[2], Massimiliano d'Aquino[1], Giorgio Bertotti[3], Isaak Mayergoyz[4], *[1]Dept. of Electrical Eng., University of Naples, Napoli, Italy, [2]Politecnico di Torino, Torino, Italy, [3]IEN galileo ferraris, Torino, Italy, [4]DECE University of Maryland, College Park, MD, United States of America*

**Apr. 6** **Shirotori Hall**

**Session DZ**

**16:10** **Plenary Session**

**Apr. 7** **Reception Hall**

**Session EA**

**MRAMs**

**Y. Saito**

Corporate R&D Center, Toshiba Corporation

**EA-01 9:30 ORTHOGONAL SHAPE/INTRINSIC ANISOTROPY TOGGLE- MRAM**

Sheng Yuan Wang, Hideo Fujiwara, *MINT Center and Department of Physics and Astronomy, University of Alabama, United States of America*

**EA-02 DEVELOPMENT OF MAGNETIC TUNNEL**
**9:45 JUNCTION FOR TOGGLE-MRAM**

H.-J. Kim, Y. K. Ha, S. C. Oh, J. S. Bae, K. T. Nam, J. E. Lee, S. O. Park, H. S. Kim, U-In Chung, J. T. Moon, *Samsung Electronics Co. Ltd., Republic of Korea*

**EA-03 PRECESSION-DOMINATED REVERSAL OF**
**10:00 SYNTHETIC ANTIFERROMAGNETS AND SYNTHETIC FERRIMAGNETS**

Cedric Maufront[1], Joo-Von Kim[2], Thibaut Devolder[2], Richard Fournel[1], Claude Chappert[2], *[1]STMicroelectronics, France, [2]Institut d'Electronique Fondamentale, CNRS/Univ. Paris-Sud, France*

**EA-04 EFFECTIVE BIT ADDRESSING TIMES FOR**
**10:15 PRECESSIONAL MAGNETIZATION REVERSAL IN A MAGNETIC MEMORY CELL**

H. W. Schumacher[1], C. Chappert[2], R. C. Sousa[3], P. P. Freitas[3], *[1]Physikalisch-Technische Bundesanstalt, Germany, [2]Institut d'Electronique Fondamentale, UMR 8622, CNRS, Universite Paris Sud, France, [3]Instituto de Engenharia de Sistemas e Computadores, Portugal*

**EA-05 EDGE DOMAIN DEPENDENT PINNING EFFECT BY**
**10:30 THE STRAY FIELD IN THE PATTERNED MAGNETIC TUNNEL JUNCTION**

Naoharu Shimomura[1], Tatsuya Kishi[1], Masatoshi Yoshikawa[1], Eiji Kitagawa[1], Yoshiaki Asao[1], Hiromitsu Hada[2], Hiroaki Yoda[1], Shuichi Tahara[2], *[1]Corporate Research & Development Center, Toshiba Corp., Japan, [2]System Devices Laboratories, NEC Corp., Japan*

**EA-06 A NEW SWITCHING ARCHITECTURE FOR MRAM:**
**10:45 LOCAL FIELD SWITCHING**

Injun Hwang[1], Wanjun Park[1], Y. J. Cho[1], K. W. Kim[1], Y. M. Jang[1], W. C. Jeong[2], J. H. Oh[2], J. E. Lee[2], Hong Seog Kim[3], T .W. Kim[1], *[1]Samsung Advanced Institute of Technology, Republic of korea, [2]Semiconductor R&D Division, Samsung Electronics, Republic of korea, [3]Divion of Information Technology, PaiChai University, Republic of korea*

**EA-07 FLUX-CLOSED MRAM WITH ULTRA-LOW**
**11:00 SWITCHING CURRENT**

Yuan Kai Zheng[1], Kebin B. Li[1], Jin Jun Qiu[1], Li Hua An[1], Ping Luo[1], Z. B. Guo[1], Hu Chang Han[1], Yi Hong Wu[2], *[1]Data Storage Institute, Singapore, [2]Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

**EA-08 FABRICATION OF A VERTICAL MRAM DEVICE**
**11:15** Matthew T. Moneck, Jian-Gang Zhu, *Dept. of Electrical and Computer Engineering, Carnegie Mellon University, United States of America*

**EA-09 HIGH QUALITY MAGNETIC TUNNEL JUNCTIONS**
**11:30 FOR MRAM USING REACTIVELY SPUTTERED $Al_2O_3$ BARRIERS**

Takaaki Tsunoda[1], Daniele Mauri[2], *[1]ANELVA Corporation, United States of America, [2]Hitachi Global Storage Technologies, Inc., United States of America*

**EA-10 STUDY OF INTERMEDIATE MAGNETIZATION**
**11:45 STATES IN DEEP SUBMICROMETER MRAM CELLS**

Tai Min[1], Po-Kang Wang[1], Mao-Min Chen[1], Cheng Horng[1], Xi Zeng Shi[2], Yimin Guo[1], Liubo Hong[1], Otto Voegeli[1], Qiang Chen[1], Son Le[1], *[1]Headway Technologies, Inc, United States of America, [2]Applied Spintronics, Inc., United States of America*

**EA-11 THERMALLY ASSISTED SWITCHING OF**
**12:00 EXCHANGE COUPLED BI-LAYER WITH DIFFERENT ORDERING TEMPERATURE**

Yousuke Isowaki, Yukio Nozaki, Kimihide Matsuyama, *Dept. of Electronics, Kyushu University, Japan*

**EA-12 CURIE POINT WRITING ON MICROFABLICATED**
**12:15 TbFe FILMS BY APPLYING A PULSE CURRENT**

Takumu Masubuchi[1], Takeshi Kato[1], Shigeru Tsunashima[1], Satoshi Iwata[2], *[1]Dept. of Electronics, Nagoya University, Japan, [2]CCRAST, Nagoya University, Japan*

**Apr. 7** **Room 141/142**

## Session EB
## FePt Media and Materials

**S.H. Lim**
Korea University

**EB-01 TOWARD SELF ASSEMBLY OF $L1_0$-FePt NANO**
**9:30 PARTICLES BY SPUTTERING**

Nobuhiro Katayama, Tomoaki Maekawa, Shuki Yamamoto, Xiao Xi Liu, Akimitsu Morisako, Mitsunori Matsimoto, *Dept. of Information Engineering, Shinshu University, Japan*

**EB-02 FABRICATION AND CHARACTERIZATION OF $L1_0$**
**9:45 FePt NANOPARTICLES**

Rumyana V. Petrova[1], R.R.Vanfleet[2], D.Richardson[2], B.Yao[1], K.R.Coffey[1], *[1]University of Central Florida, United States of America, [2]Department of Physics, Brigham Young University, United States of America*

**EB-03 HALL EFFECT STUDY OF SOFT MAGNETIC**
**10:00 PROPERTIES OF THIN FILMS (FeCoB, NiFe) STACKED ON FePt THIN FILMS WITH PERPENDICULAR MAGNETIC ANISOTROPY**

Sarbanoo Das, Tomoya Hatori, Sukefumi Ito, Taku Kitagawa, Shigeki Nakagawa, *Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**EB-04 10:15 EFFECT OF BORON ADDITION ON THE ORDERING PROCESS IN THE FePt THIN FILM**

Chan-Gyu Lee[1], Byeong-Seon Lee[1], Y. Shimada[2], O. Kitakami[2], S. Okamoto[2], T. Miyazaki[2], *[1]School of Nano . Advanced Materials Engineering, Changwon National University, Republic of Korea, [2]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan*

**EB-05 10:30 FePt PERPENDICULAR RECORDING MEDIA WITH Ag LAYER INSERTED**

J.S. Chen[1], Y.Z. Zhou[2], B.C. Lim[1], J. Zhang[1], G. M. Chow[2], *[1]Data Storage Institute, Singapore, [2]Department of Materials Science, National University of Singapore, Singapore*

**EB-06 10:45 GROWTH OF PERPENDICULAR FePt THIN FILMS AT LOW TEMPERATURE**

Chih-Huang Lai, Yun-Chung Wu, Chao-Chien Chiang, *Department of Materials Science and Engineering, National Tsing Hua University, Taiwan*

**EB-07 11:00 Fe(100) FORMATION IN Fe/Pt BILAYERS TO ATTAIN (001) ORIENTATION OF FePt ORDERED ALLOY THIN FILMS IN AS-DEPOSITED STATE**

Taku Kitagawa, Taro Kamiki, Shigeki Nakagawa, *Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**EB-08 11:15 MAGNETIC PATTERNING OF FePt THIN FILMS USING ION IMPLANTATION**

Tsutomu Aoyama[1], Isamu Sato[1], Shunji Ishio[2], *[1]TDK Corporation, Japan, [2]Akita University, Japan*

**EB-09 11:30 REDUCTION OF ORDERING TEMPERATURE IN SUBSTITUTED FePtNi NANOPARTICLES FORMED BY CHEMICAL SYNTHESIS**

Hongli Wang[1], Yunhe Huang[1], Yong Zhang[1], Karl K. Unruh[1], George C. Hadjipanayis[1], Dieter Weller[2], T Simopoulos[3], *[1]Department of Physics & Astronomy, University of Delaware, United States of America, [2]Seagate Technology, United States of America, [3]IMS, NCSR DEMOKRITOS, Greece*

**EB-10 11:45 RECORDING PERFORMANCE OF GRANULAR-TYPE FePt-MgO PERPENDICULAR MEDIA**

T. Suzuki[1], Z. Zhang[2], J. Yin[1], A. Singh[1], *[1]ISML, Toyota Technolgical Institute, Japan, [2]HGST, Japan*

**EB-11 12:00 THERMAL STABILITY OF GRANULAR-TYPE FePt-MgO PERPENDICULAR RECORDING MEDIA WITH SOFT UNDERLAYERS**

Amarendra K. Singh, Jin Hua Yin, Takao Suzuki, *ISML, Toyota Technological Institute, Japan*

**EB-12 12:15 OXIDATION INDUCED ALLOY COMPOSITION AND MAGNETIC PROPERTY CHANGE IN FePt THIN FILM**

Jun Yuan, Peiwen Wu, Xuerang Hu, Jun Qian, *Department of Materials Science and Engineering, Tsinghua University, China*

## Session EC
## Ferrites

**M-J. Tung**
Industrial Technology Research Institute, Taiwan

**Y-K. Hong**
University of Idaho

**EC-01 9:30** **$Fe_3O_{4+\delta}$ FILMS FOR GHz CONDUCTED NOISE SUPPRESSORS DEPOSITED BY HIGH SPEED (>100 nm/min) SPIN SPRAY FERRITE PLATING**

Masaru Tada, Jin Miyasaka, Nobuhiro Matsushita, Masanori Abe, *Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**EC-02 9:45** **SYNTHESIS OF LOW TEMPERATURE SINTERED FERROELECTRIC-FERROMAGNETIC COMPOSITE MATERIALS**

Hui Zhong, Huai Wu Zhang, Hai Tao Zhou, Li Jun Jia, *School of microelectronics and solid-state electronics, University of electronic science and technology of China, China*

**EC-03 10:00** **SOL-GEL FABRICATED $CoFe_2O_4/SiO_2$ NANOCOMPOSITES: SYNTHESIS AND MAGNETIC PROPERTIES**

Jana Vejpravova[1], Vladimir Sechovsky[1], Jiri Plocek[2], Daniel Niznansky[2], Alzbeta Huntlova[3], J-L Rehspringer[4], *[1]Charles University in Prague, Faculty of Mathematics And Physics, Department of Electronic Structures, Czech Republic, [2]Charles University in Prague, Faculty of Natural Sciences, Department of Inorganic Chemistry, Czech Republic, [3]Institute of Inorganic Chemistry - ASCR, Czech Republic, [4]IPCMS, Groupe des Materiaux Inorganiques, France*

**EC-04 10:15** **MAGNETIC PROPERTIES OF $Fe/(NiZnCu)Fe_2O_4$ COMPOSITE FILMS PREPARED BY AEROSOL DEPOSITION METHOD**

Satoshi Sugimoto[1], Kazuaki Haga[1], Masahiro Nakata[1], Toshio Kagotani[1], Koichiro Inomata[1], Jun Akedo[2], *[1]Dept. of Materials Science, Graduate School of Engineering, Tohoku University, Japan, [2]Institute of Advanced Industrial Science and Technology (AIST), Japan*

**EC-05 10:30** **COMPLEX PERMITTIVITY AND PERMEABILITY OF HEXAFERRITE AND CARBONYL IRON POWDERS USING RECTANGULAR WAVEGUIDE TECHNIQUE FROM 8.0-40.0 GHz**

Adil Bahadoor, Yong Wang, Mohammed Afsar, *ECE Department, Tufts University, United States of America*

**EC-06 COMPLEX PERMITTIVITY AND PERMEABILITY**
**10:45 MEASUREMENTS OF FERRIMAGNETS AT MILLIMETER WAVES WITH HIGH POWER SOURCES**

Mohammed N. Afsar, Konstantin A. Korolev, Lakshmi Subramanian, Igor I. Tkachov, *Department of Electrical and Computer Engineering, Tufts University, United States of America*

**EC-07 ELECTRO-MAGNETIC PROPERTIES OF A NEW**
**11:00 FERRITE-CERAMIC LOW TEMPERATURE CO-CALCINED (LTCC) COMPOSITE MATERIALS**

H.W. Zhang[1], H. Zhong[1], B.Y. Liu[1], Y.L. Jing[1], Y.Y. Liu[2], *[1]School of Microelectronic and Solid-state Electronic, University of Electronic Science and Technology of China, China, [2]Department of physics & Astronomy, University of Delaware, United States of America*

**EC-08 ELECTROMAGNETIC PROPERTIES OF Mn-Zn**
**11:15 FERRITE-EPOXY NANOCOMPOSITES**

Hae-June Je, Byung-Kook Kim, *Mater. Sci. Tech. Div., Korea Institute of Sci. & Tech., Republic of Korea*

**EC-09 MAGNETIC BEHAVIOUR OF NANOCOMPOSITES**
**11:30 CONTAINING SELF-ASSEMBLED MAGNETITE PARTICLES DISPERSED IN A PARAFFIN WAX MATRIX**

Chun-Rong Lin[1], Ti-Wen Sung[1], Ray-Kuang Chiang[2], *[1]Dept. of Mechanical Engineering, Southern Taiwan University of Technology, Taiwan, [2]Dept. of Chemical Engineering, Far East College, Taiwan*

**EC-10 FMR STUDY ON SPIN-SPRAYED Ni-Zn-Co FERRITE**
**11:45 FILMS WITH HIGH PERMEABILITY USABLE FOR GHz NOISE SUPPRESSORS**

Koichi Kondo[1], Tatsuya Chiba[1], Shigeyoshi Yoshida[1], Satoshi Okamoto[2], Yutaka Shimada[2], Nobuhiro Matsushita[3], Masanori Abe[3], *[1]NEC Tokin Corporation, Japan, [2]Tohoku University, Japan, [3]Tokyo Institute of Technology, Japan*

**EC-11 MICROWAVE FERROMAGNETIC RESONANCE OF**
**12:00 COBALT AND NICKEL SUBSTITUTED U-TYPE HEXAFERRITES**

Mohammed N. Afsar[1], Darja Lisjak[2], Adil Bahadoor[1], Yong Wang[1], *[1]Tufts University, ECE Department, United States of America, [2]Jozef Stefan Institute, Advanced Materials Department, Jamova 39, Slovenia*

**EC-12 INFLUENCE OF HIGH VALENCE CATIONS ON SOFT**
**12:15 SPINEL PROPERTIES**

A. D. P. Rao[1], S.B. Raju[2], *[1]Department of Nuclear Physics, Andhra University, India, [2]Department of Physics, Andhra University, India*

## Session ED
## Patterned Nanostructures I

**B. Hillebrands**
Fachbereich Physik, TU Kaiserslautern

**ED-01 9:30** **THERMALLY INDUCED VORTEX NUCLEATION IN PERMALLOY ELEMENTS**
Rok Dittrich[1], Thomas Schrefl[2], Dieter Suess[2], Markus Kirschner[2], Josef Fidler[2], *[1]University of Sheffield, United Kingdom, [2]TU Vienna, Austria*

**ED-02 9:45** **MICROSTRUCTURES AND MAGNETIC PROPERTIES OF THE FIB IRRADIATED Co/Pd MULTILAYER FILMS**
Edi Suharyadi, Shinji Natsume, Takeshi Kato, Shigeru Tsunashima, Satoshi Iwata, *Department of Electronics, Graduate School of Engineering, Nagoya University, Japan*

**ED-03 10:00** **DETERMINATION OF MAGNETIC VORTEX CHIRALITY USING LATERAL SPIN VALVE GEOMETRY**
Yoshichika Otani[1], Takashi Kimura[2], Jaroslav Hamrle[2], *[1]ISSP, Univ. of Tokyo, Japan, [2]Riken FRS, Japan*

**ED-04 10:15** **NANOPATTERNING MAGNETIC THIN FILMS BY Ga ION IRRADIATION**
D. R. McGrouther[1], Y. Wang[1], J. N. Chapman[1], S. McVitie[1], J. Ferre[2], *[1]Department of Physics & Astronomy, University of Glasgow, United Kingdom, [2]LPS, Universite Paris-Sud, France*

**ED-05 10:30** **MAGNETIZATION REVERSAL OF CIRCULAR NANOSCALE FERROMAGNETIC ELEMENTS WITH MODIFIED SHAPES**
Hao Hu[1], Hua Wang[2], Molly R. McCartney[3], David J. Smith[3], *[1]Dept. of Physics and Astronomy, Arizona State University, United States of America, [2]Dept. of Chemical and Materials Engineering, Arizona State University, United States of America, [3]Center for Solid State Science, Arizona State University, United States of America*

**ED-06 10:45** **FLUX CLOSURE CONFIGURATION IN FERROMAGNETIC DIAMOND-SHAPED NANOMAGNETS**
Sarjoosing Goolaup[1], Navab Singh[2], Adekunle Olusola Adeyeye[1], *[1]Information Storage Materials Laboratory, Department of Electrical and Computer Engineering, National University of Singapore, Singapore, [2]Institute of Microelectronics, Singapore*

**ED-07 GEOMETRY-DEPENDENT HEAD-TO-HEAD**
**11:00 DOMAIN WALL PHASE DIAGRAM AND DOMAIN WALL WIDTHS IN FERROMAGNETIC RING STRUCTURES**

Markus Laufenberg[1], Mathias Klaeui[1], R. Dunin - Borowski[2], Carlos A. F. Vaz[3], J. A. C. Bland[3], Laura J. Heyderman[4], Frithjof Nolting[4], Ernst Bauer[5], Salia Cherifi[6], Ulrich Ruediger[1], *[1]FB Physik, Universitaet Konstanz, Germany, [2]Materials Sciences Department, University of Cambridge, United Kingdom, [3]Physics Department, University of Cambridge, United Kingdom, [4]Paul Scherrer Institut, Villigen, Switzerland, [5]Physics Department, Arizona State University, United States of America, [6]ELETTRA, Trieste, Italy*

**ED-08 $SiO_2$ SUBSTRATE HAVING SELF ORGANIZED NANO**
**11:15 SCALE PORES AND Co DOT ARRAY ON IT AND COERCIVITY ENHANCEMENT IN RE-TM FILM**

Akiyoshi Itoh[1], Arata Tsukamoto[1], K. Morisaki[1], K. Nanba[1], H. Sato[1], Y. Itoh[1], Joe Ohtsuki[2], Chi Won Ahn[3], *[1]Dept. of Electronics and Computer Science, Nihon University, Japan, [2]Dept. of Materials and Applied Chemstry, Nihon University, Japan, [3]Dept. of Nanoscience, Delft University of Technology, Netherlands*

**ED-09 SHAPE INDUCED ANISOTROPY IN HYBRID ANTI-**
**11:30 DOT ARRAYS FROM GUIDED SELF-ASSEMBLY TEMPLATES**

Alexander A. Zhukov[1], Michael E. Kiziroglou[2], Alexander V. Goncharov[1], Richard Boardman[3], Mohamed A. Ghanem[4], Valentyn Novosad[5], Goran Karapetrov[5], Xiaoli Li[2], Hans Fangohr[3], Cornelis H. de Groot[2], Philip N. Bartlett[4], Peter de Groot[1], *[1]School of Physics and Astronomy, University of Southampton, United Kingdom, [2]School of Electronics and Computer Science, University of Southampton, United Kingdom, [3]School of Engineering Sciences, University of Southampton, United Kingdom, [4]School of Chemistry, University of Southampton, United Kingdom, [5]Materials Science Division, Argonne National Laboratory,, United States of America*

**ED-10 NANOFABRICATION AS A PROBE OF ANISOTROPY**
**11:45 DISTRIBUTION IN Co/Pd MULTILAYERS**

Guo Han Hu, Thomas Thomson, Bruce D. Terris, *Hitachi GST, San Jose Research Center, United States of America*

**ED-11 FABRICATION OF MAGNETORESISTIVE SENSORS**
**12:00 USING SELF ASSEMBLED NANOSPHERE MASK**

Lalit Kumar Verma, Vivian Ng, *Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore*

**ED-12 ABSENCE OF WEAK ELECTRON LOCALIZATION IN**
**12:15 FERROMAGNETIC Co-NANOWIRES**

Mario Brands, Axel Carl, Guenter Dumpich, *Universitaet Duisburg-Essen, Experimentalphysik, AG Farle, Germany*

## Session EE
## Rare Earth-Transition Metal Magnets and Processing

**O. Gutfleisch**
IFW Dresden

**S.K. Chen**
Feng Chia University

***EE-01 9:30 IMPROVED PERPENDICULAR ANISOTROPY AND PERMANENT MAGNET PROPERTIES IN Co-DOPED Nd-Fe-B FILMS MULTILAYERED WITH Ta**

Minoru Uehara[1], Norio Gennai[2], Makoto Fujiwara[2], Takeo Tanaka[2], *[1]NEOMAX Co., Ltd., Japan, [2]Osaka Sangyo University, Japan*

**EE-02 10:00 $Sm(Co,Cu)_5$/Fe EXCHANGE SPRING MULTILAYER FILMS WITH HIGH ENERGY PRODUCT**

J. Zhang, Y.K. Takahashi, R. Gopalan, K. Hono, *National Institute for Material Science, Japan*

**EE-03 10:15 PLD-MADE ANISOTROPIC Nd-Fe-B THICK FILM MAGNETS**

Masaki Nakano[1], Shuichi Sato[1], Hirotoshi[1], Fumitoshi Yamashita[2], *[1]Dept. of Electrical and Electronic Engineering, Nagasaki University, Japan, [2]Matsushita Electric Industrial Co., Japan*

**EE-04 10:30 EFFECT OF DEPOSITION IN THE PRESENCE OF MAGNETIC FIELD ON THE MAGNETIC PROPERTIES OF CVD COBALT**

Nirmalendu Deo[1], Micheal F. Bain[1], John H. Montgomery[1], Brian L. Kelly[2], Harold S. Gamble[1], *[1]School of Electrial and Electronic Engineering, The Queen's University of Belfast, United Kingdom, [2]Seagate Technology R&D Division, Londonderry, United Kingdom*

**EE-05 10:45 RE-Fe-B POWDER COATING FOR IMPROVEMENTS IN CORROSION RESISTANCE, FLUX AGING LOSS AND MECHANICAL STRENGTH OF BONDED MAGNETS**

Peter C. Guschl, Peter Campbell, *Magnequench, Singapore*

**EE-06 11:00 DEVELOPMENT OF ANISOTROPIC BONDED MAGNET WITH HEAT RESISTANCE**

Norihiko Hamada, Kenji Noguchi, Chisato Mishima, Yoshinobu Honkura, *Electronic & Magnetic Product Div., Aichi Steel Corporation, Japan*

**EE-07 11:15 BONDED THIN CYLINDER MAGNET USING Sm-Fe-N ANISOTROPIC POWDER**

Kenji Ohmori, Shinichi Hayashi, Takashi Sato, *Ichikawa Research Laboratory, Sumitomo Metal Mining Co.,Ltd., Japan*

**EE-08 11:30 ANGULAR DEPENDENCE OF THE DEMAGNETIZATION STABILITY OF SINTERED Nd-Fe-B MAGNETS**

Matthias Katter, *Permanent Magnets, Vacuumschmelze GmbH & Co. KG, Germany*

**EE-09 11:45 HIGH-COERCIVE Nd-Fe-B SINTERED MAGNETS DIFFUSED WITH Dy OR Tb METAL AND THEIR APPLICATIONS**

Ken-ichi Machida[1], Shunji Suzuki[1], Takashi Kawasaki[1], Teruaki Kitamori[2], Kazuya Nakamura[2], Yukiharu Shimizu[2], *[1]Center for Advanced Science and Innovation, Osaka University, Japan, [2]Motor Production Group, Namiki Precision Jewels Co., Ltd., Japan*

**EE-10 12:00 COERCIVITY STUDY OF HYBRID MAGNET CONSISTING OF R-LEAN AND R-RICH PHASES**

Hae-Woong Kwon[1], George C. Hadjipanayis[2], *[1]Sch. of Mat. Sci. and Eng., Pukyong National University, Republic of Korea, [2]Dept. of Phys. and Astro., University of Delaware, United States of America*

**EE-11 12:15 MAGNETIC PROPERTIES OF EXTREMELY SMALL Nd-Fe-B SINTERED MAGNET**

Hajime Nakamura, Koichi Hirota, Takehisa Minowa, Masakatsu Honshima, *Magnetic Materials Research Center, Shin-Etsu Chemical Co., Japan*

**Apr. 7** **Room 133/134**

## Session EF
## Magnetic Sensors I

**C.G. Kim**

Chungnam National University

**EF-01 9:30 RESONANT CIRCUITS FOR HYPERTHERMIA EXICITED BY RF MAGNETIC FIELD OF MRI**

Megumi Morita[1], Takeshi Inoue[1], Tsutomu Yamada[1], Yasushi Takemura[1], Toru Niwa[2], Tomio Inoue[3], *[1]Yokohama National University, Japan, [2]Kanagawa Prefectural Cancer Center, Japan, [3]Yokohama City University, Japan*

**EF-02 9:45 HIGH SENSITIVITY INDIUM ANTIMONIDE THIN FILM MICRO-HALL SENSOR ARRAYS FOR SIMULTANEOUS MULTIPLE DETECTION OF MAGNETIC BEADS FOR BIOMEDICAL APPLICATIONS**

Kiyoshi Togawa[1], Hideaki Sanbonsugi[2], Adam Lapicki[3], Masanori Abe[2], Adarsh Sandhu[3], *[1]Dept. of Electrical and Electronics, Tokyo Institute of Technology, Japan, [2]Dept. of Physical Electronics, Tokyo Institute of Technology, Japan, [3]Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Japan*

**EF-03 CURRENT-INDUCED MAGNETIC FIELD**
**10:00 DETECTION AROUND FINE CURRENT PATHS BY MAGNETIC FORCE MICROSCOPY**

Daisuke Saida[1], Tomohiko Edura[2], Ken Tsutsui[2], Yasuo Wada[2], Takuji Takahashi[1], *[1]Institute of Industrial Science, University of Tokyo, Japan, [2]Nanotechnology Research Laboratory, Waseda University, Japan*

**EF-04 IMPROVEMENT OF MAGNETOMECHANCIAL**
**10:15 PROPERTIES OF COBALT FERRITE BY MAGNETIC ANNEAL**

Chester C. H. Lo[1], Andy P. Ring[1], John E. Snyder[2], David C. Jiles[3], *[1]Center for Nondestructive Evaluation, Iowa State University, United States of America, [2]Materials and Engineering Physics Program, Ames Laboratory, U. S. Dept. of Energy, United States of America, [3]Materials Science and Engineering Department, Iowa State University, United States of America*

**EF-05 3D FIELD RECONSTRUCTION FOR**
**10:30 NONDESTRUCTIVE DEFECT DETECTION**

Iliana Marinova[1], Valentin Mateev[1], Hisashi Endo[2], Seiji Hayano[3], Yoshifuru Saito[3], *[1]Department of Electrical Apparatus, Technical University of Sofia, Bulgaria, [2]Institute of Fluid Science, Tohoku University, Japan, [3]College of Engineering, Hosei University, Japan*

**EF-06 MAGNETOMECHANICAL EFFECTS UNDER**
**10:45 APPLIED STRESSES AND UNLOADED CONDITIONS BY A PROBE WITH INDIRECT PICKUP COIL**

Tong Liu, Hiroaki Kikuchi, Katsuyuki Ara, Yasuhiro Kamada, Masaya Sato, Seiki Takahashi, *Faculty of Engineering, Iwate University, Japan*

**EF-07 NOVEL PLANAR ELECTROMAGNETIC SENSORS**
**11:00 CHARACTERIZATION AND COMPARATIVE EVALUATION**

Chinthaka P. Gooneratne[1], Subhas C. Mukhopadhyay[1], Sotoshi Yamada[2], *[1]Massey University, New Zealand, [2]Kanazawa University, Japan*

**EF-08 MAGNETIC VECTOR FIELD SENSOR USING**
**11:15 MAGNETOELECTRIC THIN FILM COMPOSITES**

Eckhard Quandt[1], Simon Stein[1], Manfred Wuttig[2], *[1]Center of advanced european studies and research (caesar), Bonn, Germany, [2]Dept. of Material Science and Engineering, University of Maryland, College Park, MD, United States of America*

**EF-09 A HIGH PERFORMANCE ORTHOGONAL**
**11:30 FLUXGATE MAGNETOMETER BASED ON THE FUNDAMENTAL MODE OF OPERATION**

Ichiro Sasada, Takashi Usui, *Dept. Applied Science for Electronics and Materials, Kyushu University, Japan*

**EF-10 MICROFLUXGATES PERFORMANCES**
**11:45 IMPROVEMENT IN MICROTECHNOLOGY**
Helene Joisten[1], Bernard Guilhamat[2], Marcel Audoin[1], Jean-Michel Leger[2], Robert Cuchet[1], Gerard Barrois[1], Pierre Gaud[1], Didier Bloch[1], *[1]DIHS/LCFM LETI/CEA-Grenoble, France, [2]DCIS LETI/CEA-Grenoble, France*

**EF-11 HIGH SENSITIVE AND HEAT-RESISTIVE**
**12:00 MAGNETIC DISPLACEMENT SENSOR USING MAGNETOSTRICTIVE/PIEZOELECTRIC LAMINATE COMPOSITE**
Toshiyuki Ueno, Toshiro Higuchi, *Dept of Precision Machinery Eng., the Univ. of Tokyo, Japan*

**EF-12 NEW ABSOLUTE ROTOR-POSITION SENSORS FOR**
**12:15 INVERTER-DRIVEN MOTORS**
Li Zhi Sun, Jing Shang, Ji Bin Zou, *Harbin Institute of Technology, China*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session EP**

## Advanced Coding and Recording Channels

**H. Mutoh**

Fujitsu Ltd.

**EP-01 REDUCED COMPLEXITY SIGNAL DETECTION AND TURBO DECODING FOR MULTITRACK MAGNETIC RECORDING CHANNELS**
Naveen Mysore, Jan Bajcsy, *Dept. of Electrical and Computer Engineering, McGill University, Canada*

**EP-02 CITI CODE BASED ON PR1 EQUALIZED LEVEL FOR PERPENDICULAR RECORDING**
Yoshitake Kurihara[1], Mohammed Zaki Ahmed[2], Hisashi Osawa[3], Yoshihiro Okamoto[3], *[1]Niihama National College of Technology, Japan, [2]Centre for Research in Information Storage Technology, University of Plymouth, United Kingdom, [3]Faculty of Engineering, Ehime University, Japan*

**EP-03 NOISE-PREDICTIVE TURBO EQUALIZATION FOR PARTIAL-RESPONSE CHANNELS**
Sharon Aviran, Paul H. Siegel, Jack K. Wolf, *CMRR and ECE Dept., University of California, San Diego, United States of America*

**EP-04 PERFORMANCE OF BCJR-DFE BASED DETECTORS OVER RECORDING CHANNELS USING PATTERN-DEPENDENT NOISE PREDICTION**
Nitin Nangare[1], Xue Shi Yang[2], Erozan Kurtas[2], Krishna R. Narayanan[1], *[1]Dept. of Electrical Engineering, Texas A&M University, United States of America, [2]Seagate Technology, United States of America*

**EP-05 DECODING FOR MAGNETIC RECORDING MEDIA WITH OVERLAPPING TRACKS**

Naveen Singla, Joseph A. O' Sullivan, Clayton T. Miller, Ronald S. Indeck, *Department of Electrical and Systems Engineering, Washington University in St. Louis, United States of America*

**EP-06 PERFORMANCE EVALUATION OF LDPC CODES FOR PATTERNED MEDIA**

Ioannis Ntoaks[1], Paul W. Nutter[1], Barry K. Middleton[1], C. J. Tjhai[2], Mohammed Zaki Ahmed[2], *[1]School of Computer Science, The University of Manchester, United Kingdom, [2]School of Computing, Communications and Electronics, University of Plymouth, United Kingdom*

**EP-07 RATES AND EMPIRICAL PROPERTIES OF GOOD CODES FOR PARTIAL RESPONSE CHANNELS**

Shao Hua Yang, Bruce Wilson, *Hitachi Global Storage Technologies San Jose Research Center, United States of America*

**EP-08 PARTITION-AND-SHIFT LDPC CODES FOR HIGH DENSITY MAGNETIC RECORDING**

Jin Lu, Jose' Moura, *Data Storage Systems Center, Dept. of Electrical & Computer Engineering, Carnegie Mellon University, United States of America*

**EP-09 INTEGRATED INTERLEAVING ECC AND HIGH DIMENSIONAL PARITY CODES**

Hiroshi Kamabe, Hironori Katou, *Dept. of Information Science, Gifu University, Japan*

**EP-10 UNIFORM LATIN SQUARE INTERLEAVING FOR CORRECTING TWO-DIMENSIONAL BURST ERRORS**

Keitarou Kondou, Makoto Noda, *Core Technology Development Group, Micro Systems Network Company, Sony Corporation, Japan*

**EP-11 DETECTION OF MEDIA DEFECTS IN PERPENDICULAR RECORDING**

Wei Jun Tan[1], J. R. Cruz[2], *[1]Storage Division, Agere Systems, United States of America, [2]The University of Oklahoma, School of Electrical and Computer Engineering, United States of America*

**EP-12 ON LDPC CODES SATISFYING THE (0, k) CONSTRAINT**

Sharareh Babvey[1], Steven W. McLaughlin[2], *[1]Dept. of Compute Science, Georgia State University, United States of America, [2]School of Electrical and Computer engineering, Georgia Institute of Technology, United States of America*

**EP-13 A STUDY OF OBSERVATION OF NOISE RELATED TO DECISION ERROR IN PRML SYSTEM**

Yoshihiro Okamoto[1], Yasuaki Nakamura[1], Hisashi Osawa[1], Hiroaki Muraoka[2], Yoshihisa Nakamura[2], *[1]Faculty of Engineering, Ehime University, Japan, [2]Research Institute of Electrical Communication, Tohoku University, Japan*

**EP-14 ON A METHOD FOR CHARACTERIZING READ SENSOR NONLINEARITY USING READ-BACK SIGNALS**

Bruce A. Wilson, *Hitachi Global Storage Technologies, United States of America*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session EQ**

## Current Induced Switching II

**S. Nakamura**

Corporate R&D center, Toshiba Corporation

**EQ-01 CURRENT INDUCED OSCILLATION OF A SINGLE MAGNETIC DOMAIN WALL**

Eiji Saitoh[1], Mitsunaga Nozue[1], Hideki Miyajima[1], Takehiro Yamaoka[2], *[1]Dept. of Phys. Keio Univ., Hiyoshi, Yokohama,, Japan, [2]SII NanoTechnology, Inc, Japan*

**EQ-02 CRITICAL PARAMETERS FOR CURRENT-INDUCED DOMAIN WALL MOTION**

Mathias Klaeui[1], Pierre-Olivier Jubert[2], Rolf Allenspach[2], Carlos Vaz[3], Giancarlo Faini[4], Laurent Vila[4], Ulrich Ruediger[1], *[1]FB Physik, Universitaet Konstanz, Germany, [2]IBM Research, Zurich Research Laboratory, Switzerland, [3]Cavendish Laboratory, University of Cambridge, United Kingdom, [4]LPN-CNRS, France*

**EQ-03 CURRENT DRIVEN DOMAIN WALL STUDY IN U-SHAPE PERMALLOY WIRE**

Jai-Lin Tsai[1], K-W Lin[1], Y-D Yao[2], S-F Lee[2], Y Liou[2], *[1]Department of Materials Engineering, National Chung Hsing University, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan*

**EQ-04 DOMAIN WALL MAGNETORESISTANCE IN PERMALLOY HALF-RING WIRES**

C. Yu[1], S. F. Lee[1], E. W. Huang[1], K. W. Cheng[1], D. C. Chen[1], Y. Liou[1], Y. D. Yao[1], C. R.Chang[2], *[1]Institute of Physics, Academia Sinica, Taiwan, [2]Dept. of Physics, National Taiwan University, Taiwan*

**EQ-05 CURRENT INDUCED MAGNETIZATION SWITCHING IN MAGNETIC TUNNEL JUNCTION WITH MgO (001) TUNNEL BARRIER**

Hitoshi Kubota[1], Akio Fukushima[1], Yuichi Ootani[2], Shinji Yuasa[1], Koji Ando[1], Hiroki Maehara[3], Koji Tsunekawa[3], David D. Djayaprawira[3], Naoki Watanabe[3], Yoshishige Suzuki[4], *[1]National Institute of Advanced Industrial Science and Technology (AIST), Japan, [2]Toho University, Japan, [3]Anelva Corporation, Japan, [4]Graduate School of Engineering Science, Osaka University, Japan*

**EQ-06 REDUCTION OF THE SWITCHING SPEED IN CURRENT-INDUCED MAGNETIZATION REVERSAL DUE TO DOMAIN STATES ON APPLYING NANO-SECOND CURRENT PULSES**

Yoshishige Suzuki[1], Ashwin Tulapurkar[2], Kojiro Yagami[3], Akio Fukushima[2], Thibaut Devolder[4], P Crozat[4], Claude Chappert[4], Shinji Yuasa[2], *[1]Graduate School of Engineering Science, Osaka University, Japan, [2]National Institute of Advanced Industrial Science and Technology (AIST), Japan, [3]SSNC, Semiconductor Technology Development Group, SONY Corp., Japan, [4]Institut d'Electronique Fondamentale, CNRS UMR 8622, Batiment 220, Universite Paris Sud, France*

**EQ-07 ANALYTICAL INVESTIGATION OF SPIN TRANSFER DYNAMICS USING A PERPENDICULAR-TO-PLANE POLARIZER**

Kyung-Jin Lee, Olivier Redon, Bernard Dieny, *SPINTEC, URA CEA-CNRS, France*

**EQ-08 TUNNELING CURRENT-INDUCED BUTTERFLY-SHAPED DOMAINS AND MAGNETIZATION SWITCHING IN DOUBLE-BARRIER MAGNETIC TUNNEL JUNCTIONS**

Sufen[1], Jing Zhao[1], Zhong Ming Zeng[1], Xiu Feng Han[1], Yasuo Ando[2], Terunobu[2], *[1]State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, China, [2]Dept. of Appl. Phys., Graduate School of Engineering, Tohoku University, Japan, Japan*

**EQ-09 MICROMAGNETIC SIMULATION ON DYNAMICS OF SPIN TRANSFER TORQUE MAGNETIZATION REVERSAL**

Kenchi Ito, *Hitachi Cambridge Laboratory, Hitachi Europe, Ltd., United Kingdom*

**8:30-12:00** **Session ER**

## Nanocrystalline and Other Materials III

**Y. Kitamoto**
Tokyo Institute of Technology

**ER-01 FABRICATION AND STUDY OF $Ni_{75}Fe_{25}$-$SiO_2$ GRANULAR FILMS FOR HIGH FREQUENCY APPLICATION**

Shi Hui Ge[1], Xiao Lin Yang[1], Kwang Youn Kim[2], Li Xi[1], Xiao Ming Kou[1], Dongsheng Yao[1], Binsheng Li[1], Xinwei Wang[1], *[1]Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, China, [2]Advanced Metals Research Center, Korea Institute of Science and Technology, Republic of Korea*

**ER-02 THE MAGNETOCALORIC EFFECT IN AMORPHOUS $Fe_{80-x}Mn_xZr_{10}$ (x=4,6,8,10) ALLOYS**

Seong-Gi Min[1], Kyeong-Sup Kim[1], Seong-Cho Yu[2], Veeturi Srinivas[2], *[1]Dept. of Physics, Chungbuk Nat'l University, Republic of Korea, [2]Dept. of Physics, Indian Institute of Technology, India*

**ER-03 RESISTIVITY AND CORE SIZE DEPENDENCIES OF EDDY CURRENT LOSS FOR Fe-Si COMPRESSED CORES**

Takanobu Saito, Satoshi Takemoto, Takahiko Iriyama, *R&D Lab, Daido Steel Co.,Ltd, Japan*

**ER-04 ANNEALING CONDITIONS AND HIGH MAGNETIC INDUCTION IN THIN-GAUGED 3% Si-Fe ALLOY STRIPS**

Sang Beom Kim[1], Kyung Min Park[1], Seong Soo Cho[1], Dong Il Lee[2], Nam Hoe Heo[1], *[1]Advanced Technology Center, Korea Electric Power Research Institute, Republic of Korea, [2]Power Transmission Technology Group, Korea Electric Power Research Institute, Republic of Korea*

**ER-05 FeHfN AND FeHfNO SOFT MAGNETIC FILMS FOR RF APPLICATIONS**

Sandrine Couderc[1], Bernard Viala[2], Pascal Ancey[1], Guillaume Bouche[1], *[1]STMicroelectronics, France, [2]CEA-DRT-Leti, Grenoble, France*

**ER-06 MAGNETIC PROPERTIES OF $Fe_3O_4$ NANOSTRUCTURES**

Seung Pil Ko, Joon-Young Soh, Young Keun Kim, *Division of Materials Science and Engineering, Korea University, Republic of Korea*

**ER-07 2-D MAGNETIC ROTATIONAL LOSS OF ELECTRICAL STEEL AT HIGH MAGNETIC FLUX DENSITY**

Keishiro Mori, Shunji Yanase, Yasuo Okazaki, Shuichiro Hashi, *Dept. of Electrical & Electronics, Gifu University, Japan*

**ER-08 TRANSPORT AND MAGNETIC PROPERTIES OF ENCAPSULATED Ni-NiO/$ZrO_2$ NANOSTRUCTURES**

Bibhuti B. Nayak[1], Satish Vitta[1], A. K. Nigam[2], D. Bahadur[1], *[1]Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, India, [2]Department of Condensed Matter Physics & Materials Science, Tata Institute of Fundamental Research Mumbai, India,*

**ER-09 MAGNETIC PROPERTIES OF COBALT NANO DOTS FABRICATED BY A NEW LASER IRRADIATION METHOD: ENHANCED ANISOTROPY AND SUPERPARAMAGNETISM**

Jung Yup Yang, Kap Soo Yoon, Young Ho Do, Jong Hyun Lee, Chae Ok Kim, Jin Pyo Hong, *Dept. of Physics, Hanyang Univesity, Republic of Korea*

**ER-10 AN ITERATIVE METHOD TO OBTAIN NON-UNIFORM FIELD DISTRIBUTION IN MAGNETIC SUBSTRATES**

Ali Reza V. Farahani, Adalbert Konrad, *Dept. of E.C.E., University of Toronto, Canada*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session ES**

## Clusters and Particles III

**J.P. Wang**

University of Minnesota

**ES-01 SYNTHESIS AND MAGNETIC CHARACTERIZATION OF $ZnFe_2O_4$ NANOSTRUCTURES IN AAO TEMPLATE**

Jin-Seung Jung[1], Y.-K. Jung[1], E.-M. Kim[1], S.-H. Min[2], J.-H. Jun[3], Leszek Malkinski[4], Yuri Barnakov[4], L. Spinu[4], *[1]Department of Chemistry, Kangnung National University, Republic of Korea, [2]Department of Metal and Materials Engineering, Kangnung National University, Republic of Korea, [3]Department of Applied Chemistry, Konkuk University, Republic of Korea, [4]Advanced Materials Research Institute, University of New Orleans, United States of America*

**ES-02 SYNTHESIS AND CHARACTERIZATION OF CORE-SHELL Ag@$Fe_3O_4$ NANOPARTICLES**

Chih-Huang Lai, Tsung-Feng Wu, *Dept of Materials Science and Engineering, National Tsing Hua University, Taiwan*

**ES-03 INTERGRANULAR TUNNELING MAGNETORESISTANCE OF MECHANICALLY ALLOYED (Cr-M)$O_2$ POWDER COMPACTS**

Masakiyo Tsunoda[1], Tetsuya Sato[1], Qi Wu Zhang[2], Balachandran Jeyadevan[3], Migaku Takahashi[4], *[1]Dept. of Electronic Engineering, Tohoku Univeristy, Japan, [2]Institute of Multidisciolinary Research for Advanced Materials, Tohoku University, Japan, [3]Graduate School of Environmental Studies, Tohoku University, Japan, [4]New Industry Creation Hatchery Center, Tohoku University, Japan*

**ES-04 SUPERPARAMAGNETIC BEHAVIOUR OF ANTIFERROMAGNETIC CuO NANOPARTICLES**

Narsinga Rao Gade[1], Y. D. Yao[1], J. W. Chen[2], *[1]Institute of Physics, Academia Sinica, Taiwan, [2]Department of Physics, National Taiwan University, Taiwan*

**ES-05 FERROMAGNETIC, TRANSPARENT AND CONDUCTING ITO-Fe-CLUSTER COMPOSITE FILMS**

Dong Liang Peng, Kenji Sumiyama, Noriyuki Nozawa, Takehiko Hihara, *Department of Materials Science and Engineering, Nagoya Institute of Technology, Japan*

**ES-06 PERCOLATION THRESHOLD AND TUNNELING MAGNETORESISTANCE IN Ag/Ni NANOCOMPACTS**

S. Y. Wu, M. T. Liao, P. J. Huang, F. C. Tsao, M. K. Chung, C. C. Yang, W. -H. Li, *Dep. of Physics, National Central University, Taiwan*

**ES-07 FABRICATION OF Fe-Ce-O GRANULAR FILMS BY METAL-OXIDE CO-ELECTRODEPOSITION**

Naoyuki Fujita[1], Masanobu Izaki[2], Mitsuteru Inoue[3], *[1]Dept. of Electrical Engineering, Nara National College of Technology, Japan, [2]Osaka Municipal Technical Research Institute, Japan, [3]Dept. of Erectrical and Electronic Engineering, Toyohashi University of Technology, Japan*

**ES-08 MAGNETISM OF $Fe@C_{20}$, $Fe@C_{20}H_{20}$, AND $Fe_2@C_{30}$**

Chulsu Jo, Jae Il Lee, *Dept. of Physics, Inha University, Republic of Korea*

**ES-09 MAGNETIC PROPERTIES OF CoSi CLUSTERS**

Chulsu Jo[1], Dong Chul Kim[2], Jae Il Lee[1], *[1]Dept. of Physics, Inha University, Republic of Korea, [2]School of Electrical Engineering, Halla University, Republic of Korea*

**8:30-12:00** **Session ET**

## Inductors and Transformers

**S. Okanuma**
Fukushima University

**M. Duffy**
National University of Ireland

**ET-01 OPTIMIZATION ALGORITHM FOR TRANSFORMER ADMITTANCE CURVES**

Edvin Shehu[1], Adalbert Konrad[1], Luis Marti[2], *[1]Dept. of E.C.E., University of Toronto, Canada, [2]Hydro One Networks Inc., Canada*

**ET-02 AN IMPROVED METHOD FOR VIRTUAL AIR GAP LENGTH COMPUTATION**

Adalbert Konrad[1], Jean F. Brudny[2], *[1]Dept. of E.C.E., University of Toronto, Canada, [2]Elec. Eng. Dept., University of Artois, France*

**ET-03 EVALUATION OF HEAT CONDUCTIVITY OF THERMOSENSITIVE FERRITE AS TEMPERATURE DEPENDENCE DEVICE**

Yasuyuki Kakubari[1], Fumihiro Sato[1], Hidetoshi Matsuki[1], Tadakuni Sato[2], *[1]Graduate School of Engineering, Tohoku University, Japan, [2]NEC Tokin Corporation, Japan*

**ET-04 CURRENT CONTROLLABILITY OF THE LOW-VOLTAGE 10 kA INVERTER POWERS SOURCE**

Yoshiaki Takasaki[1], Toshikatsu Sonoda[2], *[1]College of Computer Engineering, Fukuoka Institute of Technology, Japan, [2]School of Humanity-Oriented Science and Engineering, Kinki University, Japan*

**ET-05 IMPROVEMENT OF ZONE CONTROL INDUCTION HEATING EQUIPMENT FOR HIGH-SPEED PROCESSING OF SEMICONDUCTOR**

Daisuke Miyagi[1], Aisha Saitoh[1], Norio Takahashi[1], Naoki Uchida[2], Kazuhiro Ozaki[2], *[1]Dept. of Electrical and Electronic Eng., Okayama University, Japan, [2]Advanced machinery and Systems Dept. Mitsui Engineering & Shipbuilding Co., Ltd., Japan*

**ET-06 THREE-DIMENTIONAL RELUCTANCE NETWORK ANALYSIS CONSIDERING AN IRON LOSS CHARACTERISTIC FOR AN EIE-CORE VARIABLE INDUCTOR**

Kenji Nakamura[1], Shuichi Hayakawa[1], Sigeaki Akatsuka[2], Takashi Ohinata[2], Kazuo Minazawa[2], Osamu Ichinokura[1], *[1]Graduate School of Engineering, Tohoku University, Japan, [2]Tohoku Electric Power Co., Inc., Japan*

**ET-07 WINDING LOSS MECHANISM ANALYSIS AND THE DESIGN FOR A NEW STRUCTURE HIGH-FREQUENCY GAPPED INDUCTOR**

Xing Kui Mao[1], Wei Chen[2], *[1]College of Electrical Engineering & Automation, Fuzhou University, China, [2]Delta Power Electronics Center, Shanghai, China*

**ET-08 EVALUATION OF EXPERIMENTAL METHODS FOR DETERMINING MAGNETICALLY NONLINEAR CHARACTERISTICS OF ELECTROMAGNETIC DEVICES**

Gorazd Stumberger, Mostjan Polajzer, Bojan Stumberger, Matej Toman, Drago Dolinar, *Faculty of Electrical Engineering and Computer Science, University of Maribor, Slovenia*

**ET-09 DESIGNING OF SUITABLE CONSTRUCTION OF HIGH-FREQUENCY INDUCTION HEATING COIL BY USING FINITE ELEMENT METHOD**

Alexander K. Boadi, Hiroyasu Shimoji, Takashi Todaka, Masato Enokizono, *Department of electrical and electronic engineering, Oita university, Japan*

**ET-10 INFLUENCE OF HYSTERETIC BEHAVIOUR IN FERRORESONANT LCR CIRCUITS**

Oriano Bottauscio[1], Mario Chiampi[2], *[1]IEN Galileo Ferraris, Torino, Italy, [2]Dept. Ingegneria Elettrica, Politecnico di Torino, Italy*

**ET-11 COMBINED SYSTEM OF AC AND DC ELECTROMAGNETIC FIELD FOR STABILIZED FLOW IN CONTINUOUS CASTING**

Ryu Hirayama, Keisuke Fujisaki, *Environment & Process Technology Center, Nippon Steel Corporation, Japan*

**ET-12 INTEGRATED DESIGN FOR A HIGH SPEED PERMANENT MAGNET AXIAL FLUX GENERATOR**

Patrick C.K. Luk[1], Tareq S. El-Hasan[2], *[1]Dept. of Aerospace, Power and Sensors, United Kingdom, [2]KADDB, Jordan*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session EU**

## Integrated Passives and Devices II

**M. Yamaguchi**

Tohoku University

**Y. Zhuang**

HiTeC-Dimes, Delft University of Technology

**EU-01 DESIGN OF INDUCTOR OPERATING IN GHz RANGES**

Minsoo Choi, Joohyun Hong, Jong-Ryoul Kim, *Dept. of Material Engineering Science, Hanyang University, Republic of Korea*

**EU-02 INVESTIGATION OF ANOMALOUS LOSSES IN FERROMAGNETIC SPIRAL INDUCTORS USING THICK COPPER TECHNOLOGY**

Bernard Viala[1], Anne Sophie Royet[1], Sandrine Couderc[2], *[1]CEA-DRT-LETI Grenoble France, France, [2]STMicroelectronics Crolles France, France*

**EU-03 RF INTEGRATED INDUCTORS WITH VARIOUS SLIT PATTERNS USING CoFeBN SOFT MAGNETIC FILM**

Masahiro Yamaguchi[1], Ki Hyeon Kim[1], Takashi Kuribara[1], Tadahiro Fukushima[1], Inyoung Kim[2], Jongryoul Kim[2], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]Metallurgy and Materials Engineering Department, Hanyang University, Republic of Korea*

**EU-04 ON A TRANSMISSION LINE WITH PERIODICALLY LOADED GYRATOR**

Kensuke Okubo[1], Makoto Tsutsumi[2], *[1]Dept. of Communication Engineering, Okayama Prefectural University, Japan, [2]Faculty of Engineering, Fukui University of Technology, Japan*

**EU-05 AN INTEGRATED LTCC INDUCTOR**

Hee-Jun Kim[1], Chan-Young Kim[1], Jong-Ryoul Kim[2], *[1]School of Electrical and Computer Eng., Republic of Korea, [2]Department of Metallurgical and Materials Eng., Republic of Korea*

**EU-06 A THIN FILM SPIRAL MICROSTRIP TRANSMISSION-LINE USING CoZrNb SOFT MAGNETIC THIN FILM FOR A QUARTER WAVELENGTH TRANSFORMER**

Hirotaka Suzuki[1], Namie Sugiyama[1], Toshiro Sato[1], Kiyohito Yamasawa[1], Yoshimasa Miura[1], Yuko Miyake[2], Masanori Akie[2], Yuji Uehara[2], *[1]Faculty of Engineering, Shinshu University, Japan, [2]Fujitsu Ltd., Japan*

**EU-07 A COPLANAR-COUPLED-LINE COMMON-MODE FILTER USING CoZrNb SOFT MAGNETIC THIN FILM FOR GHz FREQUENCY BAND**

Yuuki Sudo[1], Katsuhiko Watanabe[1], Toshiro Sato[1], Kiyohito Yamasawa[1], Yoshimasa Miura[1], Yuko Miyake[2], Masanori Akie[2], Yuji Uehara[2], *[1]Faculty of Engineering, Shinshu University, Japan, [2]Fujitsu Ltd., Japan*

**EU-08 CONTROLLING ELECTROMAGNETIC WAVE ABSORPTION CHARACTERISTICS BY CHANGING MAGNETIC POWDER MIXING RATIOS FOR POWDER-TYPE MAGNETIC WOOD**

Hideo Oka[1], Minekazu Terui[1], Hiroshi Osada[1], Fukumori Izumida[2], Yasuji Namizaki[2], *[1]Dept. of Electrical & Electronic Engineering, Iwate University, Japan, [2]Iwate Industrial Research Institute, Japan*

**EU-09 CONDUCTION NOISE ATTENUATION BY IRON PARTICLES-RUBBER COMPOSITES ATTACHED ON MICROSTRIP LINES**

Sun-Tae Kim[1], Han-Sin Cho[2], Sung-Soo Kim[1], *[1]Department of Materials Engineering, Chungbuk National University, Republic of Korea, [2]Ja Wha Electronics Cooperation, Republic of Korea*

**EU-10 GHz RANGE ABSORPTION PROPERTIES OF α-Fe/$Y_2O_3$, FeCo/$Y_2O_3$ AND α-Fe/$Fe_3B$/$Y_2O_3$ NANOCOMPOSITES**

Ken-ichi Machida[1], Jiu Rong Liu[1], Masahiro Itoh[1], *[1]Center for Advanced Science and Innovation, Osaka University, Japan*

**EU-11 OPERATING MECHANISM OF RF ELECTROMAGNETIC NOISE SUPPRESSION SHEETS**

Kaori Maruta[1], Masahiro Yamaguchi[1], Hiroshi Ono[2], *[1]Tohoku University, Japan, [2]NEC Tokin Co., Japan*

**EU-12 NOISE SUPPRESSOR BY USING NANOGRANULAR Co-Fe-Al-O MULTILAYER FILM WITH DIFFERENT THICKNESS**

Jae Cheon Sohn[1], Dong Jin Byun[1], Sang Ho Lim[1], Suk Hee Han[2], Masahiro Yamaguchi[3], *[1]Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea, [2]Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea, [3]Electrical and Communication Engineering, Tohoku University, Sendai, Japan*

**EU-13 A FABRICATION OF DC-DC CONVERTER USING LTCC NiZnCu FERRITE THICK FILMS**

Ki Woong Moon[1], Seung Hee Hong[1], Hee Jun Kim[2], Jongryoul Kim[1], *[1]Dept. of Materials Engineering Science, Republic of Korea, [2]School of Electrical and Computer Engineering, Republic of Korea*

**EU-14 A WIDEBAND COMMON-MODE NOISE FILTER WITH A Mn-Zn FERRITE AND Cu/POLYIMIDE TAPE WOUND COIL FOR SWITCHING POWER SUPPLIES USED IN ELECTRONIC MEASURING INSTRUMENTS**

Koichi Yanagisawa[1], Fuchon Zhang[1], Toshiro Sato[2], Kiyohito Yamasawa[2], Yoshimasa Miura[2], *[1]R&D Dept., HIOKI Electric Corp., Japan, [2]Faculty of Engineering, Shinshu University, Japan*

**EU-15 4-PORT PACKAGE ANALYSIS AND MEASUREMENTS INCLUDING INDUCTIVE AND CAPACITIVE COUPLING BETWEEN LINES AT GHz FREQUENCIES**

Adalbert Konrad[1], Shinji Tanabe[2], Junichi Abe[2], *[1]University of Toronto, Canada, [2]Mitsubishi Electric Corporation, Japan*

**EU-16 TUNABLE WIDEBAND MICROWAVE BAND-STOP AND BAND-PASS FILTERS USING YIG/GGG-GaAs LAYER STRUCTURES**

Chen S. Tsai[1], G. Qiu[1], H. Gao[1], L.W. Yang[2], G.P. Li[1], S.A. Nikitov[3], *[1]Dept. of Elec. Eng.& Comp Sci., University of California, Irvine, United States of America, [2]Trans RF Corp., United States of America, [3]Radioengineering and Electronics Inst., Russian Academy of Sciences, Russian Federation*

**EU-17 AN EFFICIENT NONLINEAR FREQUENCY MULTIPLICATION MECHANISM IN FERRITE LOADED WAVEGUIDE STRUCTURES**

Martha Pardavi-Horvath[1], Galina S. Makeeva[2], Oleg A. Golovanov[3], *[1]Department of Electrical and Computer Engineering, The George Washington University, United States of America, [2]Penza State University, Russian Rederation, [3]Penza Military Institute of Artillery, Russian Federation*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session EV**

## Biomagnetism and Applications I

**K. Iramina**

University of Tokyo

**EV-01 THE REJECTION OF MAGNETIC NOISE FROM THE WIRE USING INDEPENDENT COMPONENT ANALYSIS FOR MAGNETOCARDIOGRAM**

Koichiro Kobayashi[1], Yoshinori Uchikawa[2], Takayuki Simizu[3], Kenji Nakai[4], Masato Yoshizawa[3], *[1]Dept. of Welfare Engineering, Iwate University, Japan, [2]Dept. of Electronics and Computer Engneering, Tokyo Denki University, Japan, [3]Laboratory Medicine, Iwate Medical University, Japan, [4]Frontier Materials and Functional Engineering, Iwate University, Japan*

**EV-02 COMPARISON OF CURRENT DISTRIBUTION BASED ON TISSUE IN-HOMOGENEITY IN MAGNETIC STIMULATION FOR TREATMENT OF URINARY INCONTINENCE**

Masato Odagaki, Kazutaka Suga, Tadashi Sasaki, Hidehiro Hosaka, *Graduate shchool of Science and Engineering, Tokyo Denki University, Japan*

**EV-03 QUANTITATIVE MEASUREMENT OF CREATINE CONTENT IN SKELETAL MUSCLE USING 1H-MRS**

Takako Saotome[1], Masaki Sekino[1], Fumio Eto[2], Shoogo Ueno[1], *[1]Department of Biomedical Engineering , Graduate School of Medicine, University of Tokyo, Japan, [2]Department of Rehabilitation Medicine, Graduate School of Medicine, University of Tokyo, Japan*

**EV-04 STRESS FIBER CONTRIBUTES TO RAT SCHWANN CELL ORIENTATION UNDER MAGNETIC FIELD**

Yawara Eguchi, Shoogo Ueno, *Dept. of Biomedical Engineering, Univ. of Tokyo, Japan*

**EV-05 MAPPING OF STRAIN IN BIOLOGICAL TISSUES USING MAGNETIC RESONANCE**

Masaki Sekino, Akihisa Kaneko, Shoogo Ueno, *Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*

**EV-06 SHORT-TERM EPISODIC MEMORY ENCODING IN THE HUMAN BRAIN: A MAGNETOENCEPHALOGRAPHY AND ELECTROENCEPHALOGRAPHY STUDY.**

Klevest Gjini, Takashi Maeno, Keiji Iramina, Shoogo Ueno, *Dept. of Biomedical Engineering, University of Tokyo, Japan*

**EV-07 THE CURRENT SOURCE ESTIMATION OF THE EVENT RELATED FIELD DERIVED FROM VISUAL ATTENTION TO THE HEMI-SPACE.**

Takashi Maeno[1], Klevest Gjini[1], Keiji Iramina[1], Fumio Eto[2], Shoogo Ueno[1], *[1]Dept. of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan, [2]Dept. of Rehabilitation, University of Tokyo Hospital, Japan*

**EV-08 MEASUREMNT OF AUDITORY EVOKED MAGNETIC FIELED OF MICE WITH HIGH SPATIAL RESOLUTION**

Keiji Iramina, Shoogo Ueno, *Dept. of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan*

**EV-09 BIODISTRIBUTION OF CHITOSAN BASED NANO MAGNETITE SUSPENSION FOR TARGETED HYPERTHERMIA**

Dong-Hyun Kim[1], Se Ho Lee[1], Kwang-Mahn Kim[1], Kyoung-Nam Kim[1], In-Bo Shim[2], Yong-Keun Lee[1], *[1]Brain Korea 21 Project for Medical Science, Yonsei University, Republic of Korea, [2]Department of Electronic Physics, Kookmin University, Republic of Korea*

**EV-10 THERMOTHERAPY WITH METALLIC STENT DEPEND ON EXTERNAL EXCITATION**

Hodaka Shoji[1], Yoshihiro Ozu[1], Fumihiro Sato[1], Hidetoshi Matsuki[1], Yoshihiro Nihei[2], Yoshimochi Kurokawa[2], Tadakuni Sato[3], *[1]Graduate School of Engng., Tohoku Univ., Japan, [2]Graduate School of Medicine, Tohoku Univ., Japan, [3]NEC Tokin Corporation, Japan*

**EV-11 THE EXAMINATION OF THE EXCITATION CONDITION FOR THE HIGH TEMPERATURE MAGNETIC HYPERTHERMIA**

Yukiko Sawaya[1], Nobutake Suzuki[1], Fumihiro Sato[1], Hidetoshi Matsuki[1], Tadakuni Sato[2], *[1]Graduate School of Tohoku University, Japan, [2]NEC Tokin Corporation, Japan*

**EV-12 EXAMINATION OF CIRCUIT PARAMETER FOR STABLE HIGH EFFICIENCY TETS FOR THE ARTIFICIAL HEARTS**

Shinsuke Arai[1], Hidekazu Miura[1], Fumihiro Satou[1], Hidetoshi Matsuki[1], Tadakuni Sato[2], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]NEC Tokin Corporation, Japan*

**EV-13 BASIC EVALUATION OF SIGNAL TRANSMISSION COIL IN TRANSCUTANEOUS MAGNETIC TELEMETRY SYSTEM FOR ARTIFICIAL HEART**

Tetsuya Takura[1], Hirokazu Ishiai[1], Fumihiro Sato[1], Hidetoshi Matsuki[1], Tadakuni Sato[2], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]NEC Tokin Corporation, Japan*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session EW**

## Biomagnetism and Applications II

**K. Tsukada**

Okayama University

**EW-01 EVALUATE DAMAGE IN DNA MOLECULES RESULTING BY VERY-LOW-FREQUENCY MAGNETIC FIELDS USING BACTERIAL GENE EXPRESSION SYSTEM FOR MUTATION REPAIRING SYSTEM**

Akira Igarashi[1], Koichiro Kobayashi[1], Hidetoshi Matsuki[2], Ginro Endo[3], Akira Haga[3], *[1]Faculty of Engineering, Iwate University, Japan, [2]Graduate School of Engineering, Tohoku University, Japan, [3]Faculty of Engineering, Tohoku Gakuin University, Japan*

**EW-02 EFFECTS ON BACTERIAL CELLS BY EXPOSURE TO VLF MAGNETIC FIELDS**

Makiko Kakikawa[1], Satoshi Tachi[1], Shoushin Hashimoto[2], Masayoshi Iwahara[1], Sotoshi Yamada[2], *[1]Graduate School of Natural Science and Technology, Kanazawa University, Japan, [2]Institute of Nature and Environmental Technology, Kanazawa University, Japan*

**EW-03 EFFECTS OF MAGNETIC STIMULATION ON TUMORS AND IMMUNE FUNCTIONS**

Sachiko Yamaguchi, Mari Ogiue-Ikeda, Masaki Sekino, Shoogo Ueno, *Department of Biomedical Engineering, Graduate School of Medicine, Univesity of Tokyo, Japan*

**EW-04 FIREFLY LUCIFERIN-LUCIFERASE LUMINESCENCE BY MILLIGAUSS ULTRA-LOW FREQUENCY PULSED MAGNETIC FIELD APPLIED PURE WATER WIHTOUT ATP**

Masanori Fukushima[1], Takuji Kataoka[2], Norikazu Sugiyama[2], Kaneo Mohri[3], *[1]Translational Research Center, Kyoto University Hospital, Japan, [2]System Division, Hamamatsu Photonics K.K., Japan, [3]Graduate School of Electronics, Nagoya University, Japan*

**EW-05 POWER DEPOSTION INSIDE A PHANTOM FOR TESTING OF MRI HEATING**

Arslan Amjad, R. Kamondetdacha, Alexander Kildishev, Sung-Min Park, John Nyenhuis, *School of Electrical and Computer Engineering, Purdue University, United States of America*

**EW-06 THE EFFECTS OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION ON THE INJURED NEURONS IN RATS**

Hirofumi Funamizu[1], Mari Ogiue-Ikeda[1], Suguru Kawato[2], Shoogo Ueno[1], *[1]Dep. of Bio. Eng., Tokyo Univ., Japan, [2]Dep. of Bio. Phy., Tokyo Univ., Japan*

**EW-07 MEASUREMENTS OF THE SPIN-SPIN RELAXATION TIME AND THE DEGREE OF ORIENTATION OF MAGNETICALLY ORIENTED COLLAGEN GELS**

Michihiro Takeuchi[1], Masaki Sekino[1], Norio Iriguchi[2], Shoogo Ueno[1], *[1]Department of Biomedical Engineering Graduate School of Medicine University of Tokyo, Japan, [2]Center for Multimedia and Information Technologies University of Kumamoto, Japan*

**EW-08 AUTOMATIC COMPENSATION OF EARTH MAGNETIC FIELD AND CALIBRATION SYSTEM OF MAGNETOMETERS BELOW 1 mT**

Po Gyu Park[1], V. Ya. Shifrin[2], Young Gyun Kim[1], Mun-Seog Kim[1], Kyu-Tae Kim[1], *[1]Electromagnetic Metrology, Korean Research Institute of Standards and Science (KRISS), Republic of Korea, [2]Magnetic Measurements, Mendeleyev Institute for Metrology (VNIIM), Russian Federation*

**EW-09 DEVELOPMENT OF REALTIME AND HIGHLY ACCURATE WIRELESS MOTION CAPTURE SYSTEM UTILIZING SOFT FERRITE MAGNETIC CORE**

Shuichiro Hashi[1], Yuuki Tokunaga[1], Shin Yabukami[2], Masaharu Toyoda[1], Kazushi Ishiyama[2], Yasuo Okazaki[1], Ken-ichi Arai[2], *[1]Dept. of Materials Science & Technology, Gifu University, Japan, [2]Research Institute of Electrical Communication, Tohoku University, Japan*

**EW-10 A NOVEL PORTABLE MATERIAL CHARACTERIZATION SYSTEM USING AC MAGNETIZATION PROBE**

Hisashi Endo[1], Mitsuharu Shiwa[2], Toshihiko Abe[1], Tetsuya Uchimoto[1], Toshiyuki Takagi[1], *[1]Institute of Fluid Science, Tohoku University, Japan, [2]JAPEIC, Japan*

**EW-11 ANALYTICAL APPROACH FOR FAST COMPUTATION OF MAGNETIC FLUX LEAKAGE DUE TO SURFACE DEFECTS**

Yevgen Melikhov, Seong-Jae Lee, David C. Jiles, Rick Lopez[1], Lisa Brasche, *Center for Aviation Systems Reliability, Iowa State University, United States of America*

**EW-12 MAGNETIC CHARACTERISTICS OF ARCHITECTURAL MATERIALS FOR NON-MAGNETIC BUILDINGS**

Kazuo Kato[1], Keita Yamazaki[1], Koichiro Kobayashi[2], Akihiko Chiba[2], *[1]Research and Development Institute, Takenaka Corporation, Japan, [2]Dept. of Welfare Engineering, Iwate University, Japan*

**EW-13 GENERATION AND CONFINEMENT OF UNIFORM MAGNETIC FIELDS WITH DISTRIBUTIONS OF SURFACE CURRENTS**

Manlio G. Abele, *New York University, United States of America*

**Apr. 7** **Event Hall**

**8:30-12:00** **Session EX**

**Domains & Interdisciplinary Topics**

**H. Miyajima**

Keio University

**EX-01 BULK DOMAIN ANALYSIS IN IRON (111) CRYSTALS**

Rudolf Schaefer, Sabine Schinnerling, *Inst. for Metallic Materials, IFW Dresden, Germany*

**EX-02 DOMAIN EVOLUTION IN PERMALLOY STRUCTURES UNDER THE INFLUENCE OF MAGNETIC FIELD BY CURRENT APPLICATION**

Vivian Ng, Kyaw Oo Aung, Adekunle Olusola Adeyeye, *Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore*

**EX-03 SURFACE MAGNETIC RIPPLES INDUCED BY A LOCAL STRAY FIELD FROM A SCANNING MAGNETIC TIP**

Hsin-I Wu[1], Ji-Shiuan Chen[1], Yaun-Ron Ma[1], Yuang Liou[2], Yeong-Der Yao[2], *[1]Dept. Physics, National Dong Hwa University, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan*

**EX-04 LOW-FFIELD MAGNETIC EFFECT IN $Pr_{1-x}Pb_xMnO_3$ (0.1<x<0.5) PEROVSKITES**

Manh-Huong Phan[1], Seong-Cho Yu[2], Nguyen Duc Tho[3], Nguyen Chau[3], *[1]Department of Aerospace Engineering, Bristol University, United Kingdom, [2]Department of Physics, Chungbuk National University, Republic of Korea, [3]Center for Materials Science, National University of Hanoi, Hanoi, Viet Nam*

**EX-05 A NEW SIMULTANEOUS METHOD OF HALL AND MAGENETORESISTANCE MEASUREMENTS AT LOW AND HIGH MAGNETIC FIELD ON LIQUID AND AMORPHOUS METALS, AND SEMICONDUCTORS**

Masami Ogita[1], Takanori Ito[1], Mohd Hafezzullah[1], Hiroyuki Nonoyama[1], Masaaki Isai[1], Iwao Mogi[2], Satoshi Awaji[2], Kuniyoshi Yokoo[3], *[1]Fac. of Eng., Shizuoka University, Japan, [2]IMR, Tohoku University, Japan, [3]RIEC, Tohoku University, Japan*

**EX-06 NUMERICAL MODELING FOR ACTIVE MAGNETIC REGENERATIVE REFRIGERATION**

Farid Allab, Afef Kedous-Lebouc, Jean Marc Fournier, Jean Paul Yonnet, *Laboratoire d'Electrotechnique de Grenoble, France*

**EX-07 MAGNETIZATION OF COUPLED AND NON-COUPLED SUPERCONDUCTING FILAMENTS WITH DEPENDENCE OF CURRENT DENSITY ON APPLIED FIELD**

Thitipong Satiramatekul, Frederic Bouillault, *LGEP, CNRS UMR 8507, SUPELEC, Paris 6 and Paris 11 Universities, France*

**EX-08 MAGNETORHEOLOGICAL CHARACTERIZATION OF CARBONYL IRON-ORGANOCLAY SUSPENSIONS**

Sung Taek Lim[1], Hyoung Jin Choi[1], Myung S. Jhon[2], *[1]Dept. of Polymer Sci. and Eng., Inha University, Republic of Korea, [2]Dept. of Chem. Eng., Carnegie Mellon University, United States of America*

**EX-09 HYSTERESIS IN JOSEPHSON CURRENT BY MAGNETIC FLUX QUANTUM**

Norimichi Watanabe, Akiyoshi Nakayama, Susumu Abe, Kunimori Aizawa, *Faculty of Engineering, Kanagawa University, Japan*

**EX-10 OBSERVATION OF CORRELATION BETWEEN H-R LOOP AND DOMAIN SWITCHING OF MTJ CELLS EMPLOYING MAGNETIC FORCE MICROSCOPE(MFM)**

Jin Hee Heo[1], Seung Bae Park[1], Tae Wan Kim[2], Il Sub Chung[1], *[1]School of Information and Communications Engineering, Republic of Korea, [2]Samsung Advanced Institute of Technology, Republic of Korea*

**EX-11 MAGNETOCALORIC PROPERTIES OF $Mn_5Sn_{3-x}Ga_x$ ALLOYS**

F. Q. Zhao[1], W. Dagula[2], O. Tegus[2], E. Bruck[2], K. H. J. Buschow[2], *[1]Department of Physics, Inner Mongolia Normal University, China, [2]Van der Waals-Zeeman Instituut, Universiteit van Amsterdam, Netherlands*

**Apr. 7** **Reception Hall**

## Session FA
## Physics of Spin Injection

**J. Inoue**
Nagoya University

**FA-01 SPIN WAVE INSTABILITY BY SPIN-POLARIZED**
**14:30 CURRENT INJECTION**

Yoshinobu Nakatani[1], Andre Thiaville[2], Jacques Miltat[2], *[1]Dept. of Computer-Science, University of Electro-Communications, Japan, [2]CNRS & Universite Paris-sud, Lab. Physique des solides, France*

**FA-02 withdrawn**
**14:45**

**FA-03 SPIN INJECTION FROM THE HEUSLER ALLOY**
**15:00 $Co_2MnGe$ INTO $Al_{0.1}Ga_{0.9}As$/GaAs HETEROSTRUCTURES**

Xu Ying Dong[1], Xiao Hua Lou[2], Christopher Adelmann[1], Jonathan Strand[2], Amanda K. Petford-Long[3], Paul A. Crowell[2], Chris J. Palmstrom[1], *[1]Dept. of Chemical Engineering and Materials Science, University of Minnesota, United States of America, [2]School of Physics and Astronomy, University of Minnesota, United States of America, [3]Dept. of Materials, University of Oxford, United Kingdom*

**FA-04 ELECTRODEPOSITION OF Ni-Si SCHOTTKY**
**15:15 BARRIERS**

Michail E. Kiziroglou[1], Alexander A. Zhukov[2], Mamdouh Abdelsalam[3], Xiao Li Li[1], Peter A. J. de Groot[2], Philip N. Bartlett[3], Cornelis H. de Groot[1], *[1]School of Electronics and Computer Science, University of Southampton, Southampton, United Kingdom, [2]School of Physics and Astronomy, University of Southampton, Southampton, United Kingdom, [3]School of Chemistry, University of Southampton, Southampton, United Kingdom*

**FA-05 PROBING SPIN-POLARIZED TUNNELING AT HIGH**
**15:30 BIAS AND TEMPERATURE WITH A MAGNETIC TUNNEL TRANSISTOR**

Byong Guk Park, Tamalika Banerjee, Byoung-Chul Min, Johnny G.M. Sanderink, Cock Lodder, Ronnie Jansen, *SMI, MESA Institute for Nanotechnology, University of Twente, Netherlands*

**FA-06 SPIN-FILTERING OF NON-EQUILIBRIUM HOLES IN**
**15:45 A SEMICONDUCTOR-FERROMAGNET HYBRID STRUCTURE**

E. Haq, T. Banerjee, M. H. Siekman, J. C. Lodder, R. Jansen, *MESA Institute for Nanotechnology, University of Twente, Netherlands*

**FA-07 FABRICATION OF THREE TERMINAL DEVICES**
**16:00 USING DOUBLE BARRIER MAGNETIC TUNNEL JUNCTIONS**

Taro Nagahama[1], Yoshishige Suzuki[2], Shinji Yuasa[1], *[1]National Institute of Advanced industrial Science and Technology (AIST), Japan, [2]Graduate School of Engineering Science, Osaka University, Japan*

**FA-08 SUB-MICRO SIZE SPIN-VALVE TRANSISTOR**

**16:15** Ying-Wen Huang[1], Chi-Kuen Lo[2], Yeing-Der Yao[3], Der-Ray Huang[4], Jin-Hua Huang[1], *[1]Department of Material science & Engineering, National Tsing Hua Univ., Taiwan, [2]Lab. For spintronics, OES, Industrial Technology Research Institute, Taiwan, [3]Institute of Physics, Academia Sinica, Taipei, Taiwan, [4]OES, Industrial Technology Research Institute, Hsin Chu, Taiwan*

**FA-09 THE OPTIMUM MAGNETO-CURRENT OF**
**16:30 COLLECTOR IN A SILICON BASE SPIN VALVE TRANSISTOR**

Lan-Chin Hsieh[1], Ying-Wen Huang[2], Chi-Kuen Lo[1], Yeong-Der Yao[3], Der Ray Huang[1], *[1]Lab. For spintronics, OES, Industrial Technology Research Institute, Taiwan, [2]Department of Material science & Engineering, National Tsing Hua Univ, Taiwan, [3]Institute of Physics, Academia Sinica, Taiwan*

**FA-10 SINGLE SPIN-FET FOR PROGRAMMABLE LOGIC**
**16:45 GATES**

Tan Seng Ghee[1], Mansoor B.A. Jalil[2], Bala Kumar[1], Ghee Hwee Lai[1], Teo Kie Leong[2], Thomas Liew[1], Chong Tow Chong[1], *[1]Data Storage Institute, Singapore, [2]ECE Dept., National University of Singapore, Singapore*

**FA-11 SPIN-DEPENDENT EFFECTS IN ULTRATHIN**
**17:00 TRILAYER M/N/M FILM STRUCTURES**

Takao Suzuki[1], Yevgen Pogoryelov[2], *[1]ISML, Toyota Technological Institute, Japan, [2]Institute for Magnetism, NAS of Ukraine, Ukraine*

**FA-12 1/*f* NOISE IN SPIN TRANSISTORS**

**17:15** Y. T. Hwang[1], M. C. Lin[2], Y. W. Huang[1], C. K. Lo[1], Y. D. Yao[1], H. L. Huang[3], *[1]Opto-Electronics & Systems Labs, Industrial Technology Research Institute, Hsinchu, Taiwan, [2]Dep. of Photonics & Institute of Electro-Optical Engineering, National ChiaoTung University, Hsinchu, Taiwan, [3]Dep. of Physics, National Taiwan University, Taipei, Taiwan*

**Apr. 7** **Room 141/142**

## Session FB
## Sensors, Mostly CPP I

**D. Wang**

Non Volatile Electronics

**FB-01 NOVEL SYNTHETIC FERRIMAGNET PINNED**
**14:30 LAYERS WITH SPIN BLOCKING LAYERS FOR METALLIC CPP SPIN VALVES REQUIRING HIGH PINNING-FIELD AND OUTPUT**

Keiichi Nagasaka, Hirotaka Oshima, Arata Jogo, Takahiro Ibusuki, Yutaka Shimizu, Atsushi Tanaka, *Advanced Magnetic Recording Laboratory, Fujitsu Laboratories, Ltd., Japan*

**FB-02 NARROW TRACK WIDTH CPP SPIN-VALVE GMR**
**14:45 HEADS UTILIZING HALF-METALLICITY MATERIALS**

Masamichi Saito, Naoya Hasegawa, Yosuke Ide, Tomohiro Yamashita, Yasuo Hayakawa, Yoshihiro Nishiyama, Masahiko Ishizone, Shuuji Yanagi, Kazumasa Nishimura, Akira Takahashi, *ALPS Electric. Co., Ltd., Magnetic Devices Division, Japan*

**FB-03 CPP-GMR WITH OXIDIZED Co-Fe LAYER ON**
**15:00 VARIOUS LOWER-ELECTRODE MATERIALS**

Katsumi Hoshino, Hiroyuki Hoshiya, Hiroyuki Katada, Nobuo Yoshida, Katsuro Watanabe, Kazuhiro Nakamoto, *Storage Research Center, Hitachi Ltd., Japan*

***FB-04 ANGULAR DEPENDENCE OF SPIN-TORQUE**
**15:15 CRITICAL CURRENTS FOR CPP-GMR READ HEADS**

Neil Smith, Jordan A. Katine, Matthew J. Carey, Jeff R. Childress, *Hitachi Global Storage Technologies, United States of America*

***FB-05 CoFeB/MgO/CoFeB MAGNETIC TUNNEL JUNCTIONS**
**15:45 WITH HIGH TMR RATIO AND LOW JUNCTION RESISTANCE**

Koji Tsunekawa[1], Motonobu Nagai[1], Hiroki Maehara[1], Shinji Yamagata[1], David D. Djayaprawira[1], Naoki Watanabe[1], Shinji Yuasa[2], Yoshishige Suzuki[3], Koji Ando[2], *[1]Anelva corporation, Japan, [2]National Institute of Advanced Industrial Science and Technology (AIST), Japan, [3]Graduate School of Engineering Science, Osaka University, Japan*

**FB-06 16:15 LOW-FREQUENCY NOISE ANALYSIS OF TMR HEADS**

Shunji Saruki, Hiroshi Kiyono, Kazumasa Fukuda, Tetsuya Kuwashima, Nozomu Hachisuka, Kenji Inage, Takeo Kagami, Takumi Uesugi, Satoshi Miura, Kazuhiro Barada, *Head Business Group, TDK Corporation, Japan*

**FB-07 16:30 withdrawn**

**FB-08 16:45 CURRENT INDUCED NOISE IN CPP AND CCP/CPP SPIN VALVE READ HEADS**

Jimmy Zhu, Xiao Chun Zhu, *Data Storage Systems Center, Carnegie Mellon University, United States of America*

**FB-09 17:00 AN MR FILM HEAD MINIMUM FEATURE PERSPECTIVE ON FUTURE AREAL DENSITY GROWTH RATES**

Robert E. Fontana Jr., *San Jose Research Center, Hitachi GST, United States of America*

**FB-10 17:15 ROOM TEMPERATURE NOL EXCHANGE BIASING SUPERIMPOSED ON AFM EXCHANGE BIAS IN SPECULAR SPIN-VALVES**

Masaaki Doi[1], Masato Izumi[1], Hiroaki Endo[1], Hiromi Niu Fuke[2], Hitoshi Iwasaki[2], Naoya Hasegawa[3], Masashi Sahashi[1], *[1]Dept. Electronic Engineering, Tohoku University, Japan, [2]Corporate R&D, Toshiba Corporation, Japan, [3]ALPS Electric Corporation, Japan*

**Apr. 7** **Room 234**

## Session FC
## Biomagnetism

**Y. Uchikawa**
Tokyo Denki University

**J.A. Nyenhuis**
School of Electrical and Computer Engineering, Purdue University

***FC-01 14:30 EVENT-RELATED TIME-FREQUENCY ANALYSIS OF THE SPONTANEOUS MEG ACTIVITIES DURING 3-D OBJECT PERCEPTION**

Sunao Iwaki[1], Giorgio Bonmassar[2], John W. Belliveau[2], *[1]National Institute of Advanced Industrial Science and Technology, Japan, [2]NMR Center, Massachusetts General Hospital, United States of America*

**FC-02 15:00 MAGNETENCEPHALOGRAPHIC MEASUREMENT DURING TWO TYPES OF MENTAL ROTATIONS OF THREE-DIMENSIONAL OBJECTS**

Hiroaki Kawamichi[1], Hiroaki Kawamichi[2], Yoshiaki Kikuchi[3], Shogoo Ueno[1], *[1]Graduate School of Medicine, University of Tokyo, Japan, [2]Systems Development Laboratory, Hitachi Ltd., Japan, [3]Tokyo Metropolitan University of Health Sciences, Japan*

**FC-03 15:15 NEUROMAGNETIC RESPONSE OF BILATERAL SOMATOSENSORY AREA TO STIMULUS REPETITION FREQUENCIES WITH A 3-D MEG MEASUREMENT**

Yoshinori Uchikawa, Bong-Soo Kim, *Dept. of Electronic and Computer Engineering, Tokyo Denki University, Japan*

**FC-04 15:30 SPATIAL ANALYSIS OF THE THREE DIMENSIONAL COMPONENTS OF A MAGNETOCARDIOGRAM**

Keiji Tsukada[1], Toshihiko Kiwa[1], Kuniomi Ogata[2], Tsuyoshi Miyashita[2], Akihiko Kandori[2], *[1]Okayama University, Japan, [2]Central Research Lab, Hitachi Ltd., Japan*

**FC-05 15:45 MAGNETIC NOISE DUE TO ENVIRONMENTAL VIBRATION IN MAGNETICALLY-SHIELDED ROOM**

Takayuki Abe[1], Keita Yamazaki[1], Norio Fujimaki[2], Satoshi Miyauchi[2], Koichiro Kobayashi[3], Koji Fujiwara[4], Kazuhiro Muramatsu[5], *[1]Research & Development Institute, Takenaka Corporation, Japan, [2]National Institute of Information and Communications Technology, Japan, [3]Dept. of Welfare Eng. , Iwate University, Japan, [4]Dept. of Electrical and Electronic Eng., Okayama University, Japan, [5]Dept. of Electrical and Electronic Eng., Saga University, Japan*

**FC-06 16:00 MRI SAFETY: RF-INDUCED HEATING NEAR STRAIGHT WIRES**

John A. Nyenhuis, Sung-Min Park, Rungkiet Kamondetdacha, Arslan Amjad, *ECE Purdue University, United States of America*

**FC-07 16:15 MAGNETIC RESONANCE IMAGING OF ELECTRICAL CONDUCTIVITY IN THE HUMAN BRAIN**

Masaki Sekino[1], Yusuke Inoue[2], Shoogo Ueno[1], *[1]Department of Biomedical Engineering, Graduate School of Medicine, University of Tokyo, Japan, [2]Department of Radiology, Institute of Medical Science, University of Tokyo, Japan*

**FC-08 16:30 AN ELECTROMAGNETIC HEARING AID USING COILS TO VIBRATE THE OSSICLES: EVALUATION OF EXCITATION FORCE AND DISTORTION**

Shinji Hamanishi[1], Takuji Koike[2], Hidetoshi Matsuki[3], Toshimitsu Kobayashi[4], Hiroshi Wada[1], *[1]Dept. of Bioengineering and Robotics, Tohoku University, Japan, [2]Dept. of Mechanical Engineering and Intelligent Systems, The University of Electro-Communications, Japan, [3]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [4]Dept. of Otorhinolaryngology - Head and Neck Surgery, Tohoku University, Japan*

**FC-09 16:45 NOVEL SUPERPARAMAGNETIC CORE-SHELL NANOPARTICLES FOR MAGNETIC TARGETED DRUG DELIVERY AND HYPERTHERMEA TREATMENT**

Palash Gangopadhyay, Thierry Verbiest, Sebastien Gallet, Edith Franz, Andre Persoons, *Laboratory for Molecular and Nano Materials, Department of Chemistry, Katholieke University of Leuven, Belgium*

**FC-10 17:00 MAGNETIC ACTUATOR FOR CAPSULE ENDOSCOPE NAVIGATION SYSTEM**

Atsushi Chiba, Masahiko Sendoh, Kazushi Ishiyama, Ken-ichi Arai, *RIEC, Tohoku University, Japan*

**FC-11 17:15 FOCUSED MAGNETIC NAVIGATION USING OPTIMIZED MAGNETS FOR MEDICAL THERAPIES**

Francis M. Creighton, Rogers C Ritter, Peter Werp, *Stereotaxis Inc, United States of America*

**Apr. 7** **Room 224**

## Session FD
## Magnetic Sensors II

**L.V. Panina**

School of Computing, Communication and Electronics, University of Plymouth

**FD-01 14:30 A NEW MAGNETORESISTIVE ANGULAR SENSOR WITH ULTRA-LOW OFFSET**

Stefan Butzmann[1], Reinhard Buchhold[2], *[1]Institute for Electronic Circuits and Measurement, Ruhr-Universitaet Bochum, Germany, [2]Philips Semiconductors GmbH, Hamburg, Germany*

**FD-02 14:45 ANGLE SENSOR USING SPIN VALVE WITH SAF STRUCTURE**

Dexin Wang, Jay Brown, Tim Hazelton, Jim M. Daughton, *NVE Corporation, United States of America*

**FD-03 LARGE MAGNETORESISTANCE AT ROOM**
**15:00 TEMPERATURE IN SEMICONDUCTING POLYMER SANDWICH DEVICES**

Markus Wohlgenannt[1], Thomas L. Francis[2], Omer Mermer[1], Govi Veeraraghavan[2], *[1]Department of Physics and Astronomy, The University of Iowa, United States of America, [2]Department of Electrical and Computer Engineering, The University of Iowa, United States of America*

**FD-04 MODELING OF GMR LINEAR ISOLATOR**
**15:15 UTILIZING SPIN VALVES**

Seung-young Park, Soonchul Jo, *School of Electronic Engineering, Soongsil University, Republic of Korea*

**FD-05 GEOMETRY OPTIMIZATION OF TMR CURRENT**
**15:30 SENSORS FOR ON-CHIP IC TESTING**

Kim Le Phan, Hans Boeve, Frederik Vanhelmont, Ton Ikkink, *Philips Research, Royal Philips Electronics, Netherlands*

**FD-06 MAGNETOIMPEDANCE (MI) IN NARROW FeNi/Au**
**15:45 MULTILAYER FILM SYSTEMS**

David de Cos[1], Nicholas Fry[2], Larissa V. Panina[2], Inaki Orue[1], Alfredo Garcia-Arribas[1], Jose Manuel Barandiaran[1], *[1]Departamento de Electricidad y Electronica, Universidad del Pais Vasco, Spain, [2]School of Computing, Communications and Electronics, University of Plymouth, United Kingdom*

**FD-07 HIGH FREQUENCY MAGNETIC FIELD DETECTION**
**16:00 BY UHF CARRIER TYPE THIN FILM SENSOR**

Kenji Tan[1], Masahiro Yamaguchi[2], Kiyoshi Yamakawa[1], *[1]Akita Research Institute of Advanced Technology, Japan, [2]Dept. of Electrical and Communication Engineering, Tohoku University, Japan*

**FD-08 MICROSCOPIC MAGNETIC AND HIGH FREQUENCY**
**16:15 PROPERTIES OF A STRESS SENSOR USING FeCoBSi MAGNETOSTRICTIVE THIN FILMS**

Michael Frommberger[1], Stefan Glasmachers[1], Clemens Schmutz[1], Jeffrey McCord[2], Eckhard Quandt[1], *[1]smart materials group, research center caesar, Bonn, Germany, [2]Institute for metallic materials, Leibniz Institute IFW Dresden, Germany*

**FD-09 DEVELOPMENT OF A JAW-POSITION MEASURING**
**16:30 SYSTEM USING MAGNETO-IMPEDANCE (MI) SENSOR**

Ryuji Masaki[1], Katsuhiko Tsuchida[1], Hitoshi Aoyama[1], Yoshinobu Honkura[1], Toyohiko Hayashi[2], Yoshihito Fujii[3], Shoji Kohno[3], *[1]Aichi Steel Corporation, Japan, [2]Department of Biocybernetics, Faculty of Engineering, Niigata University, Japan, [3]Division of Removable Prosthodontics, Graduate School of Medical and Dental Sciences, Niigata University, Japan*

**FD-10 DOUBLE-CORE GMI CURRENT SENSOR**

**16:45** Michal Malatek[1], Pavel Ripka[1], Ludek Kraus[2], *[1]Faculty of Electrical Eng., Czech Technical University in Prague, Czech Republic, [2]Institute of Physics,Czech Academy of Science, Czech Republic*

**FD-11 EFFECT OF TENSILE STRESSES ON GMI OF Co-**

**17:00 RICH AMORPHOUS MICROWIRES.**

Carlos Garcia[1], Arcady Zhukov[1], Juan M. Blanco[1], Valentina Zhukova[2], Mihail Ipatov[3], Julain Gonzalez[3], *[1]Dpto de Fisica Aplicada I, EUPDS, UPV/EHU, Plaza Europa 1, San Sebastian, Spain, [2]"TAMag Iberica" S.L., Parque Tecnologico de Miramon, Spain, [3]Dpto de Fisica de Materiales, Fac. Quimica, UPV/EHU, San Sebastian, 1072, 20080, Spain*

**FD-12 A NEW FREQUENCY-MODULATION-TYPE MI**

**17:15 SENSOR**

Z.M. Wu[1], X.L. Yang[1], J.X. Yang[1], Z.J. Zhao[1], L.P. Liu[1], *[1]Dept. of Physics, East China Normal University, China*

**Apr. 7** **Room 131/132**

## Session FE
## Intermetallic and Other Hard Magnetic Materials

**G.C. Hadjipanayis**
University of Delaware

**W. C. Chang**
National Chung Cheng University

**FE-01 A COMPARISON OF HIGHLY COERCIVE FePt FILMS**

**14:30 PREPARED BY PULSED LASER DEPOSITION AND ELECTRODEPOSITION**

Sebastian Fahler, Martin Weisheit, Karin Leistner, Heike Schlorb, Jurgen Thomas, Ludwig Schultz, *IFW Dresden, Germany*

**FE-02 FABRICATION OF $L1_0$-FePt THIN FILMS BY LAPID**

**14:45 THERMAL ANNEALING**

Kyohei Aimuta[1], Kazuhiro Nishimura[1], Shuichiro Hashi[2], Mitsuteru Inoue[1], *[1]Dept. of Electrical and Electronic Eng., Toyohashi University of Technology, Japan, [2]Dept. of Materials Science and Technology, Gifu University, Japan*

**FE-03 HIGH COERCIVITY IN FePt-BASED BULK MAGNETS**

**15:00** Raghavan Gopalan, Andreas A. Kuendig, Masato Ohnuma, Kazuhiro Hono, *National Institute for Materials Science, Japan*

**FE-04 15:15 ELECTRODEPOSITED Co-Ni-Re-W-P THICK ARRAY OF HIGH VERTICAL MAGNETIC ANISOTROPY**

Ng Wei Beng[1], Akio Takada[2], Kanzo Okada[1], *[1]Singapore Research Laboratory, Sony Electronics (Singapore) Pte. Ltd., Singapore, [2]MR Device Department, Magnetic Products Division, Device Solutions Company, Micro Systems and Network Company, Sony Corporation, Japan*

**FE-05 15:30 MAGNETIC AND STRUCTURAL PROPERTIES Of La-SUBSTITUTED FERRITES**

Michaela Kuepferling, Roland Groessinger, Guenter Wiesinger, Martin Pieper, Michael Reissner, *Dept. of Solid State Physics, Vienna University of Technology, Austria*

**FE-06 15:45 HIGH-COERCIVITY Co-FERRITE THIN FILMS ON $SiO_2$ (100) SUBSTRATE PREPARED BY SPUTTERING AND PLD**

Jian Hua Yin, Jun Ding, Bing Hai Liu, Yong Chao Wang, Jia Bao Yi, *Department of Materials Science, National University of Singapore, Singapore*

**FE-07 16:00 HIGH REMANENCE, EPITAXIAL $SmCo_5$ THIN FILMS**

A. Singh[1], V. Neu[1], R. Tamm[2], S. Faehler[1], W. Skrotzki[2], L. Schultz[1], B. Holzapfel[1], *[1]IFW Dresden, Germany, [2]Institut fuer Kristallographie und Festkoerperphysik, Germany*

**FE-08 16:15 BULK MAGNETIC HARDENING IN Cu-ADDED $(SmCo_5)_{1-x}(Sm_2Co_{17})_x$ CAST ALLOYS**

Alexander Gabay, Yong Zhang, Melania Marinescu, Kyriakos Christodoulides, George C. Hadjipanayis, *Dept. of Physics and Astronomy, University of Delaware, United States of America*

**FE-09 16:30 EFFECT OF Cu SUBSTITUTION ON THE STRUCTURAL AND MAGNETIC PROPERTIES OF $DyCo_{5-x}Cu_x$**

Debjani Banerjee[1], K.G. Suresh[1], A.K. Nigam[2], *[1]Department Of Physics, IIT Bombay, Mumbai, India, [2]Tata Institute Of Fundamental Research, Mumbai, India*

**FE-10 16:45 Nd-Fe-B THICK FILMS PREPARED BY SCREEN PRINTING**

Thanassis K. Speliotis[1], Dimitris Niarchos[1], Polycarpos Falaras[1], Dimitris Tsoukleris[1], John G. Pepin[2], *[1]NCSR "Demokritos" Institute of Materials Science, Greece, [2]DuPont Electronic Technologies, Research Triangle Park North Carolina, United States of America*

**FE-11 17:00 HEAT RESISTANT PLASTIC MAGNETS**

Michiya Kume, Masaki Hayashi, Muneo Yamamoto, Kuniyasu Kawamura, Kohei Ihara, *Nichia Corporation, Japan*

**FE-12 CORROSION KINETICS OF SPARK PLASMA**
**17:15 SINTERING Nd-Fe-B MAGNETS IN DIFFERENT ELECTROLYTES**

Ming Yue, *School of Materials Science, Beijing University of Technology, China*

**Apr. 7** **Room 133/134**

## Session FF
## Clusters and Particles IV

**J.C. Lodder**
SMI, MESA, University of Twente

**O. Kitakami**
Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

**FF-01 INFLUENCE OF THE INTERFACE ON THE**
**14:30 MAGNETIC MOMENT OF Co CLUSTERS IN A Cu MATRIX**

Ana Garcia Prieto[1], M. Luisa Fdez-Gubieda[1], Jesus Chaboy[2], M. Angeles Laguna-Marco[3], Takayuki Muro[4], Tetsuya Nakamura[4], *[1]Departamento de Electricidad y Electronica, Universidad del Pais Vasco, Spain, [2]ICMA, CSIC-Universidad de Zaragoza, Spain, [3]CITIMAC, Universidad de Cantabria, Spain, [4]JASRI-SPring-8, Japan*

**FF-02 LARGE COERCIVITY IN $Mn_3O_4$ NANOCRYSTALLITES**
**14:45** Ping Zhan Si[1], Ekkes Bruck[2], Zhi Dong Zhang[1], Chul Jin Choi[3], Wei Shan Zhang[1], O. Tegus[2], K. H. J. Buschow[2], *[1]Inst. of Metal Res. Chinese Acad. of Sci., China, [2]Van der Waals-Zeeman Inst. Univ. of Amsterdam, Netherlands, [3]Korea Inst. of Machinery and Materials, Republic of Korea*

**FF-03 MAGNETIC STRUCTURE AND ANISOTROPY OF**
**15:00 FCC-IRON NANOCLUSTERS TRAPPED IN CARBON NANOTUBE**

Mutsuhiro Shima[1], Saroj K. Nayak[1], Pulickel M. Ajayan[1], Saburo Nasu[2], *[1]Dept. of Materials Science and Engineering, Rensselaer Polytechnic Institute, United States of America, [2]Dept. of Physical Science, Osaka University, Japan*

**FF-04 TETRAHEDRAL MAGNETIC CLUSTER EMBEDDED**
**15:15 IN METALLIC MATRIX: ELECTRON CORRELATION EFFECTS**

Eduardo Cruz-Silva, Emilio Munoz-Sandoval, Mauricio Terrones, Florentino Lopez-Urias, *Insituto Potosino de Investigacion Cientifica y Tecnologica A.C., Mexico*

**FF-05 AB INITIO CALCULATION FOR MAGNETISM OF Pd**
**15:30 NANOPARTICLES**

Masahiko Nawate[1], Hiroshi Tanaka[2], Norihiko Nishimura[1], Shigeo Honda[1], *[1]Dept. of Electronics and Control Systems, Shimane University, Japan, [2]Dept. of Material Science, Shimane University, Japan*

**FF-06 FABRICATION OF CORE-SHELL TYPE MAGNETIC**
**15:45 NANOPARTICLES BY A NANOCLUSTER DEPOSITION TECHNIQUE**

Jian Min Bai, Jian-Ping Wang, *MINT Center & Department of Electrical and Computer Engineering, University of Minnesota, United States of America*

**FF-07 EXCHANGE ANISOTROPY IN Fe-$MnF_2$**
**16:00 NANOGRANULAR FILMS**

Takao Furubayashi, Hiroaki Mamiya, *National Institute for Materials Science, Japan*

**FF-08 CONTROL AND SELECTION OF THE MAGNETIC**
**16:15 ANISOTROPY OF COBALT NANOWIRES**

Michael Darques[1], Armando Encinas[2], Luc Piraux[1], Pascale Guillemaud[3], Adriana Popa[3], Ursula Ebels[3], *[1]Universite Catholique de Louvain, Unite PCPM, Belgium, [2]Instituto de Fisica, Universidad autonoma de San Luis Potosi, Mexico, [3]CEA-DRFMC, France*

**FF-09 DEVELOPMENT OF COERCIVITY IN Fe($Pt_{0.7}Ni_{0.3}$)/C**
**16:30 MULTILAYERS**

M. Zhoud[1], M. J. Bonder[1], Y. Huang[1], Y. Zhang[1], G. C. Hadjipanayis[1], D. Weller[2], *[1]Dept. of Phyiscs, Univ of Delaware, United States of America, [2]Seagate Technology, United States of America*

**FF-10 MAGNETORESISTANCE ANALYSIS OF NANOSCALE**
**16:45 MAGNETIC CORRELATION IN COSPUTTERED**
**$Fe_{100-X}Ag_X$ FILMS**

Paolo Allia[1], Marco Coisson[2], Paola Tiberto[2], Franco Vinai[2], Diego Bisero[3], Federico Spizzo[3], *[1]Dept. of Physics, Politecnico di Torino, Italy, [2]Materials Dept., IEN Galileo Ferraris, Italy, [3]Dept. of Physics, Universita' di Ferrara, Italy*

**FF-11 ANOMALOUS MAGNETIC BEHAVIOR IN Ni-Ag**
**17:00 NANOPARTICLES**

Aparna Roy[1], Sankar Ram[2], Srinivas[1], Chandrasekhar-Rao Turumella[3], *[1]Dept. of Physics, Indian Institute of Technology, Kharagpur, India, [2]Material Science Center, Indian Institute of Technology, Kharagpur, India, [3]TPPED, Bhabha Atomic Research Center, Bombay, India*

**FF-12 EFFECT OF PARTICLE SIZE ON ELECTRICAL AND**
**17:15 MAGNETOTRANSPORT PROPERTIES OF MANGANITE NANOPARTICLES**

C. Krishnamoorthy[1], R. Nirmala[2], K. Sethupathi[1], V. Sankaranarayanan[1], S. K. Malik[2], *[1]Dept. of Physics, Indian Institute of Technology Madras, India, [2]Dept. of Condensed Matter Physics and Material Science, Tata Institute of Fundamental Research, India*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FP**

## Perpendicular Recording Media II (SUL)

**N. Honda**

Akita Research Institute of Advanced Technology

**FP-01 EFFECT OF INTERFACE ROUGHNESS ON EXCHANGE COUPLING IN SYNTHETIC ANTIFERROMAGNETIC MULTILAYERS**

Mrugesh Desai[1], Arkajyoti Misra[2], William D. Doyle[1], *[1]MINT Center, University of Alabama, United States of America, [2]Department of ECE, University of Minnesota, United States of America*

**FP-02 Fe-Co-B SOFT MAGNETIC UNDERLAYER WITH RADIALLY ORIENTED HIGH ANISOTROPY FIELD FOR PERPENDICULAR MAGNETIC RECORDING DISK**

Sukefumi Ito, Shigeki Nakagawa, *Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**FP-03 CONTROL OF IN-PLANE MAGNETIC ANISOTROPY FIELD OF Fe-Co-B/[Ni-Fe/Si] ON DISK SUBSTRATE**

Sok Hyun Kong[1], Kyung Hwan Kim[2], Shigeki Nakagawa[3], *[1]Venture Business Laboratory, Kagoshima University, Japan, [2]Dept. of Electric and Information Engineering, Kyungwon University, Republic of Korea, [3]Dept. of Physical Electronics, Tokyo Institute of Technology, Japan*

**FP-04 NOBLE DEVELOPMENT OF Al/NiP SUBSTRATE WITH SOFT MAGNETIC UNDERLAYER: FORMATION OF NANO-CRYSTALLINE AND (111) ORIENTATION OF PLATED NiFe FILM**

Atsushi Hashimoto[1], Shin Saito[1], Migaku Takahashi[1], Noriaki Mukai[2], *[1]Tohoku Univ., Japan, [2]Toyo Kohan co., ltd., Japan*

**FP-05 EFFECT OF FILM THICKNESS OF ELECTROLESSLY DEPOSITIED CoNiFeB SOFT MAGNETIC UNDERLAYER ON ITS MAGNETIC PROPERTIES**

Atsushi Sugiyama[1], Ken Adachi[1], Mariko Sakagami[1], Masahiro Yoshino[1], Jun Kawaji[1], Toru Asahi[1], Toshihiro Tsumori[2], Tetsuya Osaka[1], *[1]Graduate School of Science and Engineering, Waseda University, Japan, [2]Shin-Etsu Chemical Co., Ltd., Japan*

**FP-06 EFFECTS OF RESIDUAL STRESS AND SURFACE MORPHOLOGY OF SUL ON MAGNETIC PROPERTIES AND GRAIN ISOLATION IN CoCrPtO PERPENDICULAR RECORDING MEDIA**

Dae Hoon Hong, Sang Hwan Park, Taek Dong Lee, *Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea*

**FP-07 THE ROLE OF SOFT UNDERLAYER PERMEABILITY IN WIDE AREA TRACK ERASURE IN HIGH-DENSITY PERPENDICULAR RECORDING**

J. N. Zhou, B. R. Acharya, P. Gill, E. N. Abarra, M. Zheng, G. Choe, *MMC Technology, United States of America*

**FP-08 INFLUENCE OF MEDIA BACKGROUND ON WRITE/READ PERFORMANCE IN PERPENDICULAR MEDIA WITH AN ANTIFERROMAGNETIC LAYER**

Hwan-Soo Lee[1], James A. Bain[1], Sooyoul Hong[2], Hyung J. Lee[2], *[1]Data Storage Systems Center, Carnegie Mellon University, United States of America, [2]Storage System Division, Samsung Information Systems America, United States of America*

**FP-09 WIDE BAND ERASURE CAUSED BY SUL DOMAIN WALL IN PERPENDICULAR RECORDING MEDIA**

Yasutaka Nishida, Reiko Arai, Kiwamu Tanahashi, Atsushi Nakamura, Ikuya Tagawa, *Storage Technology Research Center, Hitachi, Ltd., Japan*

**FP-10 SPIKE NOISE IN SOFT UNDER LAYER FOR PERPENDICULAR RECORDING AND ITS IMPACT ON ERROR RATE**

Min Xiao, Bruce A. Wilson, Kentaro Takano, Yoshihiro Ikeda, Hoa Do, Hal Rosen, *Hitachi GST, San Jose Research, United States of America*

**13:30-17:00** **Session FQ**

## Magnetic Recording Physics II

**K. Gao**
Seagate Technology

**H. Kanai**
Fujitsu Ltd.

**FQ-01 EFFECTS OF READER DISTORTION ON NONLINEAR TRANSITION SHIFT MEASUREMENTS**
A. Prabhakar[1], A. Thangaraj[1], M. Manikam[2], E. Louis[2], *[1]Electrical Engg., Indian Institute of Technology, Madras, India, [2]Western Digital Corporation, Bang-pa In, Thailand*

**FQ-02 GAP DEPENDENCE OF THE SHIELDED POLE HEADS**
Mike Mallary, Adam F. Torabi, Mourad Benakli, *Advanced Technology, Maxtor Corporation, United States of America*

**FQ-03 READING PROCESS OF MR HEAD INVESTIGATED WITH MICROMAGNETIC MODEL**
H.Ono, K.Yoshida, M.Sakurai, *Kogakuin University, Japan*

**FQ-04 HARMONIC ANALYSIS METHOD FOR GAP WIDTH EVALUATION**
Yipin Zhou[1], Bo Liu[1], Lewei Li[2], *[1]Data Storage Institute of Singapore, Singapore, [2]Dept. of Electrical and Computer Engineering, National University of Singapore, Singapore*

**FQ-05 WRITE-FIELD GRADIENT EFFECT ON TRANSITION WIDTH IN PERPENDICULAR RECORDING MEDIA**
Masafumi Mochizuki, Miki Hara, Atsushi Nakamura, Masukazu Igarashi, *Storage Technology Research Center, Hitachi Ltd., Japan*

**FQ-06 MICROMAGNETIC STUDY OF THE CORRELATION BETWEEN HEAD FIELD GRADIENT AND JITTER IN PERPENDICULAR RECORDING**
Jason S. Goldberg, Hong Zhou, Pierre Asselin, *Research Division, Seagate Technology, United States of America*

**FQ-07 EFFECT OF QUARTIC ANISOTROPY TERM ON READ/WRITE PROPERTIES OF PERPENDICULAR RECORDING MEDIA**
Yoshinobu Nakatani[1], Nobuo Hayashi[1], Yasutaro Uesaka[2], Hiroshi Fukushima[3], *[1]Dept. of Computer-Science, University of Electro-Communications, Japan, [2]Dept. of Electrical and Electronics Engineering, Nihon University, Japan, [3]Individual Capacity, Japan*

**FQ-08 SIMULATION STUDY OF NONLINEAR TRANSITION SHIFT IN PERPENDICULAR MAGNETIC RECORDING MEDIA**

Naoki Honda, Takanori Kiya, Kazuhiro Ouchi, *Akita Research Institute of Advanced Technology, Japan*

**FQ-09 OVERWRITE AND ADJACENT TRACK ERASURE IN PERPENDICULAR RECORDING**

Jimmy Zhu, *Data Storage Systems Center, Carnegie Mellon University, United States of America*

**FQ-10 EFFECTS OF MEDIA ORIENTATION ON NOISE, TRACK WIDTH AND THERMAL STABILITY**

Alexander Taratprom, Klaas B. Klaassen, Ernesto Marinero, *San Jose Research Center, Hitachi Global Storage Technologies, United States of America*

**FQ-11 MINIMUM VOLUME OF TILTED AND COMPOSITE MEDIA CONSIDERING MAGNETO-STATIC INTERACTIONS**

Akihiko Takeo[1], H. Neal Bertram[2], *[1]Core Technology Center, Toshiba Corporation, Japan, [2]CMRR, University of California, San Diego, United States of America*

**FQ-12 MAGNETIC REVERSAL FIELD MAP COMBINED WITH MEDIUM NOISE IMAGE IN PERPENDICULAR RECORDING MEDIA**

Shunji Ishio[1], Jian Min Bai[2], Hitoshi Saito[1], *[1]Department of Materials Science and Engineering, Akita University, Japan, [2]MINT&Department of Electrical and Computer Engineering, University of Minnesota, United States of America*

**FQ-13 INFLUENCE OF THERMAL AGITATION ON READBACK WAVEFORMS IN PERPENDICULAR MAGNETIC RECORDING**

Mitsuhiro Hashimoto, Toshiya Suzuki, Kenji Miura, Hiroaki Muraoka, Hajime Aoi, Yoshihisa Nakamura, *RIEC, Tohoku university, Japan*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FR**

## Patterned Media and FePt Media

**T. Thomson**

Hitachi Global Storage Technologies

**FR-01 EXPERIMENTAL AND MICROMAGNETICS STUDIES ON MAGNETISM OF Ni NANOWIRE ARRAYS PREPARED WITH MAGNETIC FIELD INDUCTION**

Feng Tian, Dan Wei, Jing Zhu, *Dept. of MS&E, Tsinghua University, China*

**FR-02 FABRICATION OF HEAD-FLYABLE NANOHOLE PATTERNED MEDIA AND DYNAMIC WRITE/READ MEASUREMENT WITH GMR HEAD**

Hideyuki Kikuchi[1], Hiroshi Nakao[1], Kenji Yasui[2], Kazuyuki Nishio[3], Takeshi Morikawa[4], Kouji Matsumoto[4], Hideki Masuda[3], Kenichi Itoh[1], *[1]Yamagata Fujitsu Ltd., Japan, [2]Tokyo Metropolitan University, Japan, [3]Kanagawa Academy of Science and Technology, Japan, [4]Fujitsu Laboratories Ltd., Japan*

**FR-03 FABRICATION OF Co/Pt DOTS ARRAY**

Chin-Chung Yu[1], Yeong-Der Yao[2], Kuo-Lung You[2], Sung-Chieh Chou[2], Yung Liou[2], *[1]Dept. of Appl. Phys., National University of Kaohsiung, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan*

**FR-04 PERFORMANCE EVALUATION OF DISCRETE TRACK PERPENDICULAR MEDIA FOR HIGH RECORDING DENSITY**

Yoshikazu Soeno, Makoto Moriya, Akimasa Kaizu, Mitsuru Takai, *Devices Development Center, TDK Corporation, Japan*

**FR-05 TRACKING ISSUES IN HIGH-DENSITY PATTERNED MEDIA STORAGE**

Paul W. Nutter[1], Ioannis Ntokas[1], Barry K. Middleton[1], David T. Wilton[2], *[1]School of Computer Science, The University of Manchester, United Kingdom, [2]School of Mathematics & Statistics, University of Plymouth, United Kingdom*

**FR-06 MODELING AND DESIGN OF DISCRETE TRACK RECORDING MEDIA**

Eric Roddick, Davie Wachenschwanz, *Komag, Inc., United States of America*

**FR-07 PERPENDICULAR ANISOTROPY OF MBE-GROWN FePt GRANULAR FILMS**

Satoshi Iwata[1], Tomoya Itoh[2], Takeshi Kato[2], Shigeru Tsunashima[2], *[1]CCRAST, Nagoya University, Japan, [2]Dept. of Electronics, Nagoya University, Japan*

**FR-08 FePt ORDERED ALLOY THIN FILM PREPARED BY 30 SECONDS ANNEALING WITH Fe-O UNDER-LAYER**

Akira Yano, Tetsunori Koda, Satoshi Matsunuma, *Hitachi Maxell, LTD., Japan*

**FR-09 GROWTH AND CHARACTERIZATION OF EPITAXIAL FePt FILMS**

Francesca Casoli, Franca Albertini, Luigi Pareti, Simone Fabbrici, Lucia Nasi, Claudio Bocchi, Roberta Ciprian, *IMEM-CNR, Italy*

**13:30-17:00** **Session FS**

## Head Disk Interface I

**B. Marchon**
Hitachi Global Storage Technologies

**T. Yamamoto**
Toshiba Corporation

**FS-01 INVESTIGATION OF TRIBOLOGICAL AND READ-WRITE PERFORMANCE OF TEXTURED SLIDERS**
Li Zhi Su[1], Saurabh Deoras[1], Akihiko Takeo[2], Frank E. Talke[1], *[1]Center for Magnetic Recording Research, University of Californina, San Diego, United States of America, [2]Core Technology Center, Toshiba Corporation, Japan*

**FS-02 THE EFFECTS OF SURFACE TEXTURE ON THE SLIDER STEADY STATE FLYING CHARACTERISTICS OF PICO SLIDERS**
Jia Dong Zhang[1], Li Zhi Su[1], Frank E. Talke[1], *[1]Center for Magnetic Recording Research, University of Californina, San Diego, United States of America*

**FS-03 THE ADHESION BETWEEN SLIDER AND DISK AT LOW FLY HEIGHTS**
George W. Tyndall[1], Larry E. Bailey, Jr.[2], Curtis W. Frank[2], Robert J. Waltman[3], *[1]Samsung Information Systems America, United States of America, [2]Dept. of Chemical Engineering, Stanford University, United States of America, [3]Hitachi Global Storage Technologies, United States of America*

**FS-04 THERMAL STUDY OF NANOMETER SPACED HEAD-DISK SYSTEMS**
Hui Li, Bo Liu, Tow-Chong Chong, *Data Storage Institute, Singapore*

**FS-05 NITROGENATED AMORPHOUS CARBON FILMS PREPARED BY UNBALANCED MAGNETRON SPUTTERING FOR HIGH RECORDING DESITY MEDIA**
Jin Rong Shi, S.N. Piramanayagam, *Data Storage Institute, Singapore, Singapore*

**FS-06 IMPROVING THE COROSSION RESISTANCE OF METAL-EVAPORATED TAPE USING DICARBOXY ACID AS A LUBRICANT**
Tomoe Iwano, Ken Kobayashi, *Advanced Tape Storage Development Dept., Recording Media Company, Sony Corporation, Japan*

**FS-07 ABSOLUTE HEAD MEDIA SPACING MEASUREMENT IN-SITU**
Zhi-Min Yuan, Bo Liu, *Data Storage Institute, Singapore*

**FS-08 LOAD/UNLOAD PROCESSES FOR SUB-5-nm FLYING HEIGHT SLIDERS**

Ee-Ling Kek[1], Yan Sheng Ma[1], Sujeet Kumar Sinha[2], Bo Liu[1], *[1]Data Storage Institute, Singapore, [2]Department of Mechanical Engineering, National University of Singapore, Singapore*

**FS-09 FLYING-HEIGHT REDUCTION OF MAGNETIC HEAD SLIDER DUE TO THERMAL PROTRUSION**

Masayuki Kurita[1], Jun Guo Xu[1], Mikio Tokuyama[1], Kazuhiro Nakamoto[1], Shozo Saegusa[2], Youji Maruyama[2], *[1]Storage Technology Research Center, Hitachi, Ltd., Japan, [2]Hitachi Global Storage Technologies Japan, Ltd., Japan*

**FS-10 MOLECULAR DYNAMICS SIMULATION FOR ANALYSIS OF SURFACE MORPHOLOGY OF LUBRICANT FILMS WITH FUNCTIONAL ENDGROUPS**

Susumu Ogata[1], Yasunaga Mitsuya[2], Hedong Zhang[2], Kenji Fukuzawa[2], *[1]Dept. of Electronic-Mechanical Engineering, Graduate School of Engineering, Nagoya University, Japan, [2]Dept. of Micro and Nano System Engineering, Grasuate School of Engineering, Nagoya University, Japan*

**FS-11 INVESTIGATION ON WEAR AND RECESSION OF THE GMR HEAD IN HELICAL-SCAN TAPE SYSTEM**

Kikuji Kawakami, Yoshiteru Kamatani, Masayuki Kondo, Tadashi Ozue, Seiichi Onodera, *ATS Development Dept., MEM Div., MSNC-RM-company, SONY co., Japan*

**FS-12 VOLTAGE PULSING FOR LOCALIZED CLEARANCE MEASUREMENT**

Maik Duwensee[1], Bernhard Knigge[2], Peter Baumgart[2], Frank E. Talke[1], *[1]University of California, San Diego, United States of America, [2]Hitachi Global Storage Technologies, San Jose, United States of America*

**FS-13 EFFECT OF SLIDER LUBRICANT PICKUP ON STABILITY AT THE HEAD-DISK INTERFACE**

Rohit P. Ambekar[1], David B. Bogy[2], *[1]Computer Mechanics Lab., UC Berkeley, United States of America, [2]Dept. of Mechanical Engineering, UC Berkeley, United States of America*

**FS-14 THICKNESS AND ADHESION FORCE DISTRIBUTIONS IN SPREADING REGION OF MOLECULARLY THIN LUBRICANT FILMS ON MAGNETIC DISKS**

Hedong Zhang[1], Yasunaga Mitsuya[1], Eiji Nakai[2], Keiko Goto[3], Kenji Fukuzawa[1], *[1]Department of Micro-Nano System Engineering, Nagoya University, Japan, [2]Sanyo Electric Co., Japan, [3]NGB Corporation, Japan*

**FS-15 HEAD-DISK INTERFACE MODELING WITH LATTICE BOLTZMANN METHOD**

Woo Tae Kim[1], Yong Zhou[2], Ilya Staroselsky[2], Hudong Chen[2], Myung S. Jhon[1], *[1]Department of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, United States of America, [2]Exa Corporation, United States of America*

**FS-16 FLYING HEIGHT-ATTITUDE TESTER: A NOVEL TECHNIQUE FOR SLIDER-LUBE-DISK INTERACTION STUDY**

Yan Sheng Ma, Bo Liu, Jiang Zhou, *Data Storage Institute, Singapore*

**FS-17 POLE-TIP PROTRUSION EFFECT ON HEAD-DISK INTERFACE AT LOW FLYING CLEARANCE**

Zhong-Qing Gong, Jia Jay Liu, *MMC Technology, United States of America*

**FS-18 RECENT FINDINGS CONCERNING WATER CONDENSATION ON PFPE LUBRICATED MAGNETIC RECORDING DISKS**

George W. Tyndall[1], Robert J. Waltman[2], Margaret E. Best[2], *[1]Samsung Information Systems America, United States of America, [2]Hitachi Global Storage Technology, United States of America*

**FS-19 NUMERICAL INVESTIGATION OF FRACTURE OF SMALL FORM FACTOR GLASS DISKS AS A FUNCTION OF SHOCK LEVEL**

Jian Feng Xu[1], Yutaka Okazaki[2], Frank E. Talke[1], *[1]CMRR, University of California at San Diego, United States of America, [2]Sony Corporation, Japan*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FT**

## Magnetic Actuators

**T. Mizuno**

Shinshu University

**S. Yamada**

Kanazawa University

**FT-01 DYNAMIC DRIVE ANALYSIS THROUGH BASE SPEED DETERMINATION FOR OPTIMUM CONTROL BOUNDARY IN PMLSM WITH SELF LOAD**

Won Bum Jang, Seok Myeong Jang, Dae Joon You, *Dept. of Electrical Engineering, Chungnam National University, Republic of Korea*

**FT-02 A SET OF EXPERIMENTS AND TEST RIG TO FULLY CHARACTERIZE LINEAR PM OSCILLATORY MACHINES**

Lucian Tutelea[1], Myung Chin Kim[2], Tae-Heoung Kim[2], Ju Lee[2], Ion Boldea[1], *[1]University of Politehnica Timisoara, Romania, [2]Hanyang University, Republic of Korea*

**FT-03 CHARACTERISTIC CALCULATION OF FLUX CONCENTRATION TYPED LOA**

Ki-Bong Jang, Tae Heoung Kim, Seung-Bin Lim, Ju Lee, *Department of Electrical Engineering, Hanyang University, Republic of Korea*

**FT-04 DESIGN AND EXPERIMENTAL VERIFICATION OF LINEAR SYNCHRONOUS RELUCTANCE MOTOR**

Seok Myeong Jang, Ji Hoon Park, Jeong Ki Kwon, Jang Young Choi, Han Wook Cho, Won Bum Jang, *Dept. of Electrical Engineering, Chungnam National University, Republic of Korea*

**FT-05 RELUCTANCE NETWORK METHOD BASED DYNAMIC MODEL OF RADIAL ACTIVE MAGNETIC BEARINGS**

Riku Pollanen, Janne Nerg, Olli Pyrhonen, *Dept. of Electrical Engineering, Lappeenranta University of Technology, Finland*

**FT-06 ANALYSIS OF FLAT-TYPE VIBRATION MOTOR FOR MOBILE PHONE**

Sung Hong Won, Ju Lee, *Dept. of Electric Eng., Hanyang University, Republic of Korea*

**FT-07 EVALUATION OF THE NORMAL FORCE OF A PLANAR ACTUATOR**

Marilia Amaral da Silveira, Aly Ferreira Flores Filho, Roberto Petry Homrich, *Federal University of Rio Grande do Sul, Brazil*

**FT-08 TURNING PERFORMANCE OF FISH-TYPE MICROROBOT DRIVEN BY EXTERNAL MAGNETIC FIELD**

Masahiro Tomie, Atsushi Takiguchi, Takashi Honda, Jiro Yamasaki, *Dept. of Applied Science for Integrated System Eng., Kyushu Institute of Technology, Japan*

**FT-09 MICROPUMP WITH MAGNETIC MICROMACHINE**

Shin Ichi Hisatomi, Aya Yamazaki, Masahiko Sendoh, Shigeto Agatsuma, Kazushi Ishiyama, Ken-ichi Arai, *Research Institute of Electrical Communication, Tohoku University, Japan*

**FT-10 FABRICATION OF SPIRAL TYPE MAGNETIC MICROMACHINE FOR TRAILING A WIRE**

Kenji Kikuchi, Aya Yamazaki, Masahiko Sendoh, Kazushi Ishiyama, Ken-ichi Arai, *Tohoku University, Japan*

**FT-11 WIRELESS MAGNETIC MICRO-MACHINE OF PLANAR STRUCTURE WITH MAGNETIC THIN FILM**
Aya Yamazaki, Masahiko Sendoh, Kazushi Ishiyama, Ken-ichi Arai, *Research Institute of Electrical Communication,Tohoku Univercity, Japan*

**FT-12 WIRELESS-TYPE MAGNETIC MICRO-ACTUATOR CAPABLE OF MOVEMENT IN A PIPE**
Hiroyuki Yaguchi, Katsuo Turumoto, *Tohoku Gakuin University, Japan*

**FT-13 A 64 kHz LANGEVIN SANDWICH TRANSDUCER FABRICATED USING GIANT MAGNETOSTRICTIVE COMPOSITES**
Chung Sheung Yung, Ching Yin Lo, Siu Wing Or, *Department of Applied Physics, The Hong Kong Polytechnic University, China*

**FT-14 DESIGN AND IMPLEMENTATION OF A NOVEL 6-DOF PLANAR MAGLEV POSITIONING SYSTEM**
Yi-Chih Lai, Jia-Yush Yen, *Dept. of Mechanical Engineering, National Taiwan University, Taiwan*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FU**

## Magnetoresistive Oxides & Halfmetallic Materials

**H. Kubota**

National institute of advanced industrial science and technology

**FU-01 FABRICATION OF HEUSLER-TYPE $Co_2MnAl$ EPITAXIAL FILMS BY USING SPUTTERING METHOD**
Yuya Sakuraba[1], Jun Nakata[1], Mikihiko Oogane[1], Hitoshi Kubota[2], Yasuo Ando[1], Hiroaki Kato[1], Akimasa Sakuma[1], Terunobu Miyazaki[1], [1]*Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan,* [2]*NanoElectronics Research Institute, AIST, Japan*

**FU-02 THE CHARACTERRISTICS OF MAGENTIC TUNNEL JUNCTIONS USING THE $Co_2MnSi$ HEUSLER ALLOY DEPENDING ON A COMPOSITIONAL VARIATION**
Keewon Kim[1], Tae-Wan Kim[2], Soon-Ju Kwon[1], [1]*Department of Materials Science and Engineering, POSTECH, Republic of Korea,* [2]*Devices Lab. Samsung Advanced Institute of Technology (SAIT), Republic of Korea*

**FU-03 HALF-METAL-POLYMER MAGNETORESISTIVE COMPOSITE**

Sanjay Mishra[1], Kartik Ghosh[2], Joe Losby[1], Ted Kehl[2], Ann Viano[3], *[1]Department of Physics, The University of Memphis, United States of America, [2]Department of Physics, Astronomy, and Materials Science, Southwest Missouri State University, United States of America, [3]Department of Physics, Rhodes College, United States of America*

**FU-04 MAGNETIC AND ELECTRONIC PROPERTIES OF $Fe_{1.2}Ti_{0.8}O_3/Fe_2O_3$ BILAYERED FILMS**

Tatsuo Fujii, Yusuke Takada, Makoto Nakanishi, Jun Takada, *Dep. Appl. Chem. Okayama Univ., Japan*

**FU-05 MAGNETIC AND ELECTRICAL TRANSPORT PROPERTIES OF $Fe_3O_4$ THIN FILM AND NANOWIRE**

Li Hongliang[1], Wu Yihong[1], Teo Kie Leong[1], Guo Zaibing[2], Wang Shijie[3], Veres Teodor[4], *[1]Dept. of Electrical and Computer Engineering, National University of Singapore, Singapore, [2]Data Storage Institute, Singapore, Singapore, [3]Institute of Materials Research and Engineering, Singapore, [4]Industrial Materials Institute, National Research Council, Canada*

**FU-06 EFFECTS OF SINTERING TEMPERATURE ON THE MAGNETORESISTANCE AND MICROSTRUCTURE OF THE MIXTURE OF $Fe_3O_4$ AND Cu-FERRITE POWDER**

C. Y. Chou[1], P. C. Kuo[1], Y. D. Yao[2], C. H. Huang[1], J. W. Chen[3], *[1]Institute of Materials Science and Engineering and Center for Nanostorage Research, National Taiwan University, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan, [3]Department of Physics, National Taiwan University, Taiwan*

**FU-07 EFFECTS OF IMPURITY DOPING IN $CrO_2$**

Katsuhiko Suzuki[1], Yuji Satoh[1], Makoto Itoh[1], Manabu Matsubara[2], Anjyu Sawada[3], *[1]Miyagi National Colege of Technology, Japan, [2]Nihon Ceratec Co. Ltd., Japan, [3]Dept. of Physics, Kyoto Univ., Japan*

**FU-08 MR EFFECTS IN HALF METALLIC $CrO_2/MoO_2$ MIXTURES**

Yoshihide Kimishima, *Dept. of Phys., Graduate School of Engineering, Yokohama National University, Japan*

**FU-09 STRUCTURE TUNING AND MAGNETOTRANSPORT PROPERTIES IN THE SYSTEM $(Ba_{2-2x}Sr_{2x})FeMoO_6$**

Jen-Bin Shi, Y. Y. Fan, P. H. Peng, F. C. Jou, C. Y. Lee, *Dept. of Electonics Engineering, Feng-Chia University, Taiwan*

**FU-10 CURRENT-INDUCED ELECTRORESISTANCE IN CMR MATERIALS $La_{1-x}Ba_xMnO_3$**

Feng-Xia[1], Feng-Xia Hu[2], Ju Gao[2], Zhi-He Wang[3], *[1]Department of Physics, The University of Hong Kong, China, [2]Department of Physics, Capital Normal University, China, [3]Department of Physics, Nanjing University, China*

**FU-11 VARIATION OF TRANSPORT PROPERTY IN MAGNETORESISTIVE POLYCRYSTALLINE $La_{0.7-x}Ln_xPb_{0.3}MnO_3$ (Ln=Pr, Nd, Gd, Dy, Sm and Y)**

San-Lin Young, *Dep. of Electrical Eng., Hsiuping Institute of Technology, Taiwan*

**FU-12 INFRARED-ACTIVE PHONONS OF $HoMn_{1-x}Co_xO_3$ (x= 0-0.8)**

Feng Gao, Xiao Lin Wang, M. Farhoudi, Roger A. Lweis, Shi Xue Dou, *Institute for Superconducting & Electronic Materials, University of Wollongong, Australia*

**FU-13 ENHANCEMENT OF FERROMAGNETIC INTERACTIONS IN MULTIFERRIC $(Tb_{1-x}Na_x)MnO_3$ SYSTEM**

T. S. Chan[1], R. S. Liu[1], Y. H. Lien[2], C. Y. Huang[2], J. G. Lin[3], J. M. Chen[4], *[1]Department of Chemistry and Center for Nano Storage Research, Taiwan, [2]Taiwan Spin Research Center, National Chung Cheng University, Taiwan, [3]Center for Condensed Matter Sciences, National Taiwan University, Taiwan, [4]National Synchrotron Radiation Research Center, Taiwan*

**FU-14 STRUCTURAL AND MAGNETIC PROPERTIES OF $La_{1-x}Sr_xCoO_3$**

Kwon Kuk. Yu[1], Jung Soo. Park[1], Hea Ryon Bae[1], Jea Yong. Kim[1], Young Pak Lee[1], Youn Seoung Lee[2], Ji Hoon Kang[3], *[1]Quantum Photonic Science Research Center and Department of Physics, Hanyang University, Republic of Korea, [2]Division of information Communication and Computer Engineering, Hanbat National University, Republic of Korea, [3]Samsung Electronics Co., Ltd. Process Development Team Memory Division, Republic of Korea*

**FU-15 EPR AND RESISTIVITY STUDY OF $Pr_{0.7}Ba_{0.3}MnO_3$ MANGANITES**

A. N. Ulyanov[1], H. D. Quang[1], N. E. Pismenova[2], S. C. Yu[1], *[1]Department of Physics, Chungbuk National University, Republic of Korea, [2]Donetsk Physico-Technical Institute of National Academy of Sciences, Ukraine*

**FU-16 EFFECTS OF VANADIUM DOPING ON THE MAGNETIC PROPERTIES OF $La_{0.7}Ca_{0.3}MnO_3$**

KyungHunn Han, Sang Yoon Park, Kwon Kuk Yu, Jung Soo Park, Young Pak Lee, *Quantum Photonic Science Research Center and Department of Physics, Hanyang University, Republic of Korea*

**FU-17 MAGNETOCALORIC PROPERTIES OF $La_{1-x}Pb_xMnO_3$ (x=0.1, 0.2, 0.3) COMPOUNDS**

Seong-Gi Min[1], Kyeong-Sup Kim[1], Seong-Cho Yu[1], Hang-Suk[2], Seoung-Won Lee[3], *[1]Depr. of Physics, Chungbuk Nat'l University, Republic of Korea, [2]Korea Insitute of Energy research, Republic of Korea, [3]Dept. of Metallurgy of Engineering, Chungnam Nat'l University, Republic of Korea*

**FU-18 INFLUENCE OF A-SITE SUBSTITUTION ON THE EPR PARAMETERS OF $La_{0.7}A_{0.3}MnO_3$ (A=Sr, Ba) COMPOUNDS**

T. L. Phan[1], N. V. Khiem[2], J. Zidanic[1], N. X. Phuc[3], S. C. Yu[1], *[1]Department of Physics, Chungbuk National University, Republic of Korea, [2]Department of Natural Science, Hongduc University, Thanhhoa, Viet Nam, [3]Institute of Materials Science, Academy of Science and Technology of Vietnam, Hanoi, Viet Nam*

**FU-19 MAGNETORESISTANCE AND MAGNETOCALORIC EFFECTS IN $La_{0.7}Sr_{0.3}Mn_{0.8}Ti_{0.2}O_3$**

N. V. Khiem[1], L. V. Bau[1], T. L. Phan[2], N. V. Dai[3], N. X. Phuc[3], S. C. Yu[2], *[1]Department of Natural Science, Hongduc University, Viet Nam, [2]Department of Physics, Chungbuk National University, Republic of Korea, [3]Institute of Materials Science, VAST, Viet Nam*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FV**

## Ferrites and Other Materials

**A. Morisako**

Shinshu University

**FV-01 MECHANICAL AND MAGNETIC PROPERTIES OF MULTILAYER FERRITE**

Juji Kato, Rei Hanamura, Masayuki Inagaki, Yoshio Matsuo, *R&D, FDK Corporation, Japan*

**FV-02 ANALYSIS OF POWER LOSS IN Ni-Cu-Zn FERRITES**

Etsuo Otsuki, Jeong-Su Kim, *R & D Center, Samwha electronics co.,LTD, Republic of Korea*

**FV-03 ACCURATE DETERMINATION OF DIELECTRIC PROPERTIES FOR Mn-Zn TOROIDS**

Daming Zhang, Chek Fok Foo, *Nanyang Technological University, Singapore*

**FV-04 EFFECTS OF $P_2O_5$ ADDITION ON MANGANESE ZINC FERRITES**

Hua Su, Huai Wu Zhang, Xiao Li Tang, Xubo Dai, *Dept. of Micro-Electronics and Solid-Electronics, University of Electronic Science and Technology, China*

**FV-05 A CALCULATION OF EXCHANGE INTERACTIONS AND ELECTRONIC STRUCTURE OF NICKEL FERRITE**

Xu Zuo[1], Shao Lin Yan[1], Bernardo Barbiellini[2], Vincent G. Harris[3], Carmine Vittoria[3], *[1]College of Information Technical Science, Nankai University, China, [2]Physics Department, Northeastern University, United States of America, [3]Department of Electrical and Computer Engineering, Northeastern University, United States of America*

**FV-06 FABRICATION TECHNIQUE FOR OVER 10 MICRONS THICK FERRITE PARTICULATE FILM AT ROOM TEMPERATURE**

Shuichiro Hashi[1], Nobuo Takada[1], Kazuhiro Nishimura[2], Osamu Sakurada[1], Shunji Yanase[1], Yasuo Okazaki[1], Mitsuteru Inoue[2], *[1]Dept. of Materials Science & Technology, Gifu University, Japan, [2]Dept. of Electrical & Electronic Engineering, Toyohashi University of Technology, Japan*

**FV-07 EFFECT OF Cu ION ON THE FORMATION AND MAGNETIC PROPERTIES OF NANOCRYSTALLINE MAGNETITE PREPARED IN AN AQUEOUS SOLUTION**

Taegyung Ko[1], Seung Han Hyun[1], Hyeon Yoon[2], Kyusuk Han[1], Jae-Hee Oh[1], *[1]School of Materials Science and Engineering, Inha University, Republic of Korea, [2]Hazardous Substances Research Team, Korean Basic Sciences Institute, Republic of Korea*

**FV-08 EFFECT OF ORGANIC MOLECULES ABSORPTION IN THE MAGNETIC PROPERTIES OF IRON OXIDE NANOPARTICLES**

Dimitrios Niarchos, Panagiotis Dallas, Petridis Dimitrios, *Institute Of Materials Science NRSC Demokritos, 15310 Agia Paraskevi Athens, Greece*

**FV-09 EVOLUTION OF MAGNETIC AND OPTICAL PROPERTIES IN SPINEL FERRTIE $Fe_xCo_{3-x}O_4$ THIN FILM**

Kwang Joo[1], Young Ran Park[1], Geun Young Ahn[2], Chul Sung Kim[2], Jae Yun Park[3], *[1]Department of Physics, Konkuk University, Republic of Korea, [2]Department of Physics, Kookmin University, Republic of Korea, [3]Department of Materials Science and Engineering, University of Incheon, Republic of Korea*

**FV-10 LOW TEMPERATURE SINTERING OF HEXAGONAL FERRITES FOR PREPARATION OF AN ULTRAHIGH FREQUENCY CHIP INDUCTOR**

Osamu Kimura[1], Kazuo Shoji[2], Kouji Kikuhara[3], Hiroshi Maiwa[3], *[1]Colabolative Research Center, Ashikaga Institute Of Technology, Japan, [2]Dept. of Electrical and Electronic Engineering, Ashikaga Institute of Technology, Japan, [3]Dept. of Materials Science and Engineering, Shonan Institute of Technology, Japan*

**FV-11 MOLECULAR DYNAMICS STUDY OF Bi SUBSTITUTION LIMIT IN YIG**

Tae-Youb Kim[1], Yohtaro Yamazaki[2], Masanori Abe[1], Teruyoshi Hirano[1], *[1]Dept. of Physical Electronics, Tokyo Institute of Technology, Japan, [2]Dept. of Innovative and Engineered Materials, Tokyo Institute of Technology, Japan*

**FV-12 INVESTIGATION OF THE MAGNETIC AFTEREFFECTS IN Ti-DOPED YIG**

Carlos Torres[1], Arnaldo Gonzalez Arias[2], Pablo Hernandez-Gomez[1], C.O. Kim[3], K. Hisatake[3], D. J. Kim[3], *[1]Dpto. Electricidad y Electronica, Universidad de Valladolid, Spain, [2]Dpto. Fisica Aplicada, Universidad de La Habana, Cuba, [3]Research Center for advanced Magnetic Materials, Chungnam National University, Republic of Korea*

**FV-13 SYNTHESIS AND MOSSBAUER STUDIES OF $TbFe_{1-x}Mn_xO_3$ NANOPARTICLES**

Bok Yeon Kum, Sung Yong An, Chul Sung Kim, *Dept. of Physics, Kookmin University, Republic of Korea*

**FV-14 STRUCTURAL AND MAGNETIC PROPERTIES OF $Fe_{3-x}Cr_xO_4$ FILMS GROWN ON MgO(001) BY MOLECULAR BEAM EPITAXY**

C.C. Huang, D.S. Lee, G. Chern, *Dept. of Physics, National Chung Cheng University, Taiwan*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FW**

**Patterned Nanostructures II**

**K. Rhie**

Korea University

**N. Inaba**

Yamagata University

**FW-01 DOMAIN WALL DEVICE OF PERMALLOY SUBMICRON HALF-RING IN SERIES WIRE**

Chwen. Yu[1], Y. Liou[1], S.F. Lee[1], E.W. Huang[1], D.C. Chen[2], K.W. Cheng[1], Y.D. Yao[1], C.R. Chang[3], *[1]Institute. of Physics, Academia Sinica, Taiwan, [2]Dept. of Materials Science & Engineering, National Chiao Tung University, Taiwan, [3]Dept.of Physics, National Taiwan University, Taiwan*

**FW-02 SHAPE EFFECTS IN THE FERROMAGNETIC RESONANCE OF NANOSIZE RECTANGULAR PERMALLOY ARRAYS**

Martha Pardavi-Horvath[1], Caroline A Ross[2], Robert D McMichael[3], *[1]Dept. Electrical and Comp. Engineering, George Washington University, United States of America, [2]Dept. Materials Science and Engineering, Massachusetts Institute of Technology, United States of America, [3]Metallurgy Division, National Inst. of Standards and Technology, United States of America*

**FW-03 MAGNETIZATION PROCESS OF HIGH ANISOTROPY CoPt NANOSIZED DOTS**

Nobuaki Kikuchi[1], Rogelio Murillo[1], Cock Lodder[1], Kaname Mitsuzuka[2], Takehito Shimatsu[2], *[1]SMI, MESA, University of Twente, Netherlands, [2]RIEC, Tohoku University, Japan*

**FW-04 MICROMAGNETICS AND GALVANOMAGNETIC EFFECT IN PERMALLOY HONEYCOMB NANO-NETWORK**

Masaaki Tanaka[1], Kisho Kaneko[1], Eiji Saitoh[1], Hideki Miyajima[1], Takehiro Yamaoka[2], *[1]Dept. of Physics, Keio University, Japan, [2]SII NanoTechnology Inc., Japan*

**FW-05 DEMAGNETIZING FIELD EFFECT ON THE MAGNETIZATION REVERSAL PROCESS OF COBALT NANOMAGNETS**

Yun Song Huang[1], Navab Singh[2], Adekunle O. Adeyeye[1], *[1]Information Storage Materials Laboratory, Dept. of Electrical and Computer Engineering, National University of Singapore, Singapore, [2]Institute of Microelectronics, Singapore*

**FW-06 MAGNETIC DOMAIN STRUCTURE OF MICRO-PATTERNED PtMn/NiFe EXCHANGE BIAS BILAYERS**

K. Potzger[1], L. Bischoff[1], M. O. Liedke[2], B. Hillebrands[2], M. Rickart[3], P. Freitas[3], J. McCord[4], J. Fassbender[1], *[1]Forschungszentrum Rossendorf, Germany, [2]Fachbereich Physik, TU Kaiserslautern, Germany, [3]INESC MN, Portugal, [4]Leibniz Institute for Solid State and Materials Research IFW Dresden, Germany*

**FW-07 MAGNETIC PROPERTIES AND DOMAIN FORMATION IN AMORPHOUS FILMS ANISOTROPY PATTERNED BY ION IRRADIATION**

J. McCord[1], J. Fassbender[2], M. Frommberger[3], M.O. Liedke[2], R. Schaefer[1], E. Quandt[3], *[1]Leibniz Institute for Solid State and Materials Research - IFW Dresden, Germany, [2]Institut fuer Ionenstrahlphysik und Materialforschung - FZ Rossendorf, Germany, [3]Research Center CAESAR, Germany*

**FW-08 30nm-SCALE-FABRICATION OF MAGNETIC TUNNEL JUNCTIONS USING ELECTRON BEAM ASSISTED CVD HARD MASKS**

Shinji Isogami[1], Masakiyo Tsunoda[1], Migaku Takahashi[2], *[1]Dept. of Electronic Engineering, Tohoku University, Japan, [2]New Industry Creation Hatchery Center, Tohoku University, Japan*

**FW-09 NON-LOCAL VOLTAGE SIGNAL FOR NON-COLLINEAR MAGNETIZATION**

Jaroslav Hamrle[1], Takashi Kimura[1], Yoshichika Otani[2], *[1]FRS, RIKEN, Japan, [2]ISSP University of Tokyo, Japan*

**FW-10 MAGNETIC PROPERTIES IN EPITAXIAL $L1_0$ FePt DOT ARRAYS**

Takeshi Seki[1], Toshiyuki Shima[1], Kay Yakushiji[1], Koki Takanashi[1], Guo Q. Li[2], Syunji Ishio[2], *[1]Institute for Materials Research, Tohoku Univ., Japan, [2]Venture Business Laboratory, Akita Univ., Japan*

**FW-11 STUDY ON MICRO-FABRICATION PROCESSES IN CoFeB/MgO/CoFeB MAGNETIC TUNNEL JUNCTIONS**

Hiroki Maehara[1], Tomoaki Osada[1], Mihoko Doi[1], David D. Djayaprawira[1], Yoshimitsu Kodaira[1], Naoki Watanabe[1], Hitoshi Kubota[2], Akio Fukushima[2], Shinji Yuasa[2], Koji Ando[2], *[1]Anelva Corporation, Japan, [2]National Institute of Advanced Industrial Science and Technology (AIST), Japan*

**Apr. 7** **Event Hall**

**13:30-17:00** **Session FX**

## Shielding and Magnetic Particles

**K. Yamazaki**

Takenaka Corporation

**FX-01 PORTABLE COMPREHENSIVE MAGNETIC SHIELDING CYLINDER FOR WEAK MAGNETIC FIELD SENSOR TESTING IN AN ISLAND FREE OF AC NOISE**

Xiao Ping Li[1], Wu Chun Ng[1], Jie Fan[1], Victor Vvedensky[2], Alexander Getman[3], *[1]Dept of Mechanical Engineering, National University of Singapore, Singapore, [2]Kurchatov Institute, Moscow, Russian Federation, [3]Faculty of Physics, Moscow State University, Russian Federation*

**FX-02 PROPOSAL AND THEORETICAL EVALUATION OF THE ACTIVE SHIELD WITH SELF-TUNABLE LOOP-CURRENT ARRAY**

Konrad Goleman, Ichiro Sasada, *Kyushu University, Japan*

**FX-03 THE EFFECT OF MAGNETIC SHAKING ON NON-ORIENTED SILICON STEELS**

Kunihisa Tashiro, Mizuki Nagano, Takayuki Kimura, Ichiro Sasada, *Kyushu University, Japan*

**FX-04 A LOW-COST MAGNETIC SHIELD MADE FROM NON-ORIENTED SILICON STEEL**

Kunihisa Tashiro, Ichiro Sasada, *Kyushu University, Japan*

**FX-05 ACTIVE MAGNETIC SHIELDING WITH A MAGNETIC FIELD SENSOR**

Tetsuya Yamamoto, Toshikatsu Sonoda, Kiyotaka Tanaka, *Kinki University, Japan*

**FX-06 INCREMENTAL PERMEABILITY OF MU-METAL IN LOW MAGNETIC FIELDS FOR DESIGN OF MULTI-LAYER-TYPE OF MAGNETICALLY-SHIELDED ROOMS**

Keita Yamazaki[1], Kazuo Kato[1], Kazuhiro Muramatsu[2], Akira Haga[3], Koichiro Kobayashi[4], Kiyotaka Kamata[5], Koji Fujiwara[6], Takao Yamaguchi[7], *[1]Research & Development Institute, Takenaka Corporation, Japan, [2]Dept. of Electrical and Electronic Eng., Saga Univ, Japan, [3]Dept. of Electrical Eng. and Information Technology, Tohoku Gakuin University, Japan, [4]Dept. of Welfare Eng., Iwate University, Japan, [5]Institute of National Colleges of Technology, Japan, Japan, [6]Dept. of Electrical and Electronic Eng., Okayama University, Japan, [7]Daido Steel Co., Ltd., Japan*

**FX-07 MAGNETORHEOLOGY OF SYNTHESIZED CORE-SHELL STRUCTURED NANOPARTICLE**

Hyoung Jin Choi[1], I. B. Jang[1], J. Y. Lee[1], A. Pich[2], S. Bhattacharya[2], H. J. Alder[2], *[1]Dept. of Polymer Sci. and Eng., Inha University, Republic of Korea, [2]Inst. of Macromol. Chem. and Textile Chem., Dresden, Germany*

**FX-08 DECOMPOSITION OF ORGANIC SUBSTANCES USING MAGNETIC TITANIA PHOTOCATALYST PARTICLES**

Shuntaro Kurinobu[1], Ken-ichi Tsurusaki[2], Mitumasa Kimata[3], Masahiro Hasegawa[3], *[1]Dept. of Electronic and Electrical Engineering, Fukuyama University, Japan, [2]Dept. of Environment and Information Science, Fukuyama University, Japan, [3]Dept. of Chemistry and Chemical Engineering, Yamagata University, Japan*

**FX-09 THE SIMULATION OF FORCES ACTING ON PARTICLES AND THEIR TRAJECTORIES IN THE SURROUNDING OF THE ELLIPTIC CROSS-SECTION COLLECTOR IN MATRIX SEPARATOR**

Ryszard Goleman, *Faculty of Electrical Engineering and Computer Science, Lublin University of Technology, Poland*

**FX-10 PREPARATION OF MAGNETIC NANOPARTICLES FOR MAGNETIC FLUID HYPERTHERMIA**

Takashi Atsumi[1], Balachandran Jeyadevan[1], Yoshinori Sato[1], Kazuchika Tamura[2], Setsuya Aiba[3], Kazuyuki Tohji[1], *[1]Dept. of Environmental studies, Tohoku University, Japan, [2]Dept. of Dental Medicine, Hokkaido University, Japan, [3]Dept. Medicine, Tohoku University, Japan*

**FX-11 RESPONSIVENESS OF FREE SURFACE FLOW TO M-EMS EXCITING FREQUENCY**

Shoji Sato[1], Keisuke Fujisaki[2], *[1]Ohita Setubi Sekkei Corp., Japan, [2]Environmental & Process Technology Center, Nippon Steel Corp., Japan*

**FX-12 DOWNWARD FLOW DIFFUSION AND MENISCUS FLOW BY ELECTROMAGNETIC STIRRING**

Keisuke Fujisaki[1], Yasuji Tomizawa[2], *[1]Environment & Process Technology Center, Nippon Steel Corp., Japan, [2]Hirohata Branch, Taihei Kogyo Corp., Japan*

**Apr. 7** **Room 141/142**

## Session FZ
## Town Meeting

**M. Abe**

Tokyo Institute of Technology

***FZ-01 NEW APPLICATIONS OF MAGNETISM**

**18:00** Koichi Kitazawa, *Japan Science and Technologh Agency, Japan*

## Session GA
## Symposium on Spin Electronics Technology

**K. Ando**
National Institute of Advanced Industrial Science and Technology

**Y. Otani**
Institute for Solid State Physics, University of Tokyo / Frontier Research System, RIKEN (The Institute of Physical and Chemical Research)

***GA-01 9:30 COHERENT SPIN-DEPENDENT TUNNELING IN MAGNETIC TUNNEL JUNCTIONS WITH MgO(001) TUNNEL BARRIER**

Shinji Yuasa[1], Hitoshi Kubota[1], Akio Fukushima[1], Taro Nagahama[1], Toshikazu Katayama[1], Yoshishige Suzuki[2], Koji Ando[1], *[1]NanoElectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan, [2]Osaka University, Japan*

***GA-02 10:00 THEORY OF TUNNELING MAGNETORESISTANCE FOR EPITAXIAL SYSTEMS**

W. H. Butler[1,2], X.-G. Zhang[2], M. Chshiev[1], S. Vutukuri[1], T. C. Schulthess[2], *[1]MINT Center, University of Alabama, United States of America, Tuscaloosa, [2]Computer Science and Mathematics Division, ORNL, United States of America*

***GA-03 10:30 SPIN-TRANSFER IN MAGNETIC METALLIC NANOPILLARS**

Andrew D. Kent, *Department of Physics, New York University, United States of America*

***GA-04 11:00 CURRENT INDUCED MAGNETIZATION REVERSAL IN SEMICONDUCTORS**

Hideo Ohno, M. Yamanouchi, D. Chiba, F. Matsukura, *Tohoku University, Japan*

***GA-05 11:30 THEORETICAL ASPECTS ON COHERENT TUNNELING**

Stuart S. P. Parkin, *IBM, United States of America*

***GA-06 12:00 SPIN DEVICES FOR INTREGRATED CIRCUITS**

M. Tanaka, S. Sugahara, *Deptartment of Electronic Engineering, The University of Tokyo, Japan*

## Session GB
## Advanced Perpendicular Recording Media

**Y. Hosoe**
Hitachi Ltd.

***GB-01 9:30 NEW PERPENDICULAR MEDIA BY ENGINEERING THE THERMAL STABILITY AND WRITING CAPABILITY SEPARATELY**

Jian-Ping Wang, Weikang Shen, Jian Min Bai, Nadia M. Khan, *MINT Center & Electrical and Computer Engineering Department, University of Minnesota, United States of America*

**GB-02 10:00 MICROSTRUCTURE IMPROVEMENT OF THIN Ru UNDERLAYER FOR CoCrPt-$SiO_2$ GRANULAR PERPENDICULAR MEDIA**

Ryoichi Mukai, Takuya Uzumaki, Atsushi Tanaka, *Advanced Magnetic Recording Laboratory, Fujitsu Laboratories Ltd., Japan*

**GB-03 10:15 STACKED CoCrPt:$SiO_2$ LAYERS FOR PERPENDICULAR RECORDING MEDIA**

S.N. Piramanayagam, Jian Zhong Shi, Hai Bao Zhao, Chee Shong Mah, Jun Zhang, *Data Storage Institute, Singapore, Singapore*

**GB-04 10:30 Ru/Ru-OXIDE INTERLAYER FOR CoCrPtO PERPENDICULAR RECORDING MEDIA**

Unoh Kwon[1], Robert Sinclair[1], E.M.T. Velu[2], Sudhir Malhotra[2], Gerardo Bertero[2], *[1]Dept. of Materials Science and Engineering, Stanford University, United States of America, [2]Komag Inc., United States of America*

**GB-05 10:45 CoPtCr-$SiO_2$ PERPENDICULAR MEDIA WITH THE HIGH ORDER ENERGY TERM OF MAGNETIC ANISOTROPY FOR HIGH DENSITY RECORDING**

Takehito Shimatsu[1], Hideo Sato[1], Tadaaki Oikawa[1], Kaname Mitsuzuka[1], Yuki Inaba[1], Hajime Aoi[1], Hiroaki Muraoka[1], Yoshihisa Nakamura[1], Osamu Kitakami[2], Satoshi Okamoto[2], *[1]Research Institute of Electrical Communication, Tohoku University, Japan, [2]Institute of Multidisciplinary Research for Advanced Material, Tohoku University, Japan*

**GB-06 11:00 PERPENDICULAR RECORDING CoPtCrO COMPOSITE MEDIA WITH PERFORMANCE ENHANCEMENT CAPPING LAYER**

Gunn Choe, Min Zheng, B. Ramamurthy Acharya, E. Noel Abarra, *MMC Technology, United States of America*

**GB-07 11:15 OPTIMIZATION OF EXCHANGE SPRING PERPENDICULAR RECORDING MEDIA**

Dieter Suess, Thomas Schrefl, Markus Kirschner, Gino Hrkac, Josef Fidler, *Vienna University of Technology, Institute of Solid State Physics, Austria*

**GB-08 11:30 GENERALIZED deltaHC-METHOD FOR THE DETERMINATION OF INTRINSIC SWITCHING FIELD DISTRIBUTIONS IN PERPENDICULAR MEDIA**

Andreas Berger[1], Byron Lengsfield[1], Yoshihiro Ikeda[1], Yun-Hao Xu[2], Eric E. Fullerton[1], *[1]San Jose Research Center, Hitachi Global Storage Technologies, United States of America, [2]Department of Electrical and Computer Engineering, University of Minnesota, United States of America*

**GB-09 11:45 REDUCTION OF GRAIN SIZE OF Co/Pd MULTILAYERED MEDIA ON Pd SEEDS WITH CONTROLLED MORPHOLOGY BY ELECTROCHEMICAL PROCESS**

Jun Kawaji[1], Mutsumi Tanaka[1], Koji Kimura[1], Toru Asahi[1], Takayuki Homma[1], Toshihiro Tsumori[2], Tetsuya Osaka[1], *[1]Graduate school of Science and Engineering, Waseda University, Japan, [2]Shin-Etsu Chemical Co., Ltd., Japan*

**GB-10 12:00 MATERIAL DEVELOPMENT OF NON-ERROMAGNETIC ELEMENT BY DIFFUSION ANALYSES FOR CoCrPt POST-ANNEALED PERPENDICULAR MEDIA**

Norikazu Itagaki, Shin Saito, Migaku Takahashi, *Dept. of Electronic Engineering, Tohoku University, Japan*

**GB-11 12:15 TILTED MAGNETIZATION IN Cr/CoCrPt THIN FILM RECORDING MEDIA**

Antony Ajan, A. Inomata, W. Yamagishi, *Advanced Magnetic Recording Laboratory, Fujitsu Laboratories, Ltd., Japan*

**Apr. 8** **Room 234**

## Session GC
## Coding and Recording Channels

**P.H. Siegel**
University of California, San Diego

***GC-01 9:30 ADVANCED CHANNEL DETECTION AND ITERATIVE DECODING FOR PERPENDICULAR RECORDING**

Weijun Tan, Haitao Xia, J. R. Cruz, *The University of Oklahoma, United States of America*

**GC-02 10:00 TURBO EQUALIZATION UTILIZING SOFT DECISION FEEDBACK**

Farshid Rafiee Rad, Jaekyun Moon, *Dept. of Electrical and Computer Engineering, Univ. of Minnesota, United States of America*

**GC-03 10:15 BEYOND PRML: LINEAR-COMPLEXITY TURBO EQUALIZATION USING THE SOFT-FEEDBACK EQUALIZER**

Elizabeth Chesnutt[1], Renato R. Lopes[2], John R. Barry[1], *[1]Georgia Institute of Technology, United States of America, [2]University of Campinas, Brazil*

**GC-04 10:30 SOFT-OUTPUT DETECTOR FOR PARTIAL-ESPONSE CHANNELS USING VECTOR QUANTIZATION**

Brian M. Kurkoski[1], Paul H. Siegel[2], Jack K. Wolf[2], *[1]Dept. of Information Engineering, University of Electro-Communications, Japan, [2]Center for Magnetic Recording Research and Dept. of Electrical and Computer Engineering, Univ. of California San Diego, United States of America*

**GC-05 10:45 A NEW PERFORMANCE EVALUATION TECHNIQUE FOR ITERATIVELY DECODED MAGNETIC RECORDING SYSTEMS**

Naveen Mysore[1], Mehmet Akcakaya[1], Jan Bajcsy[1], Hisashi Kobayashi[2], *[1]Dept. of Electrical and Computer Engineering, McGill University, Canada, [2]Dept. of Electrical Engineering, Princeton University, United States of America*

**GC-06 11:00 FIELD PROGRAMMABLE GATE ARRAY-BASED INVESTIGATION OF THE ERROR FLOOR OF LOW DENSITY PARITY CHECK (LDPC) CODES FOR MAGNETIC RECORDING CHANNEL**

Ling Yan Sun[1], Hongwei Song[2], B.V.K. Vijaya Kumar[1], Zak Keirn[2], *[1]ECE Department, Carnegie Mellon Univesity, United States of America, [2]Agere Systems, United States of America*

**GC-07 11:15 AN EFFECTIVE ERROR CORRECTION USING A COMBINATION OF ALGEBRAIC GEOMETRIC CODES AND PARITY CODES FOR HDD**

Seiichi Mita[1], Hajime Matsui[1], Masaharu Kondo[2], *[1]Toyota Technological Institute, Japan, [2]Storage Technology Research Center, Hitachi, Ltd., Japan*

**GC-08 11:30 A NEW k-CONSTRAINT STRATEGY COMBINED WITH POST-VITERBI PROCESSING FOR PERPENDICULAR RECORDING**

Jihoon Park, Jaekyun Moon, *Dept. of Electrical and Computer Engineering, University of Minnesota, United States of America*

**GC-09 11:45 LOW-DENSITY PARITY-CHECK CODES WITH VARIABLE RATE AND RANDOMIZED CONSTRAINTS FOR ADVANCED MAGNETIC TAPE RECORDING**

Zong Wang Li, Jin Xie, B.V.K. Vijaya Kumar, *Data Storage Systems Center (DSSC), Carnegie Mellon University, United States of America*

**GC-10 12:00** **ROBUSTNESS OF PER-SURVIVOR ITERATIVE TIMING RECOVERY IN PERPENDICULAR RECORDING CHANNELS**

Piya Kovintavewat[1], John R. Barry[2], M. Fatih Erden[3], Erozan M. Kurtas[3], *[1]Faculty of Science and Technology, Nakhon Pathom Rajabhat University, Thailand, [2]Dept. of Electrical and Computer Engineering, Georgia Institute of Technology, United States of America, [3]Channels Dept., Seagate Technology, United States of America*

**GC-11 12:15** **OPTIMAL TRAINING SYMBOL PLACEMENT FOR FREQUENCY ACQUISITION ON MAGNETIC RECORDING CHANNELS**

Aravind R. Nayak[1], John R. Barry[2], Steven W. McLaughlin[2], *[1]Agere Systems, United States of America, [2]School of ECE, Georgia Institute of Technology, United States of America*

**Apr. 8** **Room 224**

## Session GD
## Exchange Biasing and Fast Switching I

**R. Chantrell**

Physics Department, York University

***GD-01 9:30** **TUNNELING OF SPIN WAVES THROUGH A MAGNETIC FIELD INHOMOGENEITY**

Burkard Hillebrands[1], Alexandr Serga[1], Alexander Andre[1], Vladislav E. Demidov[1], Mikhail P. Kostylev[1], Sergej O. Demokritov[2], Andrei N. Slavin[3], *[1]Technische Universitaet Kaiserslautern, Germany, [2]Institut fuer Angewandte Physik, Westfaelische Wilhelms-Universitaet Muenster, Germany, [3]Department of Physics, Oakland University, United States of America*

**GD-02 10:00** **MAGNETIZATION SWITCHING DYNAMICS DEPENDING ON AS-PATTERNED MAGNETIZATION STATE IN MAGNETIC THIN FILM ELEMENTS**

Byoung C. Choi[1], Y. K. Hong[2], M. H. Park[2], H. Han[2], S. H. Gee[2], G. W. Donohoe[3], *[1]Dept. of Physics & Astronomy, University of Victoria, Canada, [2]Dept. of Materials Science and Engineering, University of Idaho, United States of America, [3]Dept. of Electrical and Computer Engineering, University of Idaho, United States of America*

**GD-03 10:15** **INCREASED MAGNETIC DAMPING OF PERMALLOY UPON Cr IMPLANTATION**

J. Fassbender[1], J. McCord[2], M. Weisheit[2], R. Mattheis[3], *[1]Forschungszentrum Rossendorf, Germany, [2]Leibniz Institute for Solid State and Materials Research IFW Dresden, Germany, [3]Institute fuer Physikalische Hochtechnologie Jena e. V., Germany*

**GD-04 PHENOMENOLOGICAL DAMPING MODELS AS**
**10:30 DRIVE TO EQUILIBRIUM**

Michael Kraemer, Carl E. Patton, *Department of Physics, Colorado State University, United States of America*

**GD-05 SMALL AND LARGE ANGLE PRECESSION IN**
**10:45 EXCHANGE BIASED BILAYERS**

Markus C. Weber[1], Hans Nembach[1], Burkard Hillebrands[1], Juergen Fassbender[2], *[1]Fachbereich Physik und Forschungsschwerpunkt MINAS, Technische Universitaet Kaiserslautern, Germany, [2]Institut fuer Ionenstrahlphysik und Materialforschung, Forschungszentrum Rossendorf, Germany*

**GD-06 FIELD DYNAMICS AND THERMAL ACTIVATION IN**
**11:00 EXCHANGE-BIASED Co/Pt MULTILAYERS**

Jerome Moritz, Sebastiaan Van Dijken, Steven M. Watts, J.M.D. Coey, *SFI Trinity Nanoscience Laboratory, Physics Department, Trinity College, Ireland*

**GD-07 EFFECT OF UNDERLAYER ON FORMATION OF $L1_2$**
**11:15 PHASE AND RESULTANT GIANT EXCHANGE ANISOTROPY IN Mn-Ir/Co-Fe BILAYERS**

Masakiyo Tsunoda[1], Ken-ichi Imakita[1], Migaku Takahashi[2], *[1]Dept. of Electronic Engineering, Tohoku University, Japan, [2]New Industry Creation Hatchery Center, Tohoku University, Japan*

**GD-08 INFLUENCE OF LAYERING OF NiO/NiFe ON**
**11:30 EXCHANGE BIAS**

Alka V. Kuanr[1], B. K. Kuanr[2], *[1]College of Applied Science for Women, Delhi University, India, [2]Physics Department, University of Colorado at Colorado Springs, United States of America*

**GD-09 LASER ANNEALING IN EXCHANGE-BIASED FILMS**
**11:45 WITH OUT-OF-PLANE AND IN-PLANE MAGNETIC ANISOTROPY**

S. D. Choi[1], S. W. Kim[1], D. H. Jin[1], D. K. Yun[1], M. S. Lee[1], J. H. Ahn[1], H. W. Joo[1], K. A. Lee[1], S. S. Lee[2], D. G. Hwang[2], *[1]Department of Physics, Dankook University, Republic of Korea, [2]Department of Computer and Electronic Physics, Sangji University, Republic of Korea*

**GD-10 XMCD STUDIES OF (001) ORIENTED NiFe / $Mn_{1-x}Pt_x$**
**12:00 EXCHANGE COUPLED BILAYERS**

Toshihiko Yamato[1], Taisuke Kume[1], Takeshi Kato[1], Tetsuya Nakamura[2], Yuji Fujiwara[3], Satoshi Iwata[4], Shigeru Tsunashima[1], *[1]Dept. of Electronics, Nagoya University, Japan, [2]SPring-8/JASRI, Japan, [3]Dept. of Physics Engineering, Mie University, Japan, [4]CCRAST, Nagoya University, Japan*

**GD-11 ASYMMETRIC MOTION OF AN EXCHANGE-BIASED**
**12:15 MAGNETIC DOMAIN WALL IN MAGNETIC WIRES**

J.L. Menendez[1], D. Ravelosona[1], C. Chappert[1], R. Stamps[2], *[1]Institut d'Electronique Fondamentale, Orsay, France, [2]University of Western Australia, Australia*

## Session GE
## Nanostructured Hard Magnetic Materials

**M. Katter**
Materials and Fundamental Research Permanent Magnets,
VACUUMSCHMELZE GmbH & Co. KG

**H.K. Kwon**
Pukyong National University

**GE-01 9:30** **COMPACTION OF NANO-STRUCTURED SmCo/Fe MAGNETS**
Madhur Sachan, Sara A. Majetich, *Physics Dept., Carnegie Mellon University, United States of America*

**GE-02 9:45** **EVOLUTION OF MAGNETIC MICROSTRUCTURE WITH COERCIVITY IN SmCo 2:17 MAGNETS FOR HIGH TEMPERATURE APPLICATION**
O. Gutfleisch, K. Khlopkov, A. Yan, R. Schaefer, K.-H. Mueller, L. Schultz, *IFW Dresden, Germany*

**GE-03 10:00** **EFFECTS OF Nb ADDITION ON STRUCTURAL AND MAGNETIC PROPERTIES OF Fe-B/$Nd_2Fe_{14}B$ BASED NANOCOMPOSITE MAGNETS**
Toshio Miyoshi, Hirokazu Kanekiyo, Satoshi Hirosawa, *NEOMAX Co., Ltd, Japan*

**GE-04 10:15** **A COMPARATIVE STUDY OF THE MICROSTRUCTURE AND MAGNETIC PROPERTIES OF MELT-SPUN $RE_2Fe_{14}B$/α-Fe AND $RE_2Fe_{14}B/Fe_3B$ NANOCOMPOSITES**
Zhong Min Chen, David N. Brown, Bao-Min Ma, Peter Campbell, *Magnequench Technology Center, Magnequench Inc., Singapore*

**GE-05 10:30** **MAGNETIC PROPERTIES AND MICROSTRUCTURES OF $Fe_3B/Pr_2Fe_{14}B$-TYPE NANOCOMPOSITE MAGNETS WITH Co AND Cr ADDTIONS**
Cai-yin You, D. H. Ping, K. Hono, *Materials Engineering Lab., National Institute for Materials Science, Japan*

**GE-06 10:45** **MAGNETIC PROPERTIES OF HIGH COERCIVITY MELT-SPUN DIDYMIUM-Fe-Co-Nb-V-Tb-B SYSTEM RIBBONS AND THEIR BONDED MAGNETS**
Ko Furusawa, Hiroshi Yamamoto, *School of Science & Technology, Meiji University, Japan*

**GE-07 11:00** **MANIPULATION OF TEMPERATURE DEPENDENCE OF COERCIVITY IN ISOTROPIC NANOCRYSTALLINE PERMANENT MAGNETS**
Yasutaka Shigemoto, Satoshi Hirosawa, *Research and Development Division, NEOMAX Co., Ltd., Japan*

**GE-08 11:15 MICROSTRUCTURE OF NANOCOMPOSITE R-Fe-B DIE-UPSET MAGNETS (R = Pr, Nd) PRODUCED FROM MECHANICALLY MILLED POWDERS**

Yong Zhang, Alexander M. Gabay, George C. Hadjipanayis, *Dept. of Physics & Astronomy, University of Delaware, United States of America*

**GE-09 11:30 MAGNETOCRYSTALLINE ANISOTROPY OF PARTIALLY ORDERED Fe-Pt NANOPARTICLES DIRECTLY SYNTHESIZED BY MICROWAVE-POLYOL METHOD**

Yoshitaka Kitamoto[1], Rumiko Minami[1], Tsukasa Chikata[2], Shunsaku Kato[2], *[1]Department of Innovative and Engineered Materials, Tokyo Institute of Technology, Japan, [2]Research Institute for Solvothermal Technology, Japan*

**GE-10 11:45 EXCHANGE-COUPLED FePt/Fe BILAYERS WITH PERPENDICULAR MAGNETISATION**

Francesca Casoli, Franca Albertini, Simone Fabbrici, Claudio Bocchi, Lucia Nasi, Roberta Ciprian, Luigi Pareti, *IMEM - CNR, Italy*

**GE-11 12:00 MAGNETIC PROPERTIES OF Co/(CoNi)$Fe_2O_4$ NANOCOMPOSITE MAGNET POWDERS**

Satoshi Sugimoto, Kazuaki Haga, Toshio Kagotani, Koichiro Inomata, *Dept. of Materials Science, Graduate School of Engineering, Tohoku University, Japan*

**Apr. 8** **Room 133/134**

## Session GF
## Magneto-Optic and Other Magnetic Materials/Devices

**K. Sato**

Tokyo University of Agriculture and Technology

**GF-01 9:30 THE FARADAY EFFECT IN THREE-DIMENSIONAL OPAL PHOTONIC CRYSTALS**

Alexander V. Baryshev[1], Tsuyoshi Kodama[2], Kazuhiro Nishimura[2], Hironaga Uchida[2], Mitsuteru Inoue[3], *[1]Ioffe Physico-Technical Institute, Russian Federation, [2]Toyohashi University of Technoogy, [3]CREST, Japan Science and Technology, Japan*

**GF-02 9:45 MAGNETO-OPTIC SPATIAL LIGHT MODULATOR MADE BY SELECTIVE AREA GROWTH ON GARNET MASK REDUCED IN HYDROGEN ATMOSPHERE**

Katsuhiro Iwasaki[1], Tetsu Yamanaka[1], Kazuma Takahashi[1], Hiromitsu Umezawa[1], Mitsuteru Inoue[2,3], *[1]FDK Corporation, Japan, [2]Toyohashi University of Technology, Japan, [3]JST-CREST, Japan*

**GF-03 10:00 THERMAL ANNEALING OF MAGNETO-OPTICAL (Cd, Mn)Te WAVEGUIDE FOR WIDER OPERATION WAVELENGTH RANGE OF OPTICAL ISOLATOR**

Mukul C. Debnath, Vadym Zayets, Koji Ando, *Nanoelectronics Research Institute, AIST, Japan*

**GF-04 10:15 PHASE TRANSITIONS IN SINGLE-CRYSTAL $Tb_5Si_{2.2}Ge_{1.8}$**

Andrew P. Ring[1], Hattie L. Ziegler[1], T. Lagrasso[1], D. Schlagel[1], John E. Snyder[2], David C. Jiles[2], *[1]Materials and Engineering Physics Program, Ames Laboratory, United States of America, [2]Materials Science and Engineering Department, Iowa State University, United States of America*

**GF-05 10:30 LARGE MAGNETOCALORIC EFFECTS AND LANDAU COEFFICIENTS OF ITINERANT ELECTRON METAMAGNETIC $La(Fe_xSi_{1-x})_{13}$ COMPOUNDS**

Asaya Fujita, Kazuaki Fukamichi, *Dept. of Mater. Sci., Grad. Schl of Engng, Tohoku Univ., Japan*

**GF-06 10:45 MAGNETIC AND MAGNETOCALORIC PROPERTIES OF THE INTERMETALLIC COMPOUND TbNiAl**

Niraj K. Singh[1], K . G. Suresh[1], R. Nirmala[2], A. K. Nigam[2], S. K. Malik[2], *[1]Department of Physics, I.I.T. Bombay, Mumbai, India, [2]Tata Institute of Fundamental Research, Mumbai, India*

**GF-07 11:00 THE INFLUENCE OF COMPOSITION CHANGE ON STRUCTURAL AND MAGNETIC PROPERTIES OF NON-STOICHIOMETRIC Ni-Mn-Ga ALLOYS**

V. Nong, *Department of Molecular and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan*

**GF-08 11:15 THERMAL EXPANSION AND MAGNETOSTRICTION IN $Pr_5Ni_2Si_3$ COMPOUNDS**

Sang-Hoon Song[1], John E. Snyder[1], Dong Mei Wu[2], Thomas A. Lograsso[1], Kevin W. Dennis[2], R. William McCallum[1], Yuri Janssen[2], David C. Jiles[1], *[1]Dept. of Materials Science and Engineering, Iowa State University, United States of America, [2]Materials and Engineering Physics Program, Ames Laboratory, U. S. Dept. of Energy, United States of America*

**GF-09 11:30 FERROMAGNETIC AND DIELECTRIC BEHAVIOR OF Mn DOPED $BaCoO_3$**

Tomohiro Inoue, Toshiyuki Matsui, Norifumi Fujimura, Kenji Morii, *Graduate School of Engineering, Osaka Prefecture University, Japan*

**GF-10 11:45 STRUCTURES, SPIN GLASS AND SPIN STATES IN PEROVSKITE $GdMn_xCo_{1-x}O_3$ ($x<=0.5$)**

M. Mehdi Farhoudi[1], Xiao Lin Wang[2], *[1]Institute for Superconducting Electronic Materials, University of Wollongong, Australia, [2]Institute for Superconducting Electronic Materials, University of Wollongong, Australia*

**GF-11 12:00 EXCHANGE INTERACTION BETWEEN A FERROMAGNETIC SUBSTRATE AND ADSORBED METALLO-PORPHYRIN MOLECULES**

Andreas Scheybal[1], Trond Ramsvik[2], Rolf Bertschinger[1], Magali Vuaroqueaux[3], Thomas A. Jung[1], *[1]Laboratory for Micro- and Nanostructures, Paul Scherrer Institute, Villingen, Switzerland, [2]Swiss Light Source, Paul Scherrer Institute, Villingen, Switzerland, [3]L2MP-CNRS, Faculte des Sciences de St Jerome, Marseille, France*

**GF-12 12:15 EVALUATION OF A MICRO MOTOR WITH INTEGRATED MSM MATERIAL**

Matthias Hahn[1], Emmanouel Pagounis[2], Hans H. Gatzen[1], *[1]Institute for Microtechnology, Hanover University, Germany, [2]AdaptaMat Ltd., Finnland*

**Apr. 8** **Event Hall**

**8:30-12:00** **Session GP**

## Magnetic Recording System II

**T. Yamaguchi**

Hitachi Global Storage Technologies

**GP-01 ASYNCHRONOUS INTERPOLATED SERVO DETECTION ALGORITHMS**

Viswanath Annampedu[1], Pervez M Aziz[2], *[1]Agere Systems, Read Channel Architecture, United States of America, [2]Agere Systems, Serdes Channel Architecture, United States of America*

**GP-02 ACTUATED SUSPENSIONS WITH ENHANCED DYNAMICS FOR HDD**

G. K. Lau[1], H. Du[2], *[1]Delft University of Technology, Netherlands, [2]School of MPE, Nanyang Technology University, Singapore*

**GP-03 MEASUREMENT OF DYNAMIC AZIMUTH OF MOVING MEDIA IN TAPE DRIVES**

V. Kartik[1], Richard H. Dee[2], *[1]Department of Mechanical Engineering, Carnegie Mellon Univerisity, United States of America, [2]Storage Technology Corporation, United States of America*

**GP-04 ADAPTIVE IMC DESIGN FOR HDD SERVO CONTROL**

Qing-Wei Jia[1], Tong-Heng Lee[2], Ke-Xiu Liu[1], *[1]Seagate Technology International, Singapore, [2]National University of Singapore, Singapore*

**GP-05 DROPOUT COMPENSATION BY EQUALIZER SELECTION AND TIMING RECOVERY HANG-UP FOR MAGNETIC TAPE SYSTEMS**

Jin Xie, B.V.K. Vijaya, *DSSC, ECE Dept., Carnegie Mellon University, United States of America*

**8:30-12:00** **Session GQ**

## Sensors, Mostly CPP II

**K. Fukuda**

TDK Corporation

**GQ-01 MR ENHANCEMENT OF CPP-GMR BY CCP-NOL SPACER AND $Fe_{50}Co_{50}$ MAGNETIC LAYERS**

Hitoshi Iwasaki[1], Hideaki Fukuzawa[1], Hiromi Yuasa[1], Koichi Kubo[1], Katsuhiko Koi[1], Tomomi Funayama[2], Masayuki Takagishi[2], Yoichiro Tanaka[2], *[1]Corporate R&D Center, Toshiba Corporation, Japan, [2]Core Technology Center, Toshiba Corporation, Japan*

**GQ-02 IN-SITU OBSERVATION STUDY ON NANO CONSTRICTION SPACER NOL FOR CPPGMR BY CONDUCTIVE AFM**

Kousaku Miyake, Masato Izumi, Syouhei Kawasaki, Masaaki Doi, Nasashi Sahashi, *Department of Electronic Engineering, TOHOKU University, Japan*

**GQ-03 DIRECT OBSERVATION OF A CURRENT-CONFINED-PATH NANO-OXIDE-LAYER STRUCTURE BY THREE-DIMENSIONAL ATOM PROBE**

Hideaki Fukuzawa[1], Hitoshi Iwasaki[1], Yoichiro Tanaka[2], Robert M. Ulfig[3], David J. Larson[3], *[1]Corporate R&D Center, Toshiba Corporation, Japan, [2]Core Technology Center, Toshiba Corporation, Japan, [3]Imago Scientific Instruments Corporation, United States of America*

**GQ-04 SPIN DEPENDENT SCATTERING EFFECT IN CPP-GMR WITH CURRENT CONFINED PATH**

Hiromi Yuasa[1], Hideaki Fukuzawa[1], Masayuki Takagishi[2], Hitoshi Iwasaki[1], Yoichiro Tanaka[2], *[1]Toshiba Corporation, Corporate R & D Center, Japan, [2]Core Technology Center, Toshiba Corporation, Japan*

**GQ-05 BREAKDOWN BEHAVIOR OF CPP DEVICES WITH NANO-OXIDE CURRENT SCREENING LAYERS**

S. Maat[1], M.J. Carey[1], J.A. Katine[1], J.R. Childress[1], K. Hoshino[2], K. Watanabe[2], H. Hoshiya[2], K. Meguro[2], K. Nakamoto[2], *[1]San Jose Research Center, Hitachi Global Storage Technologies, United States of America, [2]Storage Technology Research Center, Hitachi, Ltd., Japan*

**GQ-06 SENSING CURRENT DEPENDENCE OF PEAK ASYMMETRY IN CPP-GMR HEADS**

Hiroyuki Katada, Katsumi Hoshino, Nobuo Yoshida, Kaori Suzuki, Katsuro Watanabe, Hiroyuki Hoshiya, Kazuhiro Nakamoto, *Storage Technology Research Center, Hitachi, Ltd., Japan*

**GQ-07 LOW RESISTANCE AND ENHANCED THERMAL AND ELECTRICAL STABILITY OF THE MAGNETIC TUNNEL JUNCTION WITH A Ti-ALLOYED Al-OXIDE BARRIER**

Jin-Oh[1], Seong-Rae Lee[1], Hyun-Joon Shin[2], *[1]Div. of Materials Science and Engineering, Korea University, Republic of Korea, [2]Pohang Accelerator Laboratory & Department of Physics, Pohang University of Science and Technology, Republic of Korea*

**GQ-08 ELEMENT SPECIFIC HYSTERESIS LOOPS OF Co AND Fe IN ANNEALED CoFe/Cu MULTILAYERS**

Mark S. Beal[1], Tom P. A. Hase[2], Sarah M. Thompson[1], Brian K. Tanner[2], Johannes C. Grabis[3], Hartmut Zabel[3], Chris H. Marrows[4], *[1]Dept of Physics, University of York, United Kingdom, [2]Dept of Physics, University of Durham, United Kingdom, [3]Ruhr-Universitat Bochum, Germany, [4]Univ Leeds, Sch Phys & Astron, EC Stoner Lab, Leeds, United Kingdom*

**GQ-09 REDUCTION OF A COERCIVE FIELD WITHOUT SUBSTANTIAL CURRENT SHUNT BY AN ADDITIONAL CoFeB LAYER IN GMR SPIN-VALVE**

Chung Hee Nam, Beong-Ki Cho, *Center for Frontier Materials, Dept. of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Republic of Korea*

**GQ-10 STUDY ON BEHAVIORS OF PINNED LAYER BY HIGH FIELD TRANSFER CURVE**

Sangmun Oh[1], K. Nishioka[2], H. Umezaki[2], H. Tanaka[1], T. Seki[1], S. Sasaki[1], K. Furusawa[1], *[1]Storage Technology Research Center, Hitachi, Ltd., Japan, [2]Hitachi Global Storage Technologies, Ltd., Japan*

**GQ-11 A STUDY OF NOISE EFFECTS DUE TO THE DIODE PROTECTION FOR SHIELD RESISTANCE MEASUREMENT OF GMR RECORDING HEADS**

Apirat Siritaratiwat[1], Damrongsak Tongsomporn[2], Komkrit Chooruang[1], Nitin Afzulpurkar[2], *[1]Department of Electrical Engineering, Khon Kaen University, Thailand, [2]Microelectronic Program, Asian Institute of Technology, Thailand*

**GQ-12 PROPERTIES OF SIDE-SHIELDED READ HEADS IN LONGITUDINAL AND PERPENDICULAR RECORDING**

Masahiko Hatatani, Yoshio Suzuki, Hiroyuki Katada, Nobuo Yoshida, Katsuro Watanabe, Kazuhiro Nakamoto, *Storage Technology Research Center, Hitachi, Ltd., Japan*

**8:30-12:00** **Session GR**

## Particulate & Tape, Thin Film Media

**N. Abarra**
MMC Tech

**GR-01 THE EXAMINATION OF NEWLY DEVELOPED METAL PARTICLE (MP) MEDIA FOR GREATER THAN 3Gbit/in$^2$-RECORDING IN GMR HEAD BASED TAPE SYSTEMS**

Noboru Sekiguchi[1], Kikuji Kawakami[2], Tadashi Ozue[2], Minoru Yamaga[1], Seiichi Onodera[2], *[1]Product Development Dept., CM Div., MSNC-RM-company, SONY co., Japan, [2]Advanced Tape Storage Development Dept., ME Div.,MSNC-RM-company, SONY co., Japan*

**GR-02 DEVELOPMENT OF NANOCAP (NANO COMPOSIT ADVANCED PARTICLES) TECHNOLOGY FOR HIGH DENSITY RECORDING**

Yuji Sasaki, Naoki Usuki, Kazutaka Matsuo, Mikio Kishimoto, *Development and Technology Division, Hitachi Maxell, Ltd., Japan*

**GR-03 PLAYBACK PERFORMANCE OF ULTRA HIGH CAPACITY TAPE MEDIA WITH NANOSIZED SPHERICAL METAL PARTICLES (NANOCAP)**

Tetsutaro Inoue[1], Kazuhiko Nakiri[1], Hiroyuki Mitsuhashi[1], Makoto Fukumoto[1], Tsugihiro Doi[1], Yuji Sasaki[2], Mikio Kishimoto[2], *[1]Advanced Tape Div., Hitachi Maxell, Japan, [2]Development & Technology Div., Hitachi Maxell, Japan*

**GR-04 SYNTHESIS OF NANO-SIZED SPHERICAL BARIUM FERRITE PARTICLES**

Sung-Hoon Gee[1], Yang-Ki Hong[1], Fred J. Jeffers[2], *[1]Dept. of Materials Science and Engineering, United States of America, [2]Advanced R & D, Iomega Corporation, United States of America*

**GR-05 DISTRIBUTION FUNCTIONS OF TWO-DIMENSIONALLY ORIENTED MAGNETIC PARTICLES**

Osamu Kohmoto, Takashi Yamane, Junji Miyoshi, *Dept. of Physics, Okayama University, Japan*

**GR-06 CORRELATION OF THERMAL STABILITY AND ANISOTROPY DISTRIBUTION IN DATA STORAGE TAPES PREPARED FROM ULTRA-FINE PARTICLES**

Hiroaki Nishino, Hiroshi Yamamoto, *Faculty of Science and Technology, Meiji University, Japan*

**GR-07 WRITABILITY ENHANCEMENT USING EXCHANGE SPRING MEDIA**

Natacha Supper, Eric E. Fullerton, David T. Margulies, Andreas Moser, Hoa Do, Andreas Berger, *Hitachi, GST San Jose Research Center, United States of America*

**GR-08 ROLE OF BOTTOM LAYER IN DOUBLE RECORDING FOR ANTIFERROMAGNETICALLY COUPLED LONGITUDINAL MEDIA**

Tokyo Li[1], Daiji Hasegawa[2], Shin Saito[2], Hirohisa Ohyama[1], Makoto Imakawa[1], Migaku Takahashi[2], *[1]Fuji Electric Storage Device Co. Ltd., Japan, [2]Dept. of Electronic Engineering, Tohoku University, Japan*

**GR-09 DUAL LAYER MAGNETIC RECORDING MEDIA: A PATHWAY FOR IMPROVING THE MAGNETIC AND PERFORMANCE CHARACTERISTICS OF THE STORAGE MEDIUM**

Ernesto E. Marinero, Hoa Do, Eric E. Fullerton, Manfred Schabes, Alex Taratorin, Hal Rosen, *Hitachi GST San Jose Research Center, United States of America*

**GR-10 OBLIQUE ION NANO-TEXTURING TECHNOLOGY FOR LONGITUDINAL RECORDING MEDIA**

Kenji Sato, Iwao Okamoto, Yoshito Kitamoto, Shoji Ishida, *Yamagata Fujitsu Ltd., Japan*

**GR-11 POISONING OF ORIENTATION RATIO ON NiP-COATED SUBSTRATES**

Thomas E. Karis, Xing-Cai Guo, Ernesto Marinero, Bing Yen, Bruno Marchon, *Hitachi GST, United States of America*

**GR-12 POSSIBILITY OF CoPtCr-$SiO_2$ LONGITUDINAL FLEXIBLE DISK MEDIA**

Ken-ichi Moriwaki, Kazuyuki Usuki, Makoto Nagao, *Research & Development Lab., Recording Media Products Div., Fuji Photo Film Co., Ltd., Japan*

**Apr. 8** **Event Hall**

**8:30-12:00** **Session GS**

## GMR and Current Induced Instabilities II

**K. Yagami**

Semiconductor Technology Development Group, SSNC, Sony corp.

**GS-01 THICKNESS DEPENDENCE OF INTERLAYER FRINGE FIELD COUPLING IN SUB MICRON NiFe/Cu MULTILAYERED PILLARS**

Ming Zhang, Yukio Nozaki, Kimihide Matsuyama, *Dept. of Electronics, Kyushu University, Japan*

**GS-02 INTERFACE INTERMIXING OF CoFe/IrMn AND IrMn/CoFe AND ITS INFLUENCE ON MAGNETORESISTIVE AND EXCHANGE COUPLING**

Jong Soo Kim, Seong-Rae Lee, *Div. of Materials Science and Engineering, Korea University, Republic of Korea*

**GS-03 CURRENT-PERPENDICULAR-TO-PLANE GIANT MAGNETORESISTANCE IN FePt/Au LAYERED STRUCTURES**

Takeshi Seki, Seiji Mitani, Kay Yakushiji, Toshiyuki Shima, Koki Takanashi, *Institute for Materials Research, Tohoku Univ., Japan*

**GS-04 PRESSURE DEPENDENCE OF MAGNETORESISTAMCE FOR Fe/Cr MULTILAYERS**

Kazufumi Suenaga[1], Syuhei Higashihara[1], Gendo Oomi[1], Kesami Saito[2], Seiji Mitani[2], Koki Takanashi[2], *[1]Dept. of Physics, Kyushu University, Japan, [2]Institute for Materials Research, Tohoku University, Japan*

**GS-05 CPP-GMR ENHANCEMENT IN SPIN VALVES BY A THIN Ru LAYER INSERTION**

Nobuki Tezuka, Shinya Abe, Koichiro Inomata, *Tohoku University, Japan*

**GS-06 MICROMAGNETIC ANALYSIS OF A MAGNETIC DOMAIN WALL IN A NANOCONTACT**

Takashi Komine[1], Tomohiro Takahashi[1], Satoshi Ishii[1], Ryuji Sugita[1], Tetsuo Muranoi[1], Yasuhiro Hasegawa[2], *[1]Dept. of Media and Telecomm. Eng., Ibaraki University, Japan, [2]Saitama University, Japan*

**GS-07 GMR AND MAGNETODYNAMICS OF MnIr SPIN VALVES DEPENDING ON GROWTH ORDER OF FM AND AFM LAYERS**

Chan-Gyu Lee[1], V.S. Gornakov[2], Bon-Heun Koo[1], Keesam Shin[1], *[1]School of Nano Advanced Materials Engineering, Republic of Korea, [2]Institute of Solid State Physics RAS, Russian Federation*

**GS-08 MODIFYING INTERLAYER COUPLING IN CoFe/Bi/Co TRILAYER JUNCTION BY POST-ANNEALING TREATMENTS**

Jen-Hwa Hsu[1], D. Sahu[1], Zhi-Long Xue[1], A. C. Sun[2], Cheng-Hsuan Chen[3], *[1]Dept. of Physics, National Taiwan University, Taiwan, [2]Dept. of Material Science & Engineering, National Taiwan Universirty, Taiwan, [3]Center for Condense Matter Science, National Taiwan University, Taiwan*

**8:30-12:00** **Session GT**

## Applications of Soft Magnetic Materials II

**S. Tanabe**
Advanced Technology R&D Center, Mitsubishi Electric Co.

**K. Yamada**
Saitama University

**GT-01 EFFECTS OF RF NOISE SUPPRESSION BY CARBON COATED PERMALLOY NANORODS ARRAY IN POROUS ANODIC ALUMINUM OXIDE**

Ki Hyeon Kim[1], Takashi Kyotani[2], Masahiro Yamaguchi[1], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan*

**GT-02 CHARACTERISTICS OF RF NOISE SUPPRESSOR USING Fe FILLED IN CARBON NANOTUBE**

Ki Hyeon Kim[1], Yung-Am Kim[2], Masahiro Yamaguchi[1], *[1]Dept. of Electrical and Communication Engineering, Tohoku University, Japan, [2]Faculty of Engineering, Shinshu University, Japan*

**GT-03 APPLICATION OF Co-BASED AMORPHOUS ALLOY RIBBONS WITH VARIOUS THICKNESSES TO A NOISE FILTER**

Satake Hirotaka[1], Masaki Nakamura[1], Shinsuke Horikoshi[1], Shiro Kambe[1], Osamu Ishii[1], Yoshihito Yoshizawa[2], *[1]Yamagata University, Japan, [2]Advanced Electronics Research Laboratory Hitachi Metals Ltd., Japan*

**GT-04 EXPERIMENTAL STUDY OF ELECTROMAGNETIC WAVE ABSORBING CONTROL OF COATING-TYPE MAGNETIC WOOD USING A GROOVING PROCESS**

Hideo Oka[1], Yu Kataoka[1], Fukumori Izumida[2], *[1]Dept. of Electrical & Electronic Engineering, Iwate University, Japan, [2]Iwate Industrial Research Institute, Japan*

**GT-05 EMBEDDED INDUCTOR USING Ni-Zn FERRITE FILM IN POLYMER SUBSTRATE**

Seok Bae, Hyung-Mi Jung, Jin-Seok Moon, Yasuhiko Mano, *EMD Lab., Central Research Center, Samsung Electro-Mechanics, Republic of Korea*

**GT-06 A SIMPLE PREDICTING METHOD FOR LOSSES OF ELECTRICAL STEEL SHEETS UNDER ARBITRARY INDUCTION WAVEFORM**

Shunji Yanase, Hirotaka Kimata, Yasuo Okazaki, Shuichiro Hashi, *Dept. of Materials Science and Technology, Gifu University, Japan*

**GT-07 DEVELOPMENT OF GAPPED IRON-CORE TYPE REACTOR USING NEW ADHESIVE COATED GRAIN ORIENTED ELECTROMAGNETIC STEEL SHEETS**

Minoru Kuwata[1], Shuichi Nogawa[1], Norio Takahashi[2], Daisuke Miyagi[2], Kazutoshi Takeda[3], *[1]Nissin Electric Co.,Ltd, Japan, [2]Okayama University, Japan, [3]Nippon Steel corporation, Japan*

**GT-08 LOSSES OF SILICON STEEL SEGMENT CORES WITH SEVERAL POLE ROTORS**

Hisashi Mogi[1], Chikara Kaido[2], *[1]Steel Research Lab., Nippon Steel Corp., Japan, [2]Dept. of Appl. Science for Integrated System Engng., Kyushu Inst. of Tech., Japan*

**GT-09 CALCULATION OF THE FLUX-LINKAGE CHARACTERISITCS OF A SWITCHED RELUCTANCE MOTOR BY FLUX TUBE METHOD**

Nimit K. Sheth, K. R. Rajagopal, *Electrical Engineering Department, Indian Institute of Technology Delhi, New Delhi, India*

**GT-10 ANALYSIS OF ELECTROMAGNETIC FORCE DISTRIBUTION ON THE END WINDING FOR MOTOR RELIANCE**

Ki-Chan Kim[1], Kab-Jae Lee[2], Ju Lee[1], *[1]Dept. of Electrical Engineering, Hanyang University, Republic of Korea, [2]Hyundai Heavy Industries Co., LTD. , Republic of Korea*

**GT-11 EVALUATION OF EXPERIMENTAL PERMANENT MAGNET BRUSHLESS MOTOR UTILIZING NEW MAGNETIC MATERIAL FOR STATOR TEETH CORE**

Yuji Enomoto[1], Motoya Ito[1], Haruo Koharagi[1], Ryoso Masaki[2], Shoji Ohiwa[3], Chio Ishihara[4], Masahiro Mita[5], *[1]Hitachi Research Laboratory, Hitachi,Ltd., Japan, [2]Hitachi Industrial Equipment Systems Co., Ltd., Japan, [3]Japan Servo Co., Ltd., Japan, [4]Hitachi Powder Metals Co., Ltd., Japan, [5]Hitachi Metals, Ltd., Japan*

**GT-12 APPLICATION OF FINE-GRAINED DOUBLY ORIENTED ELECTRICAL STEEL TO IPM SYNCHRONOUS MOTOR**

Toshiro Tomida[1], Naoyuki Sano[1], Shigeharu Hinotani[1], Koji Fujiwara[2], Hidetoshi Kotera[3], Noriyoshi Nishiyama[4], Yasufumi Ikkai[4], *[1]Corporate R&D Labs., Simitomo Metal Ind. Ltd., Japan, [2]Dept. of Electrical and Electronic Engineering, Okayama University, Japan, [3]Mechanical Engineering Dept., Kyoto University, Japan, [4]Home Appliance & Automotive Motor Division., Motor Company, Matsushita Electric Ind. Co., Japan*

**GT-13 MOTOR CORE IRON LOSS ANALYSYS EVALUATING SHRINK FIT AND STAMPING EFFECT BY FINITE ELEMENT METHOD**

Keisuke Fujisaki, Ryu Hirayama, Takeshi Kawachi, Shouji Satoh, Chikara Kaidou, Masao Yabumoto, Takeshi Kubota, *Technical Development Bureau, Nippon Steel Corporation, Japan*

**8:30-12:00** **Session GU**

## Magnetoelastc and Novel Magnetic Materials/Devices

**A. Fujita**

Graduate School of Engineering, Tohoku University

**GU-01 A MODEL FOR HYSTERESIS AND MAGNETOCALORIC EFFECT IN MAGNETIC FIELD DRIVEN PHASE TRANSFORMATIONS**

Vittorio Basso, Carlo P. Sasso, Martino LoBue, Giorgio Bertotti, *IEN Galileo Ferraris, Torino, Italy*

**GU-02 PHASE TRANSITIONS AND MAGNETIC ENTROPY CHANGE IN Mn-RICH Ni-Mn-Ga ALLOYS**

Franca Albertini[1], Massimo Solzi[2], Luigi Pareti[1], Antonio Paoluzi[1], Lara Righi[3], Elena Villa[1], Stefano Besseghini[4], *[1]IMEM-CNR, Italy, [2]Dipartimento di Fisica, Universita di Parma, Italy, [3]Dipartimento di Chimica GIAF, Universita di Parma, Italy*

**GU-03 EFFECT OF BORON ON THE STABILITY, MAGNETIC AND ELECTRICAL PROPERTIES OF $Y_{0.5}Gd_{0.5}Fe_2$**

J. Arout Chelvane, G. Markandeyulu, *Magnetism and Magnetic Materials Laboratory, Department of Physics, Indian Institute of Technology Madras, Chennai, India*

**GU-04 PREPARATION OF Sm-Fe GIANT MAGNETOSTRICTIVE THIN FILMS BY DC MAGNETRON SPUTTERING**

Yoshihito Matsumura[1], Atsushi Kadowaki[2], Shingo Masuda[2], Keisuke Takahashi[2], You Tsukayama[2], Yoshitake Nishi[2], *[1]Department of Applied Science, School of Engineering, Tokai University, Japan, [2]Department of Materials Science, School of Engineering, Tokai University, Japan*

**GU-05 MAGNETOSTRICTIVE CHARACTERISTICS OF Fe-Al FILMS FORMED BY ION PLATING PROCESS**

Konosuke Muramatsu[1], Noriyoshi Matsuoka[1], Mitsuaki Takeuchi[1], Masahide Morita[2], Tempei Tanakamaru[2], Yoshihito Matsumura[2], *[1]Department of Applied Science, Graduate School of Engineering, Tokai University, Japan, [2]Department of Applied Science, School of Engineering, Tokai University, Japan*

**GU-06 AC PERMEABILITY OF FeCoGe/WC/PHENOL MAGNETOSTRICTIVE COMPOSITES**

Kwang-Ho Shin[1], Younghak Kim[2], Sang Ho Lim[3], *[1]Dept. of Multimedia Engineering, Kyungsung University, Republic of Korea, [2]Dept. of Electrical Engineering, Pukyeong National University, Republic of Korea, [3]Division of Materials Science and Engineering, Korea University, Republic of Korea*

**GU-07 MAGNETIC AND MAGNETOMECHANICAL PROPERTIES OF TERFENOL-D 2-2 COMPOSITES**

Luis Garcia-Gancedo Garcia[1], Simon Busbridge[1], Stuart Eaton[2], *[1]School of Engineering, University of Brighton, Lewes Road, Brighton, United Kingdom, [2]QinetiQ, Ively Road, Farnborough, United Kingdom*

**GU-08 DYNAMIC MAGNETOELASTIC PROPERTIES OF EPOXY-BONDED TERFENOL-D PARTICULATE COMPOSITES WITH A PREFERRED [112] CRYSTALLOGRAPHIC ORIENTATION**

Siu Wing Or[1], Gregory P. Carman[2], *[1]Department of Applied Physics, The Hong Kong Polytechnic University, China, [2]Mechanical and Aerospace Engineering Department, University of California, Los Angeles, United States of America*

**GU-09 INFLUENCE OF GEOMETRIC FACTORS ON THE POLARITY OF A REMANENT MAGNETIZATION**

Ivan J. Garshelis[1], Stijn P. L. Tollens[2], *[1]Magnova, Inc./MagCanica, Inc., United States of America, [2]MagCanica, Inc., United States of America*

**GU-10 SPIN DYNAMICS AT LEVEL CROSSING IN $Fe_{10}$ AND $Cr_8$ MOLECULAR RINGS PROBED BY NMR**

Edoardo Micotti[1], Alessandro Lascialfari[1], Ferdinando Borsa[1], Claude Berthier[2], Mladen Horvatic[2], Marc Henry Julien[3], Andrea Caneschi[4], Dante Gatteschi[4], *[1]Department of Physics "A.Volta" and INFM, Pavia University, Italy, [2]Grenoble High Magnetic Field Laboratory, CNRS and MPI-FKF, France, [3]Lab. de Spectrometrie Physique, Univ. J.Fourier Grenoble, France, [4]Department of Chemistry and INSTM, Florence University, Italy*

**GU-11 GIANT M-E EFFECT OF MULTIFERROIC $BaTiO_3$-$LaMnO_3$ CERAMIC COMPOSITES**

Kenichiro Ban, Takeshi Shundo, Nobuaki Nishimura, Manabu Gomi, *Dept. of Materials Science and Engineering, Nagoya Institute of Technology, Japan*

**GU-12 MAGNETIC ENTROPY CHANGE IN $Mn_{1.1}Fe_{0.9}P_{1-x}Ge_x$ COMPOUNDS**

W. Dagula[1], O.Tegus[1], B. Fuquan[2], L. Zhang[1], P.Z. Si[1], M. Zhang[1], W.S. Zhang[1], E. Bruck[1], F.R. de Boer[1], K.H.J. Buschow[1], *[1]Van der Waals-Zeeman Instituut, Universiteit van Amsterdam, Netherlands, [2]Department of physics, Inner Mongolia Normal University, China*

**GU-13 CONTROL OF LARGE MAGNETOCALORIC EFFECTS AND HYSTERESIS OF $La_{1-x}Ce_x(Fe_{0.86}Si_{0.14})_{13}$ COMPOUNDS**

Shun Fujieda, Asaya Fujita, Kazuaki Fukamichi, *Graduate School of Engineering Tohoku University, Japan*

**GU-14 MAGNETOCALORIC EFFECT IN $LaFe_{11.8-x}Co_xSi_{1.2}$ MELT-SPUN RIBBONS**

Aru Yan, Karl-Hartmut Mueller, Oliver Gutfleisch, *Leibniz Institute of Solid State and Materials Research Dresden, Germany*

**GU-15 MAGNETOCALORIC EFFECTS AND MAGNETIC PROPERTIES IN INTERMETALLIC COMPOUNDS $La(Fe_{1-x-y}Co_xSi_y)_{13}$**

Akiko T. Saito, Hideyuki Tsuji, Tadahiko Kobayashi, *Corporate R&D Center, Toshiba Corporation, Japan*

**GU-16 HEAT CAPACITY AND X-RAY ABSORPTION STUDIES ON THE INTERMETALLIC COMPOUND $YbMn_2Sb_2$**

R. Nirmala[1], A. V. Morozkin[2], H.-D. Kim[3], J.-Y. Kim[3], B.-G. Park[4], S.-J. Oh[5], S. K. Malik[1], *[1]Tata Institute of Fundamental Research, India, [2]Department of Chemistry, Moscow Lomonosov State University, Russian Federation, [3]Pohang Accelerator Laboratory, Pohang University of Science and Technology, Republic of Korea, [4]Department of Physics, University of Science and Technology, Republic of Korea, [5]School of Physics and Center for Strongly Correlated Materials Research, Seoul National University, Republic of Korea*

**Apr. 8** **Event Hall**

**8:30-12:00** **Session GV**

## Magnetic Measurement

**J. Yamasaki**

Kyushu Inst. Tech.

**GV-01 A MODEL FOR QUANTITATIVE EVALUATION OF THE MAGNETIC FIELD CAUSED BY EDDY CURRENT INTERACTION WITH A FLAW IN CONDUCTOR PLATES**

Hossein Bayani, Ichiro Sasada, *Dept. of Applied Science for Electronics and Materials, Kyushu University, Japan*

**GV-02 IMPROVED MEASUREMENT WITH 2D ROTATING FLUXES CONSIDERING EFFECT OF MAGNETIZATION**

Jin Jiang Zhong, Jian Guo Zhu, You Guang Guo, Zhi Wei Lin, *Faculty of Engineering, University of Technology, Sydney, Australia*

**GV-03 FUSION OF ELECTROMAGNETIC INSPECTION METHODS FOR EVALUATION OF STRESS LOADED STEEL SAMPLES**

Tomasz Chady[1], Ryszard Sikora[1], Grzegorz Psuj[1], Masto Enokizono[2], Takashi Todaka[2], *[1]Department of Electrical Engineering, Technical University of Szczecin, Poland, [2]Faculty of Engineering, Oita University, Japan*

**GV-04 FIELD IMPROVEMENT OF FINE MAGNETIC POLE PITCH FABRICATED ON PRINTED CIRCUIT BOARD USING A DUAL LAYER STRUCTURE**

Kuo-Chi Chiu[1], Der-Ray Huang[2], Han-Ping D. Shieh[1], *[1]Department of Photonics and Institute of Electro-Optical Engineering, National Chiao Tung University, Taiwan, [2]Opto-Electronics & Systems Laboratories, Industrial Technology Research Institute, Taiwan*

**GV-05 INTEGRATED DRIVING AND READOUT CIRCUITS FOR CDMPI SENSOR**

Xin Bo Qian[1], Xiao Ping Li[1], Yong Ping Xu[2], Jie Fan[1], *[1]Neurosensors Lab, Department of Mechanical Engineering, Division of Bioengineering,National University of Singapore, Singapore, [2]Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

**GV-06 MAGNETIC CHARACTERIZATION OF THERMALLY SENSITIZED TYPE 304 AND 316 STAINLESS STEELS**

Yasuhiro Kamada, Tsuyoshi Mikami, Seiki Takahashi, Hiroaki Kikuchi, Katsuyuki Ara, *NDE&Science Research Center, Faculty of Engineering, Iwate University, Japan*

**GV-07 DIRECT MEASUREMENT OF PREISACH DIAGRAM FROM MICROHYSTERESIS LOOPS AT VARIOUS DELAY TIME**

Lin-Xiu Ye, Jia-Mou Lee, Te-Ho Wu, *Taiwan SPIN Research Center and Graduate school of Engineering Science & Technology, National Yunlin Univ. of Science and Technology, Taiwan*

**GV-08 VECTOR MAGNETOMETRY OF SYNTHETIC SPIN VALVES**

Gerald Rutsch[1], Jamie Yang[1], William Van Drent[2], Daniele Mauri[1], Jinshan Li[1], *[1]Hitachi Global Storage Technologies, United States of America, [2]ADE Technologies, United States of America*

**GV-09 INTERNAL MAGNETOSTRICTION OBSERVED BY X-RAY DIFFRACTION IN IRON**

Etsuo Arakawa[1], Koh-ichi Maruyama[2], Koichi Mori[3], Hidetaka Nishigaitsu[1], Noriyuki Aizawa[1], *[1]Dept. of Physics, Tokyo Gakugei University, Japan, [2]Dept. of Molecular Structure, Institute for Molecular Science, Japan, [3]Dept. of Radiological Sciences, Ibaraki Prefectural University of Health Sciences, Japan*

**GV-10 INTERFACIAL MIXING BEHAVIOR OF Fe/Al MAGNETIC THIN FILMS : MOLECULAR DYNAMICS SIMULATION**

Chan-Yeup Chung, Yong-Chae Chung, *Dept. of Ceramic Engineering, Hanyang University, Republic of Korea*

**8:30-12:00** **Session GW**

## Computational Magnetics

**C-R. Chang**

National Taiwan University

**GW-01 MICROMAGNETIC STUDY OF INTERGRANULAR EXCHANGE COUPLING IN TILTED PERPENDICULAR MEDIA**

X. Z. Cheng, Mansoor B. A. Jalil, *Electrical and Computer Engineering Department, National University of Singapore, Singapore*

**GW-02 MICROMAGNETIC MODELING WITH EDDY CURRENT AND CURRENT-INDUCED SPIN TORQUE EFFECTS**

Pooja Wadhwa, Mansoor B. A. Jalil, *Electrical and Computer Engineering Department, National University of Singapore, Singapore*

**GW-03 MODELING OF LONG-TIME THERMAL MAGNETISATION DECAY IN INTERACTING GRANULAR MAGNETIC MATERIALS**

O.Chubykalo-Fesenko[1], R.W.Chantrell[2], *[1]Instituto de Ciencia de Materiales de Madrid, CSIC, Spain, [2]University of York, UK, United Kingdom*

**GW-04 MICROMAGNETIC SIMULATION OF THE IMAGINARY PART OF THE TRANSVERSE SUSCEPTIBILITY**

Dorin Cimpoesu[1], Alexandru Stancu[1], Ioan Dumitru[2], Leonard Spinu[3], *[1]Faculty of Physics, Al. I. Cuza University, Romania, [2]Advanced Materials Research Institute - AMRI, University of New Orleans, United States of America, [3]Department of Physics and AMRI, University of New Orleans, United States of America*

**GW-05 REVERSIBLE MAGNETIZATION VARIATIONS IN LARGE FIELD RANGES ASSOCIATED TO PERIODIC ARRAYS OF ANTIDOTS**

Jesus M. Gonzalez[1], Oksana A. Chubykalo-Fesenko[1], Felipe Garcia-Sanchez[2], Jose M. Torres-Bruna[3], Juan Bartolome[3], Luis M. Garcia Vinuesa[3], *[1]Unidad Asociada ICMM/IMA, Spain, [2]ICMM-CSIC, Spain, [3]ICMA-Universidad de Zaragoza, Spain*

**GW-06 MICROMAGNETIC DOMAIN STRUCTURES AND MAGNETIZATION SWITCHING MECHANISM IN SUBMICRON THIN FILM ELEMENTS**

Byoung C. Choi[1], B.R. Pujada[1], Y.K. Hong[2], M.H. Park[2], H. Han[2], S.H. Gee[2], G.W. Donohoe[3], *[1]Department of Physics & Astronomy, University of Victoria, Canada, [2]Department of Materials Science and Engineering, University of Idaho, United States of America, [3]Department of Electrical and Computer Engineering, University of Idaho, United States of America*

**GW-07 MICROMAGNETIC SIMULATION OF NON UNIFORM NANODOTS WITH PERPENDICULAR ANISOTROPY**

Ngocnga Dao, Nobuaki Kikuchi, Leon Abelmann, J. Cock Lodder, *Systems and Materials for Information Storage, University of Twente, Netherlands*

**GW-08 ON THE DEPENDENCE OF MAGNETIC STOCHASTIC RESONANCE FEATURES ON MAGNETIC HYSTERESIS**

Rosario Nunzio Mantegna, Bernardo Spagnolo, Luigi Testa, Marco Trapanese, *Palermo University, Italy*

**GW-09 AN IDENTIFICATION METHOD OF PLAY MODEL WITH INPUT-DEPENDENT SHAPE FUNCTION**

Tetsuji Matsuo, Masaaki Shimasaki, *Dept. Electrical Engineering, Kyoto University, Japan*

**GW-10 GIANT MAGNETIC ANISOTROPY ENERGY IN MONATOMIC CHAINS: OPPORTUNITY TO STABILIZE MAGNETIZATION IN ULTRA-SMALL 0D AND 1D ENTITIES**

Ru Qian Wu[1], Ji Sang Hong[1], Ding-Sheng Wang[2], Jian-Tao Wang[2], *[1]Department of Physics and Astronomy, University of California, Irvine, United States of America, [2]Institute of Physics, China*

**GW-11 A MAGNETIC MOLECULE DETECTION SYSTEM: A COMPARISON OF DIFFERENT SETUPS BY COMPUTER SIMULATION**

Willi Schepper, Joerg Schotter, Hubert Brueckl, Guenter Reiss, *Dept. of Physics, Bielefeld University, Germany*

**GW-12 MAGNETIC PROPERTIES OF TRANSITION METAL ATOMS DOPED IN SILICON NANOTUBES WITH HEXAGONAL PRISM STRUCTURE**

Y-R. Jang[1], Chulsu Jo[2], J. I. Lee[2], *[1]Department of Physics, University of Incheon, Republic of Korea, [2]Department of Physics, Inha University, Republic of Korea*

**GW-13 EXCHANGE-INTERACTIONS AND CHEMICAL BONDING IN CuO BY FIRST-PRINCIPLES**

Alessio Filippetti, *Dept. of Physics, University of Cagliari, Italy*

**GW-14 FIRST PRINCIPLES CALCULATIONS OF MAGNETIC PROPERTIES OF Zr DOPED RARE EARTH-TRANSITION METAL (1:7) ALLOYS**

Kentaro Oka, Teruo Kiyomiya, *FDK CORPORATION, Japan*

**GW-15 A BOUNDARY MESHLESS METHOD FOR TRANSIENT EDDY CURRENT ANALYSIS**

Yong Zhang[1], K.R. Shao[1], You Guang Guo[2], J.D. Lavers[3], *[1]College of Electrical & Electronic Engineering, Huazhong University of Science and Technology, China, [2]Faculty of Engineering, University of Technology Sydney, Australia, [3]Department of Electrical and Computer Engineering, University of Toronto, Canada*

**GW-16 NOVEL TOPOLOGY OPTIMIZATION FOR THE DESIGN OF MULTIPLE COILS**

Woo Chul Kim, Jae Eun Kim, Yoon Young Kim, *Dept. of Mechanical and Aerospace Engineering, Seoul National University, Republic of Korea*

**GW-17 THE CHARACTERISTIC ANALYSIS OF SWITCHED RELUCTANCE MOTOR CONSIDERING DC LINK VOLTAGE RIPPLE ON HARD AND SOFT CHOPPING MODES**

Jae-Hak Choi, Joonseon Ahn, Ju Lee, *Energy Conversion Lab., Department of Electrical Engineering, Hanyang University, Republic of Korea*

**Apr. 8** **Reception Hall**

## Session HA
## Novel Magnetoresistive Oxides & Halfmetallic Materials

**H. Asano**

Nagoya University

***HA-01 14:30 HEUSLER MATERIALS IN MAGNETIC TUNNEL JUNCTIONS**

Guenter Reiss, Jan Schmalhorst, Hubert Brueckl, Andreas Huetten, S. Kaemmerer, *Dept. of Physics, University of Bielefeld, Germany*

**HA-02 15:00 $Co_2Cr_{1-x}Fe_xAl$ FULL HEUSLER ALLOY THIN FILMS WITH THE $L2_1$ STRUCTURE**

Atsufumi Hirohata[1], Hidekazu Kurebayashi[2], Susumu Okamura[2], Nobuki Tezuka[1], Koichiro Inomata[1], *[1]CREST, JST and Dept. of Mat. Sci., Tohoku Univ., Japan, [2]Dept. of Mat. Sci., Tohoku Univ., Japan*

**HA-03 INVESTIGATION OF INTRINSIC GILBERT**
**15:15 DAMPING CONSTANT IN $Co_2MnAl$ HEUSLER ALLOY FILMS**

Resul Yilgin, Mikihiko Oogane, Satoshi Yakata, Yasuo Ando, Terunobu Miyazaki, *Dept. of Applied Physics, Tohoku University, Japan*

**HA-04 PROPERTIES OF $Co_2YZ$ HEUSLER COMPOUNDS**
**15:30** Claudia Felser, Sabine Wurmehl, Gerhard Fecher, Thomas Block, *Dept. of Inorganic and Analytical Chemistrie, University of Mainz, Germany*

**HA-05 MAGNETISM AND TRANSPORT PROPERTIES OF**
**15:45 EPITAXIAL $Co_2MnSi$ FILMS**

Wen Hong Wang[1], Xiao Bing Ren[1], Guang Heng Wu[2], Przybylski Marek[3], Przybylski Marek[4], Barthel Jochen[3], Kirschner Jurgen[3], *[1]National Institute for Materials Science, Japan, [2]Institute of Physics, Chinese Academy of Sciences, China, [3]Max-Planck Institute of Microstructure Physics, Germany, [4]Solid State Physics Department, Faculty Physics and Nuclear Techniques, AGH University of Sciences and Technology, Poland*

**HA-06 XPS AND XMCD STUDY OF $Fe_3O_4$/GaAs INTERFACE**
**16:00** Yong Xiong Lu[1], Jill S. Claydon[1], Ehsan Ahmad[1], Yong Bing Xu[1], Sarah M. Thompson[2], Karen Wilson[3], *[1]Spintronics Laboratory, Department of Electronics, University of York, United Kingdom, [2]Department of Physics, University of York, United Kingdom, [3]Department of Chemistry, University of York, United Kingdom*

**HA-07 SPIN FILTERING WITH PEROVSKITE AND SPINEL**
**16:15 OXIDES.**

M. Gajek[1], U. Luders[2], A. Barthelemy[1], M. Bibes[2], J. Fontcuberta[2], J-F. Bobo[3], K. Bouzehouane[1], E. Jacquet[1], J. P. Contour[1], A. Fert[1], *[1]Unite Mixte CNRS-Thales, Domaine de Corbeville, France, [2]ICMAB, Spain, [3]LPMC, France*

**HA-08 GIGANTIC MAGNETOCAPACITANCE AND**
**16:30 MAGNETOSTRICTION IN FERROELECTRIC ANTIFERROMAGNET $GdMnO_3$**

Kohei Noda, Shigeru Nakamura, Jun Nagayama, Hideki Kuwahara, *Dept. of Physics, Sophia University, Japan*

**HA-09 PROPERTIES OF HALF-METALLIC DOUBLE-**
**16:45 PEROVSKITE THIN FILMS**

Hidefumi Asano, Norihumi Koduka, Kazumasa Imaeda, Mikito Sugiyama, Masaaki Matsui, *Dept. of Crystalline Materials Science, Japan*

**HA-10 17:00 TEMPERATURE DEPENDENCE OF THE MAGNETIC PROPERTIES IN $LaMnO_{3.02}$**

F. J. Palomares[1], F. Pigazo[1], J. J. Romero[2], J. Alonso[2], A. Arroyo[2], R. Cortes-Gil[2], J. M. Gonzalez-Calbet[3], A. Hernando[2], M. Vallet-Regi[4], J. M. Gonzalez[5], *[1]Instituto de Ciencia de Materiales de Madrid. Sor Juana Ines de la Cruz s/n, Spain, [2]Instituto de Magnetismo Aplicado UCM., Spain, [3]Depto. De Quimica Inorganica I, UCM, Avda. Complutense s/n, Spain, [4]Depto. de Quimica Inorganica y Bioinorganica, UCM Avda. Complutense s/n, Spain, [5]Unidad Asociada ICMM-IMA, P.O. Box 155, 28230 Las Rozas (Madrid), Spain., Spain*

**HA-11 17:15 FINE-TUNING OF MAGNETORESISTANCE IN $Nd_{0.5}(Ca, Sr)_{0.5}MnO_3$ SYSTEM**

S. L. Cheng[1], Y. J. Chou[2], J. G. Lin[1], *[1]Center for Condensed Matter and Sciences and Nano-stosrage, Taiwan, [2]Department of Material Engineer and Science, Taiwan*

**Apr. 8** **Room 141/142**

## Session HB
## Head Disk Interface II

**J. Lin**
Komag Inc.

**HB-01 14:30 THERMAL POLE-TIP PROTRUSION ANALYSIS OF MAGNETIC HEADS FOR HARD DISK DRIVES**

Ken-ichiro Aoki[1], Toshinori Hoshino[2], Takeshi Iwase[3], Takahiro Imamura[4], Keiji Aruga[5], *[1]HDD Technology Development Dept., Fujitsu Limited, Japan, [2]Component Technology Dept., Fujitsu Limited, Japan, [3]HDI Engineering Dept., Fujitsu Limited, Japan, [4]Magnetic Disk Drive Laboratory, Fujitsu Laboratories Ltd., Japan, [5]1st H.D.D. Div., Fujitsu Limited, Japan*

**HB-02 14:45 VERIFICATION OF THERMALLY INDUCED NANOMETER ACTUATION OF THE MAGNETIC RECORDING TRANSDUCER TO OVERCOME MECHANICAL AND MAGNETIC SPACING CHALLENGES**

Mike Suk[1], Masayuki Kurita[2], Hideaki Tanaka[3], Shozo Saegusa[3], Neil Robertson[1], *[1]Hitachi Global Storage Technolgies, United States of America, [2]Hitachi Storage Technology Research Center, Japan, [3]Hitachi Global Storage Technolgies, Japan*

**HB-03 15:00 A METHOD TO ESTIMATE POLE TIP PROTRUSION IN RECORDING HEADS**

Vijay Prabhakaran, Wu Xing Gan, Suping Song, Eric Sladek, *Western Digital Corportation, United States of America*

**HB-04 15:15 MODELING AND DESIGN OF CONTROLLED FLYING PROXIMITY SLIDERS FOR HEAD-MEDIA SPACING VARIATION SUPPRESSION IN ULTRA-LOW FLYING AIR BEARINGS**

Jia-Yang Juang, David B. Bogy, *Dept. of Mechanical Engineering, University of California, Berkeley, United States of America*

**HB-05 15:30 PARTIAL-CONTACT HEAD-DISK INTERFACE APPROACH FOR HIGH-DENSITY RECORDING**

Jun Guo Xu[1], Hidekazu Kohira[2], Hideaki Tanaka[2], Shozo Saegusa[2], *[1]Storage Technology Research Center, Hitachi Ltd, Japan, [2]Hitachi GST, Japan*

**HB-06 15:45 HAMR AND MECHANICAL STABILITY OF ITS HEAD-DISK INTERFACE**

H. Li, B. Liu, H.Y. Ye, T.C. Chong, *Data Storage Institute, Singapore*

**HB-07 16:00 DEGRADATION TESTING AND LIFETIME PREDICTION OF GMR HEADS UNDER MECHANICALLY AND THERMALLY ACCELERATED CONDITIONS**

Takahiro Imamura[1], Kenrou Yamamoto[2], *[1]Magnetic Disk Drive Laboratory, Fujitsu Laboratories Ltd., Japan, [2]HDI Engineering Dept., Fujitsu Ltd., Japan*

**HB-08 16:15 EMULATING MEDIA DEFECT CORROSION**

Qing Dai[1], Guillermo Prada[2], Bing Yen[1], Bruno Marchon[1], Charlie Rettner[3], *[1]San Jose Research Center, Hitachi Global Storage Technologies Inc., United States of America, [2]Materials Laboratory, Hitachi Global Storage Technologies Inc., United States of America, [3]IBM Almaden Research, United States of America*

**HB-09 16:30 CHEMICALLY MODIFIED AIR-BEARING SURFACE FOR THE NEAR CONTACT REGIME-PART 1: CONCEPT AND CHARACTERIZATION**

Hiroshi Chiba[1], Takayuki Musashi[2], Yoshiharu Kasamatsu[2], Keiji Watanabe[1], *[1]Inorganic Materials & Polymers Laboratory, FUJITSU LABORATORIES LTD., Japan, [2]HDI Dept., FUJITSU LTD., Japan*

**HB-10 16:45 CONFORMATION AND MOTION OF MONOLAYER LUBRICANT MOLECULE ON MAGNETIC DISKS**

Kenji Fukuzawa, Shintaro Itoh, Kenta Suzuki, Yusuke Kawai, Hedong Zhang, Yasunaga Mitsuya, *Dept. of Mirco-nano Systems Engineering, Nagoya University, Japan*

**HB-11 17:00 VISCOSITY INCREASE DUE TO CONFINEMENT OF MOBILE MOLECULES OF PERFLUOROPOLYETHERS MEASURED BY FIBER WOBBLING METHOD**

Shintaro Itoh, Kenji Fukuzawa, Takamasa Ando, Hedong Zhang, Yasunaga Mitsuya, *Dept. of Micro-Nano Systems Engineering, Japan*

**HB-12 17:15 DUAL LAYER X-RAY PHOTOELECTRON SPECTROSCOPY MODEL TO SIMULTANEOUSLY DETERMINE A PFPE/A20H LUBRICANT MIXTURE AND CARBON LAYER THICKNESSES ON HARD DISK MAGNETIC MEDIA**

Dave Spaulding, Zunde Yang, Jia Jay Liu, *MMC Technology, United States of America*

**Apr. 8** **Room 234**

## Session HC
## Symposium on High Magnetic Anisotropy $L1_0$ and Related Materials

**T. Suzuki**

Toyota Technological Institute

***HC-01 14:30 FIRST PRINCIPLE CALCULATIONS OF FePt, CoPt, $Co_3Pt$ AND $Fe_3Pt$ ALLOYS**

James M. Maclaren, Department of Physics, Tulane University, United States of America

***HC-02 15:00 GIANT MAGNETO-CRYSTALLINE ANISOTROPY OF FCT $Fe_3Pt$ ORDERED ALLOY THIN FILMS FABRICATED ONTO MgO SUBSTRATES**

Md. Ariful Islam Nahid, *Information Storage Materials Laboratory, Toyota Technological Institute, Japan*

***HC-03 15:30 AN ATOMISTIC MODEL OF SWITCHING IN FePt NANOPARTICLES**

Oleg Mryasov[1], Ulrich Nowak[2], Roy W. Chantrell[3], *[1]Seagate Research, United States of America, [2]University of Duisburg-Essen, Germany, [3]University of York, United Kingdom*

***HC-04 16:00 MAGNETIZATION REVERSAL PROCESS IN FePt NANOPARTICLES**

Satoshi Okamoto, *IMRAM, Tohoku University, Japan*

***HC-05 16:30 ORDERING PROCESS AND SIZE EFFECT OF FePt MAGNETIC THIN FILMS**

Y.K. Takahashi, K. Hono, *National Institute for Materials Science, Japan*

***HC-06 17:00 COMBINED REACTIONS ASSOCIATED WITH $L1_0$ ORDERING**

Timothy J. Klemmer, *Seagate Research, United States of America*

**Apr. 8** **Room 224**

## Session HD
## Microwave and Magnetoelastic Materials/Devices

**E. Quandt**
Center of Advanced European Studies and Reseach

**S. Yamamoto**
Yamaguchi University

**HD-01 14:30 MICROWAVE PROPERTIES AND ANISOTROPY FIELD DISTRIBUTION IN NANOGRANULAR Fe-Co-Al-O FILMS**

Massimo Pasquale[1], Marco Coisson[1], Sergio Perero[1], Sang-Ho Lim[2], *[1]Materials Department, IEN Galileo Ferraris Torino, Italy, [2]Dept. of Materials Science and Eng., Korea Univ. Seoul, Republic of Korea*

**HD-02 14:45 THE FORMATION OF BARIUM HEXAFERRITES USING COPRECIPITATION METHODS**

Darja Lisjak, Miha Drofenik, *Jozef Stefan Institute, Advanced Materials Dept., Slovenia*

**HD-03 15:00 PREPARATION AND CHARACTERIZATION OF Mn-Ir/Fe-Si EXCHANGE-COUPLED MULTILAYER FILM WITH Ru UNDERLAYER FOR HIGH-FREQUENCY MICROMAGNETIC DEVICES**

Makoto Sonehara, Takatoshi Sugiyama, Toshiro Sato, Kiyohito Yamasawa, Yoshimasa Miura, *Faculty of Engineering, Shinshu University, Japan*

**HD-04 15:15 EFFECT OF MAGNETIC POWDER SIZE OF BAND PASS FILTER FOR ULTRA WIDEBAND(UWB) COMMUNICATION SYSTEMS**

A.Saito[1], M.Okabe[2], *[1]Dept. of Electromagnetic Material, Daido Steel Co., Ltd., Japan, [2]Research & Development Laboratory, Daido Steel Co., Ltd., Japan*

**HD-05 15:30 MICRO-MACHINED MAGNETOSTATIC WAVE COUPLED RESONATORS**

Romolo Marcelli[1], Takuro Koike[2], *[1]CNR-IMM, Rome Section, Italy, [2]Tamagawa University Research Institute, Japan*

**HD-06 15:45 GIANT VOLUME MAGNETOSTRICTION AT ROOM TEMPERATURE AND ITS CONNECTION WITH COLOSSAL MAGNETORESISTANCE IN $La_{0.7}Ba_{0.3}MnO_3$**

R.V. Demin[1], L.I. Koroleva[1], Ya.M. Mukovskii[2], *[1]M.V. Lomonosov Moscow State University, Russian Federation, [2]Moscow State Steel and Alloys Institute, Russian Federation*

**HD-07 16:00 TEMPERATURE DEPENDENCE OF REVERSIBLE FIELD-INDUCED STRAIN AND MAGNETIZATION CHANGES IN NiMnGa SINGLE CRYSTAL**

Oleg Heczko[1], Ladislav Straka[2], Simo-Pekka Hannula[1], *[1]Laboratory of Physical Metallurgy and Material Science, Helsinki University of Technology, Finland, [2]Laboratory of Biomedical Engineering, Helsinki University of Technology, Finland*

**HD-08 16:15 MAGNETOSTRAIN AND MAGNETIZATION OF THE Ni-Mn-Ga SINGLE CRYSTAL**

Chengbao Jiang, Jing Min Wang, Hui Bin Xu, *Department of Materials Science and Engineering, Beijing University of Aeronautics and Astronautics, China*

**HD-09 16:30 MAGNETOSTRICTION OF $Ni_2MnGa$ IN LOW AND INTERMEDIATE TEMPERATURE PHASES**

Masaaki Matsui, Hidefumi Asano, Kazuhiko Ohmori, Daichi Murakami, Toshinori Nakakura, *Dept. of Crystalline Materials Science, Nagoya University, Japan*

**HD-10 16:45 MAGNETOSTRICTIVE PROPERTIES OF Tb-Fe-Co SYSTEM THIN FILMS**

Teruo Kiyomiya[1], Yoji Yamada[1], Yoshio Matsuo[1], Hiroyuki Wakiwaka[2], Yohei Torii[2], Mika Makimura[3], *[1]FDK CORPORATION, Japan, [2]Shinshu University, Japan, [3]Industrial Research Institute of Nagano Prefecture, Japan*

**HD-11 17:00 SWITCHING OF MAGNETOSTRICTIVE MICRO-DOT ARRAYS BY MECHANICAL STRAIN**

Markus Loehndorf[1], Maik-Thomas Bootsmann[1], Stefani Dokupil[1], Tzvetan Ivanov[2], Nicolai Abedinov[2], Eckhardt Quandt[1], *[1]Center of Advanced European Studies and Research (caesar), Bonn, Germany, [2]IMA, University of Kassel, Germany*

**HD-12 17:15 OPTIMAL DESIGN OF MAGNETIC CIRCUIT FOR A MAGNETOSTRICTIVE ACTUATOR**

Young-Woo Park[1], Seok-Ho Lee[2], *[1]Dept. of Mechatronics Engineering, Chungnam National University, Republic of Korea, [2]Mechatronics Engineering, Chungnam National University, Republic of Korea*

## Session HE
## Hard Magnet Applications II

**P. Campbell**
Magnequench, Inc.

**K. Ohashi**
Shin-Etu Chemical Co. Ltd.

**HE-01 14:30** **4-POLE ALIGNMENT RING-SHAPED MAGNET FOR AUTOMOBILE DC MOTOR**
Hiroshi Matsuoka, Kenji Noguchi, Yoji Hayashi, Hironari Mitarai, Yoshinobu Honkura, *Electric & Magnetic Division, Aichi Steel Corporation, Japan*

**HE-02 14:45** **RESEARCH ON THE MAGNETIZATION OF A TANGENTIALLY MAGNETIZED BRUSHLESS DC MOTOR**
Ping Zheng, Feng Chai, Yan Wang, Shu Kang Cheng, *School of Electrical Engineering and Its Automation, Harbin Institute of Technology, China*

**HE-03 15:00** **CAD AND FE ANALYSIS OF RADIAL-FLUX SURFACE MOUNTED PERMANENT MAGNET BRUSHLESS DC MOTOR**
Parag R Upadhyay, K. R. Rajagopal, *Electrical Engineering Department, IIT Delhi, India*

**HE-04 15:15** **A NOVEL MONOLITHICALLY FABRICATED LORENTZ FORCE ACTUATOR USING POLYMER MAGNETS**
Marco Feldmann, Stephanus Buettgenbach, *Institute for Microtechnology, TU-Braunschweig, Germany*

**HE-05 15:30** **A HALBACH ARRAY MAGNETIC SPRING**
Will Robertson, Ben Cazzolato, Anthony Zander, *School of Mechanical Engineering, University of Adelaide, Australia*

**HE-06 15:45** **EFFICIENCY OF PERMANENT MAGNET ASSEMBLIES FOR MRI DEVICE**
Chun Li, Michael K Devine, *Dexter Magnetic Technologies, United States of America*

**HE-07 16:00** **SUPER-HIGH SPEED CRYOGENIC PMSM DESIGN**
Liping Zheng[1], Thomas X. Wu[1], Dipjyoti Acharya[2], Kalpathy B. Sundaram[1], Jay Vaidya[3], Li Mei Zhao[1], Chan H. Ham[2], Nagaraj Arakere[4], Jay Kapat[2], Louis Chow[2], *[1]Department of ECE, University of Central Florida, United States of America, [2]Department of MMAE, University of Central Florida, United States of America, [3]Electrodynamics Associates, Inc., United States of America, [4]Department of MAE, University of Florida, United States of America*

**HE-08 16:15 BASIC CHARACTERISTICS OF THE SYNCHRONOUS GENERATOR USING MECAHNICAL VIBRATION**

Shunsuke Ohashi, Tatsurou Matsuzuka, *Dept. of Electrical Engineering and Computer sciences, Kansai University, Japan*

**HE-09 16:30 LOSS ANALYSIS AND EFFICIENCY IMPROVEMENT OF THE POWER SUPPLY SYSTEM USING MAGNETIC COUPLING FOR MEDICAL IMPLANTS**

Shin-nosuke Suzuki, *Oyama National College of Technology, Japan*

**HE-10 16:45 THE EFFECT OF NEUTRON IRRADIATION ON $Sm_2Co_{17}$-BASED HIGH TEMPERATURE MAGNETS AND Nd-Fe-B MAGNETS**

Christina H. Chen[1], Joseph Talnagi[2], Jin Fang Liu[3], Payal Vora[3], Ashil Higgins[1], Michael H. Walmer[3], Don Lee[1], Sam Liu[1], *[1]University of Dayton, United States of America, [2]Ohio State University, United States of America, [3]Electron Energy Corp., United States of America*

**Apr. 8** **Event Hall**

**13:30-17:00** **Session HP**

## MRAMs and Magnetic Tunnel Junctions

**K. Kobayashi**

Fujitsu Laboratory

**T-W. Kim**

SAIT: Samsung Advanced Institute of Technology

**HP-01 THERMAL STABILITY OF A SYNTHETIC ANTIFERROMAGNET FREE LAYER**

Nobuki Tezuka, Kazutaka Sakurada, Koichiro Inomata, *Tohoku University, Japan*

**HP-02 NANOMETER SCALED MAGNETIC TUNNEL JUNCTIONS FABRICATED BY A SUBSTRATE BIASED PLASMA ETCHING TECHNIQUE**

Lee K. I.[1], J. Y. Chang [2], S. H. Han[2], K. H. Shin[2], W. Y. Lee[1], *[1]Dept. of Materials Science and Engineering, Yonsei University, Republic of Korea, [2]Nano Device Research Center, Korea Institute of Science and Technology, Republic of Korea*

**HP-03 IMPROVED SELECTIVITY OF SAF FREE LAYER IN HIGH DENSITY MRAM ARRAY**

Injun Hwang[1], Woncheol Jeong[2], Jae Hyun Park[2], Wanjun Park[1], Young Man Jang[1], Youngjin Cho[1], Soonwon Hwang[1], Taewan Kim[1], *[1]Samsung Advanced Institute of Technology, Republic of Korea, [2]Semiconductor R&D Division, Samsung Electronics, Republic of Korea*

**HP-04 HIGH DENSITY MAGNETIC RANDOM ACCESS MEMORY USING A PAIR OF ASYMMETRICAL CELL**

Chee K. Lim[1], Yong S. Kim[1], No Y Park[1], J. Lee[2], *[1]HDD Program Team, Samsung Advanced Institute of Technology, Republic of Korea, [2]Dept. of Electrical Engineering, Hanyang University, Republic of Korea*

**HP-05 PAIRED INTERACTION EFFECT ON SWITCHING BEHAVIORS OF PATTERNED "PAC-MAN" ARRAY**

Hongmei Han[1], Yang-Ki Hong[1], Mun-Hyoun Park[1], Byung-Chul Choi[2], Sung-Hoon Gee[1], James F. Jabal[1], Gavin Abo[1], Andrew Lyle[1], Byron Wong[1], Gregory W. Donohoe[3], *[1]Dept of Materials Science and Engineering, University of Idaho, United States of America, [2]Dept. of Physics, University of Victoria, Canada, [3]Dept. of Electrical and Computer Engineering, University of Idaho, United States of America*

**HP-06 LOW SWITCHING FIELD OF SUB-MICRON SIZED MTJs WITH SYNTHETIC FERRIMAGNET FREE LAYER BASED ON NiFe/Ru/NiFe MULTILAYERS**

Young Min Lee[1], Hitoshi Kubota[2], Yasuo Ando[1], Terunobu Miyazaki[1], *[1]Dept. of Applied Physics, Tohoku University, Japan, [2]Nanoelectronics Reasearch Institute, AIST, Japan*

**HP-07 TUNNEL MAGNETORESISTANCE IN FULLY EPITAXIAL MgO DOUBLE BARRIER MAGNETIC TUNNEL JUNCTIONS**

Takayuki Nozaki[1], Atsufumi Hirohata[2], Nobuki Tezuka[1], Satoshi Sugimoto[1], Koichiro Inomata[1], *[1]Department of Materials Science, Tohoku University, Japan, [2]CREST, JST, Japan*

**HP-08 EFFECT OF CAPPING LAYER MATERIAL ON TUNNEL MAGNETORESISTANCE IN CoFeB/MgO/CoFeB MAGNETIC TUNNEL JUNCTIONS**

Koji Tsunekawa, David D. Djayaprawira, Motonobu Nagai, Hiroki Maehara, Shinji Yamagata, Naoki Watanabe, *Anelva corporation, Japan*

**HP-09 TUNNEL MAGNETORESISTANCE IN MAGNETIC TUNNEL JUNCTIONS WITH A DISORDERED $Co_2(Cr_{1-x}Fe_x)Al$ FULL-HEUSLER ALLOY FILM**

Susumu Okamura[1], Aya Miyazaki[1], Nobuki Tezuka[2], Satoshi Sugimoto[1], Koichiro Inomata[2], *[1]Dept. of Materials Science, Tohoku University, Japan, [2]Dept. of Materials Science, Tohoku University and CREST, JST, Japan*

**HP-10 X-RAY ABSORPTION AND X-RAY MAGNETIC CIRCULAR DICHROISM STUDIES OF A MONATOMIC BCC-Co(001)LAYER FACING AN AMORPHOUS Al-O TUNNEL BARRIER**

Toshikazu Katayama[1], Toshiaki Saito[2], Shinji Saito[2], Yoshinari Kurosaki[1], Koya Miyokawa[2], Tomoyuki Kamino[2], Kie Kobayashi[2], Yoshishige Suzuki[3], Shinji Yuasa[1], Tsuneharu Koide[4], *[1]National Institute of Advanced Industrial Science and Technology, Japan, [2]Dept. of Physics, Toho University, Japan, [3]CREST-JST, Japan, [4]KEK Photon Factory, IMSS, Japan*

**HP-11 NEGATIVE TMR IN MAGNETIC TUNNELING JUNCTIONS WITH Zr OXIDE BARRIER**

Takahiro Moriyama[1], Xiao Hai Xiang[1], Wei Gang Wang[1], Fei-Fei Li[2], Tao Zhu[2], Jun Du[2], Ming-wen Xiao[2], Zheng-Zhong Li[2], An Hu[2], John Q. Xiao[1], *[1]Dept. of Physics and Astronomy, University of Delaware, United States of America, [2]National Laboratory of Solid State Microstructures, Nanjing University, China*

**HP-12 LARGE MAGNETORESISTANCE RATIO AND LOW RESISTANCE-AREA PRODUCT IN MAGNETIC TUNNEL JUNCTION WITH AlHfO$_x$ BARRIER**

Kenji Noma, Koujiro Komagaki, Kouji Yamada, Hitoshi Kanai, Yuji Uehara, *Advanced Head Technology Development Dept., Fujitsu Ltd., Japan*

**HP-13 BIAS-VOLTAGE DEPENDENCE OF TUNNEL MAGNETORESISTANCE DEPENDING ON THE CRYSTAL STRUCTURE OF BOTTOM FERROMANGETIC ELECTRODE**

Sung-Jin Ahn[1], Takeharu Kato[1], Hitoshi Kubota[2], Yasuo Ando[1], Terunobu Miyazaki[1], *[1]Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan, [2]Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan*

**HP-14 NOISE PROPERTIES OF MAGNETIC TUNNEL JUNCTIONS**

Anis F. Md Nor, Yasuo Ando, Naoki Mochizuki, Terunobu Miyazaki, *Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan*

**HP-15 SPIN IMBALANCE ENHANCED MAGNETORESISTANCE IN Co-Al-Co DOUBLE-TUNNEL JUNCTIONS**

Jia-Hong Shyu[1], Fu-Yi Tang[2], Jenq-Wei Chen[2], Yeong-Der Yao[1], *[1]Dept.of Physics, National Taiwan University, Taiwan, [2]Institute of Physics, Academia Sinica, Taiwan*

**HP-16 THERMAL STABILITY OF MAGNETIC TUNNEL JUNCTIONS WITH NEW AMORPHOUS ZrAl ALLOY FILMS AS UNDER AND CAPPING LAYERS**

Chul-Min Choi, Jin-Oh Song, Seong-Rae Lee, *Div. of Materials Science and Engineering, Republic of Korea*

**HP-17 SPIN FILTER TYPE MAGNETIC TUNNEL JUNCTION USING EuO FERROMAGNETIC BARRIER**

Tetsuro Matsumoto[1], Kenji Kawaguchi[2], Naoto Koshizaki[2], Satoru Kashiwaya[3], Kiyoe Tani[3], Katsuhiko Yamaguchi[4], Koji Yamada[1], *[1]Department of Material Sciences, Saitama University, Japan, [2]Nanoarchitectonics Research Center, National Institute of Advanced Industrial Science & Technology, Japan, [3]Nanoelectronics Research Institute, National Institute of Advanced Industrial Science & Technology, Japan, [4]Faculty of Education, Fukushima University, Japan*

**HP-18 TUNNEL MAGNETORESISTANCE ENHANCEMENT IN FERROMAGNETIC TUNNEL JUNCTIONS WITH FERROMAGNETIC NANO-PARTICLE LAYER INSERTION**

Hiroaki Sukegawa[1], Shinichi Nakamura[2], Atsufumi Hirohata[3], Nobuki Tezuka[4], Satoshi Sugimoto[1], Koichiro Inomata[4], *[1]Dept. of Material Science, Tohoku University, Japan, [2]Aoyama Gakuin University, Japan, [3]CREST-JST, Japan, [4]Dept. of Material Science, Tohoku University & CREST-JST, Japan*

**HP-19 ROOM TEMPERATURE STABILITY STUDY IN SILICON BASE MAGNETIC TUNNELING TRANSISTOR**

Ying Wen[1], Chi Kuen Lo[2], Yeong Der Yao[3], Lan Ching Hsieh[2], Der Ray Huang[2], *[1]Dept. of Mater. Sci. & Engineer., Tsing Hua Univ., Taiwan, [2]OES, Industrial Tech. Res. Inst., Taiwan, [3]Inst. of Physics, Academia Sinica, Taiwan*

**HP-20 INVERSE MAGNETORESISTANCE IN MAGNETIC TUNNEL JUNCTION WITH AN $Fe_3O_4$ ELECTRODE**

Chando Park, Jian-Gang Zhu, Ying Guo Peng, David E. Laughlin, Robert M. White, *Dept.of Electrical and Computer Engineering, Carnegie Mellon University, United States of America*

**HP-21 EFFECT OF NITROGEN INCORPORATION TO OXIDATION PROCESS ON THE RELIABILITY OF MAGNETIC TUNNEL JUNCTIONS**

Kwang-Seok Kim[1], Beong-Ki Cho[1], *[1]Dept. of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Republic of Korea*

**HP-22 DIELECTRIC TUNNEL CHARGE TRANSPORT CHARACTERISTICS OF MTJ FOR MRAM APPLICATION**

Simon C. Li[1], J.M. Lee[2], M.F. Shu[2], J. P. Su[1], Te-Ho Wu[1], *[1]Taiwan SPIN Research Center, Taiwan, [2]Graduate School of Engineering Science & Technology, Taiwan*

**HP-23 ENHANCEMENT OF THE TUNNELLING MAGNETORESISTANCE EFFECT**

Matthew E. Eames, John C. Inkson, *School of Physics, University of Exeter, United Kingdom*

**HP-24 STUDY OF THE RELATIONSHIP BETWEEN SCALABILITY OF MTJ AND SWITCHING FIELD USING SPM**

A. Fervin Moses[1], Seung Bae Park[1], Jin Hee Heo[1], Tae Wan Kim[2], Il Sub Chung[1], *[1]School of Information and Communications Engineering, Republic of Korea, [2]Samsung Advanced Institute of Technology, Republic of Korea*

**HP-25 EFFECTS OF Kr ION BOMBARDMENT FOR [Fe/MgO/Fe] BASED MAGNETIC TUNNELING JUNCTIONS**

Yasuyoshi Miyamoto, Kenji Machida, Ken-ichi Aoshima, Nobuhiko Funabashi, Kiyoshi Kuga, *NHK Science & Technical Research Labs., Japan*

**HP-26 MAGNETIC AND ELECTRONIC STATES OF A MONATOMIC Fe (001) LAYER FACING AN EPITAXIAL MgO(001) TUNNEL BARRIER STUDIED BY USING XAS AND XMCD MEASUREMENTS**

Kouya Miyokawa[1], Shinji Saito[1], Tomoyuki Kamino[1], Koji Hanashima[1], Toshiaki Saito[1], Toshikazu Katayama[2], Yoshishige Suzuki[2], Kazutoshi Mamiya[3], Tsuneharu Koide[3], Shinji Yuasa[4], *[1]Dept. of Physics, Toho University, Japan, [2]NanoElectronics Reseach Institute, National Institute of AIST, Japan, [3]Photon Factory, IMSS, KEK, Japan, [4]PREST, Japan Science and Technology Agency (JST), Japan*

**HP-27 MAGNETIZATION SWITCHING AND TUNNELING MAGNETORESISTANCE EFFECTS WITH SYNTHETIC ANTIFERROMAGNET FREE LAYERS CONSISTING OF AMORPHOUS CoFeSiB**

Jae Youn Hwang[1], Soon Sub Kim[1], Jang Roh Rhee[1], Byong Sun Chun[2], Il Sang You[2], Byung Seok Oh[2], Young Keun Kim[2], Taewan Kim[3], Wanjun Park[3], *[1]Dept. of Physics, Sookmyung Women's University, Republic of Korea, [2]Division of Materials Science and Engineering, Korea University, Republic of Korea, [3]Materials and Devices Laboratory, Samsung Advanced Institute of Technology, Republic of Korea*

**HP-28 CHARACTERISTICS OF THE $Al_2O_3$ BARRIER WITH CoFeB PINNED LAYER IN MAGNETIC TUNNEL JUNCTIONS**

Ji Young Bae[1], Woo Chang Lim[1], Tae Wan Kim[2], Taek Dong Lee[1], *[1]Department of Materials Science and Engineering, KAIST, Republic of Korea, [2]Devices Lab. SAIT, Republic of Korea*

**HP-29 SWITCHING CHARACTERISTICS IN MAGNETIC TUNNEL JUNCTIONS WITH A SYNTHETIC ANTIFERROMAGNETIC FREE LAYER**

Yun Ki Lee[1], Young Keun Kim[1], Tae Wan Kim[2], Wanjun Park[2], Injun Hwang[2], Won-Cheol Jeong[3], Jangeun Lee[3], *[1]Division of Materials Science and Engineering, Korea University, Republic of Korea, [2]Samsung Advanced Institute of Technology, Republic of Korea, [3]Samsung Electronics, Co., Ltd, Republic of Korea*

**HP-30 SURFACE PLASMON RESONANCE ANALYSIS OF INSULATING $AlO_x$ BARRIER IN MAGNETIC TUNEL JUNCTIONS PREPARED BY NATURAL OXIDATION METHOD**

Young Ho Do, Jung Yup Yang, Kap Soo Yoon, Won Jun Choi, Ja Hyun Koo, Cae Ok Kim, Jin Pyo Hong, *New functional materials and devices lab, Department of Physics, Hanyang University, Republic of Korea*

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## Session HQ
## Exchange Biasing

**M. Tsunoda**

Tohoku University

**HQ-01 EXCHANGE BIAS MODEL IN FERROMAGNETIC / ANTIFERROMAGNETIC BILAYER WITH $L1_2$-TYPE ORDERED ANTIFERROMAGNET**

Chiharu Mitsumata[1], Akimasa Sakuma[2], Kazuaki Fukamichi[3], *[1]Advanced Electronics Research Lab., Hitachi Metals, Ltd., Japan, [2]Dept. of Applied Physics, Graduate School of Engineering, Tohoku University, Japan, [3]Dept. of Material Sience, Graduate School of Engineering, Tohoku University, Japan*

**HQ-02 EXCHANGE BIAS CONTROL IN CoFeIrMn VIA GRAIN SIZE CONTROL**

G. Vallejo Fernandez, M. Vopsaroiu, S. Manzoor, K. O'Grady, *Department of Physics, The University of York, United Kingdom*

**HQ-03 EXCHANGE BIAS AND GIANT MAGNETORESISTANCE IN SPIN VALVES WITH PICO-SCALE ANTIFERROMAGNETIC LAYERS**

Katherine L. Perdue[1], Matthew J. Carey[2], Patricia D. Sparks[1], James C. Eckert[1], *[1]Physics Department, Harvey Mudd College, United States of America, [2]Hitachi Global Storage Technologies, United States of America*

**HQ-04 MAGNETIZATION REVERSAL IN EXCHANGE BIASED MULTILAYERS DETECTED BY GIANT MAGNETORESISTANCE EFFECTS**

Z. B. Guo[1], K. B. Li[1], J. J. Qiu[1], G. C. Han[1], Y. K. Zheng[1], P. Luo[1], L. H. An[1], Yi Hong Wu[2], *[1]Data Storage Institute, Singapore, [2]Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

**HQ-05 EFFECT OF METALLIC Al CAP LAYER ON THE INTERLAYER COUPLING IN NANO-OXIDE ADDED SPIN VALVES**

Kebin Li[1], Jin Jun Qiu[1], Guchang Han[1], Zai Bing Guo[1], Yuankai Zheng[1], Yihong Wu[2], *[1]Data Storage Institute, Singapore, Singapore, [2]Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

**HQ-06 CO-EXISTENCE OF BIQUADRATIC AND UNIDIRECTIONAL ANISOTROPY IN IrMn/Co/$FeO_x$/Co FILMS**

Chih-Huang Lai, Chih-Ta Shen, *Department of Materials Science and Engineering, National Tsing Hua University, Taiwan*

**HQ-07 EXCHANGE COUPLING OF Fe/NiO THROUGH NONMAGNETIC LAYER IN NiO**

Jong-Min Kim, Young-Sung Kim, *Advanced Material Process of Information Technology, Sungkyunkwan University, Republic of Korea*

**HQ-08 A MIXED BEHAVIOR OF TRAINING EFFECT AND TIME RELAXATION IN EXCHANGE BIASED SYSTEMS**

Joong Hoe Dho[1], C. W. Leung[1], H. H. Kim[2], H. H. Kim[3], M. G. Blamire[1], *[1]Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom, [2]Nanoscience Center, IRC in Nanotechnology, University of Cambridge, United Kingdom, [3]Memory Division, Semiconductor Business, Samsung Electronics Co. Ltd., Republic of Korea*

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## Exchange Biasing and Fast Switching II

**S. C. Shin**

Center for Nanospinics of Spintronic Materials and Dept. of Physics, KAIST

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Nguyen N. Phuoc, Yevgen Pogoryelov, Takao Suzuki, *Information Storage Materials Laboratory, Toyota Technological Institute, Japan*

**HR-02 PERPENDICULAR EXCHANGE BIAS IN NICKEL/ANTIFERROMAGNETIC BILAYERS**

Sebastiaan van Dijken, Matthew Crofton, J.M.D. Coey, *SFI Trinity Nanoscience Laboratory, Physics Department, Trinity College, Ireland*

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H. W. Joo[1], S. W. Kim[2], M. S. Lee[1], J. H. An[1], S. D. Choi[1], K. A. Lee[1], S. S. Lee[2], D. G. Hwang[2], *[1]Dept. of Physics, Dankook University, Republic of Korea, [2]Dept. of Computer and Electronic Physics, Republic of Korea*

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Yong-Goo Yoo[1], Seong-Gi Min[2], Mun-Cheol Paek[1], Kwang-Yong Kang[1], Seong-Cho Yu[2], *[1]Information Storage Device Team, Electronics and Telecommunications Research Institute, Republic of Korea, [2]Department of Physics, Chungbuk National University, Republic of Korea*

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Dong Young Kim[1], Cheol Gi Kim[1], Chong Oh Kim[1], Migaku Takahashi[2], Masakiyo Tsunoda[2], Masohiro Shibata[2], *[1]ReCAMM, Chungnam National University, Republic of Korea, [2]Department of Electronic Engineering, Tohoku University, Japan*

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Hyuk-Jae Jang[1], Doug Stone[2], Pete Eames[1], E. Dan Dahlberg[1], *[1]Dept. of Physics, University of Minnesota, United States of America, [2]Physics Dept., St. Olaf College, United States of America*

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Christian Bayer[1], Joerg Jorzick[1], Burkard Hillebrands[1], Sergej O. Demokritov[2], Andrei N. Slavin[3], Konstantin Guslienko[4], Dmitri Berkov[5], Natasha Gorn[5], Mikhail P. Kostylev[6], *[1]Fachbereich Physik and Forschungsschwerpunkt MINAS, Technische Universitaet Kaiserslautern, Germany, [2]Institut fuer Angewandte Physik, Westfaelische Wilhelms-Universitaet Muenster, Germany, [3]Department of Physics, Oakland University, Rochester, United States of America, [4]Materials Science Division, Argonne National Laboratory, United States of America, [5]INNOVENT e.V. Jena, Pruessingstrasse, Germany, [6]St. Petersburg Electrotechnical University, Russian Federation*

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Florin Ciubotaru[1], Alexandru Stancu[1], Mihai Cerchez[2], *[1]Alexandru Ioan Cuza University, Romania, [2]Fachbereich Physik, Duisburg-Essen University, Germany*

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## Microwave and Magneto-Optic Materials/Devices

**M. Inoue**

Toyohashi University of Technology

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Rantschler James, Maranville Brian, McMichael D Robert, Chen Pei Jei, William Eglehoff, Jr., *National Institute of Standards and Technology, United States of America*

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Yann Lamy, Bernard Viala, *CEA-DRT-LETI Grenoble, France*

**HS-03 THIN ELECTROMAGNETIC WAVE ABSORBER CONTAINING Fe-Co ALLOY FOR QUASI-MICROWAVE BAND**

Yan Nie[1], Hua Hui He[1], Long You[2], *[1]Dept. of Electronic Science and Technology, Huazhong University of Science and Technology, China, [2]Dept. of Electrical Engineering and Compute Science, Nagoya University, Japan*

**HS-04 MICROWAVE COMPOSITES FILLED WITH FERROMAGNETIC FILMS**

Igor T. Iakubov, Andrey N. Lagarkov, Sergey A. Maklakov, Alexey V. Osipov, Konstantin N. Rozanov, Ilya A. Ryzhikov, Sergey N. Starostenko, *Institute for Theoretical and Applied Electromagnetics, Russian Federation*

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Tobias Korn[1], Marta Kerekes[1], Dana Stanescu[2], Pascal Xavier[2], Ursula Ebels[1], *[1]SPINTEC CEA/CNRS, France, [2]IMEP CNRS-INPG-UJF, France*

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Sang Won Lee[1], Sam Jin Kim[1], In-Bo Shim[1], Ji Young Lee[2], Hyoung Jin Kim[2], Chul Sung Kim[1], *[1]Dept. of Physics, Kookmin University, Republic of Korea, [2]Dept. of Forest Products, Kookmin University, Republic of Korea*

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Kengo Sugahara[1], Shinji Tanabe[1], Masahiro Yamaguchi[2], *[1]Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan, [2]Department of Electrical and Communication Engineering, Tohoku University, Japan*

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Masahiko Mizoguchi[1], Kazuhiro Nishimura[1], Hironaga Uchida[1], Mitsuteru Inoue[1], Jun Akedo[2], *[1]Dept. of Electrical and Electronic Eng., Toyohashi University of Technology, Japan, [2]National Institute of Advanced Industrial Science and Technology, Japan*

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E. A. Gan'shina[1], M. Yu. Kochneva[1], P. N. Scherbak[1], K. Aimuta[2], M. Inoue[2], *[1]Faculty of Physics, Moscow State University, Russian Federation, [2]Toyohashi University of Technology, Japan*

**HS-10 FARADAY ROTATIONS OF QUATERNARY DILUTED MAGNETIC SEMICONDUCTORS $Cd_{1-X-Y}Mn_XHg_YTe$ CRYSTALS**

Young Hun Hwang[1], Hye Kyeong Kim[1], Young Ho Um[1], Hyo Yeol Park[2], Gwang Soo Jeen[3], *[1]Department of Physics, University of Ulsan, Republic of Korea, [2]Department of Semiconductor Application, Ulsan College, Republic of Korea, [3]Department of Physics, Pusan National University, Republic of Korea*

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Alexander Khanikaev[1], Mitsuteru Inoue[1], Alexander Granovsky[2], *[1]Electronic Engineering Department, Toyohashi University of Technologies, Japan, [2]Faculty of Physics, Moscow State University, Russian Federation*

**HS-12 AN INTEGRATED OPTICAL WAVEGUIDE ISOLATOR BASED ON MULTI MODE INTERFERENCE BY WAFER DIRECT BONDING**

Jong Wook Roh[1], Jeong Su Yang[1], Seok Lee[2], Deok Ha Woo[2], Tetsuya Mizumoto[3], Woo Young Lee[1], *[1]Department of Material Science and Engneering, Yonsei Umiversity, Seoul, Republic of Korea, [2]Photonic Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea, [3]Department of Electrical and Elctronic Engineering, Tokyo Institute of Technology, Tokyo, Japan*

**HS-13 FABRICATION OF VOLTAGE-DRIVEN MAGNETO-OPTIC SPATIAL LIGHT MODULATOR**

H. Takagi[1], J. H. Park[2], M. Mizoguchi[2], K. Nishimura[2], H. Uchida[2], M. Inoue[2], *[1]Toyota National College of Technology, Japan, [2]Toyohashi University of Technology, Japan*

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Daisuke Kobayashi[1], Kazuhiro Nishimura[1], Hironaga Uchida[1], Andrey A. Fedyanin[2], Oleg A. Aktsipetrov[2], Mitsuteru Inoue[1], *[1]Dept. of Electrical and Electronic Engineering, Toyohashi University of Technology, Japan, [2]Dept. of Physics, Moscow State University, Russian Federation*

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Tsuyoshi Kodama, Hironaga Uchida, Alexander V. Baryshev, Kazuhiro Nishimura, Mitsuteru Inoue, *Dept. Electrical and Electronic Engineering, Toyohashi University of Technology, Japan*

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## Crystalline and Transport Properties of Magnetic Materials

**K. Sumiyama**

Nagoya Institute of Technology

**HT-01 MAGNEITC ANISOTROPY AND MAGNETIZATION VARIATION WITH TEMPERATURE**

Tamar Telem-Shafir, Gil Markovich, *School of Chemistry, Tel Aviv University, Israel*

**HT-02 DESTRUCTION OF THE MOTT-HUBBARD INSULATING STATE UNDER HIGH PRESSURE IN MANGANESE MONOCHALCOGENIDES WITH NaCl STRUCTURES**

Yoshimi Mita, *Graduate School of Engineering Science, Osaka University, Japan*

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R. Nirmala[1], V. Sankaranarayanan[1], K. Sethupathi[1], A. V. Morozkin[2], Y. Yamamoto[3], H. Hori[3], *[1]Department of Physics, Indian Institute of Technology Madras, India, [2]Department of Chemistry, Moscow Lomonosov State University, Moscow, GSP - 3, 119899, Russian Federation, [3]School of Materials Science, Japan Advanced Institute of Science and Technology, Ishikawa 923-1292, Japan*

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Sung Hyun Yoon[1], Jeong-Su Yang[2], Chul Sung Kim[3], *[1]Department of physics, Gunsan National University, Republic of Korea, [2]Department of Material Science and Engineering, Yonsei University, Republic of Korea, [3]Department of Physics, Kookmin University, Republic of Korea*

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Shigeo Sakurai, Naoya Soda, Masanori Kobayashi, *Dept. of Electrical and Electronic Engineering, Ibaraki University, Japan*

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Hiroshi Hatafuku, Keisuke Watanabe, Takuya Yoshida, *Dept. of Electrical and Electronic Engineering, Iwate University, Japan*

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Soon-Gun Lee[1], Kwang-Ryeol Lee[2], Yong-Chae Chung[1], *[1]Department of Ceramic Engineering, Hanyang University, Republic of Korea, [2]Future Technology Research Division, Korea Institute of Science and Technology, Republic of Korea*

**HT-08 MAGNETIC ANISOTROPIES OF OBLIQUELY EVAPORATED Co FILMS**

Osamu Kohmoto, Yasumasa Yoshitomi, Hiroki Murakami, *Dept. of Physics, Okayama University, Japan*

**HT-09 FIELD INDUCED SPIN TRANSITIONS AND LARGE MAGNETORESISTANCE IN THE QUASI-ONE-DIMENSIONAL MAGNET $Ca_3Co_2O_6$**

Koji Yamada[1], Jiao Lin Luo[1], Zentarou Honda[1], Hiroko Aruga[2], *[1]Dept. Materials Science, Saitama University, Japan, [2]RIKEN, Japan*

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## Unconventional Magnetic Properties

**T. Asahi**

Waseda University

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Hironori Nishihara[1], Kenta Komiyama[1], Isamu Oguro[2], Takeshi Kanomata[3], Takashi Harada[3], *[1]Faculty of Science and Technology, Ryukoku University, Japan, [2]Institute for Solid State Physics, University of Tokyo, Japan, [3]Faculty of Engineering, Tohoku Gakuin University, Japan*

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Anna Go[1], Maria Pugaczowa-Michalska[2], Ludwik Dobrzynski[3], *[1]Institute of Experimental Physics, University of Bialystok, Poland, [2]Institute of Molecular Physics, Polish Academy of Science, Poland, [3]The Soltan Institute for Nuclear Studies, Poland*

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J. Grace Lin[1], Tai-chun Han[2], *[1]Center for Nanostorage Research, National Taiwan University, Taiwan, [2]Center for Condensed Matter Sciences, National Taiwan University, Taiwan*

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C. L. Chang[1], C. L. Chen[1], G. Chern[2], H. J. Lin[3], *[1]Department of Physics, Tamkang University, Taiwan, [2]Department of Physics, Chung-Cheng University, Taiwan, [3]National Synchrotron Radiation Research Center, Taiwan*

**HU-05 PHYSICAL PROPERTIES OF $Ni_2MnGe$ ALLOY FILMS WITH DIFFERENT ATOMIC ORDERS**

Ryojin Kim[1], Nina Lee[1], Bumjoong Kim[1], Youngpak Lee[1], Yurij V. Kudryavtsev[2], Kiwon Kim[3], *[1]Quantum Photonic Science Research Center and Dept. of Physics, Hanyang Univ., Republic of Korea, [2]Inst. of Metal Physics, Ukraine, [3]Dept. of Physics, Sunmoon Univ., Republic of Korea*

**HU-06 MIXED EXCHANGE INTERACTION IN AMORPHOUS $Fe_{90-x}Mn_xZr_{10}$ ($0<x<16$) ALLOYS**

Perumal Alagarsamy[1], Srinivas Veeturi[2], Dunlap[3], *[1]Department of Physics, Indian Institute of Technology Guwahati, India, [2]Department of Physics, Indian Institute of Technology, Kharagpur, India, [3]Department of Physics, Dalhousie University, Canada*

**HU-07 OBSERVATION OF MAGNETIC INTERMARTENSITIC PHASE IN OFF-STOCHIOMETRIC Ni-Mn-Ga SINGLE CRYSTAL**

Vijay Kumar Srivastava, Ratnamala Chatterjee, *Department Of Physics,Indian Institute Of Technology,New Delhi, India*

**HU-08 INVESTIGATION OF DYNAMICAL MAGNETIC PROPERTIES IN SPIN ICE PYROCHLORE $Dy_2Ti_2O_7$**

Hue-Min Wu[1], Po Yuan Chen[1], Ray Ching Hong[1], Su-Ling Cheng[2], Jauyn Grace Lin[2], *[1]Dept. of Physics, Private Chinese Culture University, Taiwan, [2]Center of Conden. Matt. Sci. National Taiwan University, Taiwan*

**HU-09 ELECTRONIC STRUCTURES, MAGNETISM, AND HALF-METALLICITIES OF FULL-HEUSLER $Fe_{2-x}Co_xCrAl$ (x=0, 1, 2) ALLOYS**

Jae Il Lee, Y. J. Jin, *Dept. of Physics, Inha University, Republic of Korea*

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