

**Room A**

**Wednesday, September 11**

**Invited Lectures**

	<b>T. Hashimoto, presiding</b>		
12:55	1A08IL	Polymerization Induced Self-Assembly via Metal-Free Living Polymerization <u>Shinji Sugihara</u> .....	2115
	<b>S. Osawa, presiding</b>		
13:45	1A10IL	Multidisciplinary Approaches for Manipulation of Molecules, Cells and Tissues <u>Takehisa Matsuda</u> .....	2118
	<b>T. Kobayashi, presiding</b>		
14:35	1A12IL	Biomaterialized Organic-Inorganic Hybrids Aiming For Smart Drug Delivery <u>Jun Shi, Shaokui Cao</u> .....	2121
	<b>N. Kimura, presiding</b>		
15:25	1A14IL	Automobile made of plant -A dream inspired by cellulose nanofibers- <u>Hiroyuki Yano</u> .....	2124
	<b>T. Kobayashi, presiding</b>		
16:15	1A16IL	Thai Silk Fibroin/Gelatin System for Tissue Engineering and Controlled Release Applications <u>Siriporn Damrongsakkul, Sorada Kanokpanont, Juthamas Ratanavaraporn</u> .....	2127
	<b>K. Takenaka, presiding</b>		
17:05	1A18IL	From Helix to 2D : Highly Selective Polymer Reaction of Helical Polymer Membranes <u>Toshiki Aoki</u> .....	2130

**Thursday, September 12**

**Invited Lectures**

	<b>S. Okamoto, presiding</b>		
9:10	2A01IL	Block Copolymer Healing of Lithographic Defects Han-hao Cheng, Imelda Keen, Anguang Yu, Ya-mi Chuang, Idriss Blakey, Kevin S. Jack, Michael J. Leeson, Todd R. Younkin, <u>Andrew K. Whittaker</u> .....	2133

**Award Lectures**

	<b>K. Akiyoshi, presiding</b>		
10:00	2A03AL	Modification and Functionalization of Polymer Surfaces by Using Biomolecules <u>Takeshi Serizawa</u> .....	2136
	<b>R. Yoshida, presiding</b>		
10:50	2A05AL	Study on Functional Hydrogels Based on Molecular Recognition <u>Akihito Hashidzume</u> .....	2139
	<b>K. Sakurai, presiding</b>		

12:55	2A08AL	Development of Self-Organized Nanotube Materials and the Application to a Bioengineering Field <u>Toshimi Shimizu</u> .....	2142
		<b>K. Hanabusa, presiding</b>	
14:10	2A11AL	Development of high-performance semiconducting polymers based on fused $\pi$ -electron systems <u>Itaru Osaka</u> .....	2145
		<b>Y. Nagasaki, presiding</b>	
15:00	2A13AL	Development of Self-Organizing Organic Semiconductor Materials and Their Application to Organic Electronics <u>Takuma Yasuda</u> .....	2148
		<b>T. Wada, presiding</b>	
15:50	2A15AL	Development of Functional Unimolecular Micelle Consisting of Bio-based Materials <u>Toshifumi Satoh</u> .....	2151

### Friday, September 13

#### Invited Lectures

		<b>K. Hisada, presiding</b>	
9:35	3A02IL	Infrared Spectroscopic Study on Structural Changes in a Condensed Matter Induced by Minute Water Molecules <u>Takeshi Hasegawa</u> .....	2154
		<b>M. Yamaguchi, presiding</b>	
10:25	3A04IL	Effect of Intermolecular Hydrogen Bonds on the Thermomechanical Property of Polymers <u>Osamu Urakawa</u> .....	2157
		<b>Y. Chujo, presiding</b>	
11:15	3A06IL	Health and Safety via Surface Modification of Polyurethanes <u>Kenneth J. Wynne, Asima Chakravorty, Lynn Wood, Dennis Ohman</u> ...	2160

<b>Room B</b>
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### Wednesday, September 11

#### Leading-edge of Fusion Materials: Fusions of Inorganic/Organic, Soft/Hard, and Static/Dynamic

9:50	1BSO	Introductory Remarks <u>Hirotsugu Kikuchi, Ayae Sugawara-narutaki</u> .....	2437
		<b>H. Kikuchi, presiding</b>	
10:00	1B03	Preparation of Stimuli Responsive Supramolecular Materials Cross-Linked by Reversible Inclusion Complexes and its Responsive Properties <u>Yoshinori Takashima, Masaki Nakahata, Shogo Hatanaka, Hiroyasu Yamaguchi, Akira Harada</u> .....	2438
10:25	1B04	Development of molecular recognition material using DNA-conjugated thermoresponsive polymer <u>Yuuki Sugawara, Takanori Tamaki, Takeo Yamaguchi</u> .....	2440
10:50	1B05	Preparation of self-oscillating polymer brush surface by SI-ATRP	

		and evaluation of the dynamic properties <u>Tsukuru Masuda</u> , Mio Hidaka, Kenichi Nagase, Teruo Okano, Aya Akimoto Mizutani, Ryo Yoshida.....	2442
		<b>T. Sakamoto, presiding</b>	
11:15	1B06	Real-time observation of dynamic transformation of polyion complex structures consisting of block copolymers <u>Akihiro Kishimura</u> , Hidehiro Oana, Arie Wibowo, Yasutaka Anraku, Masao Washizu, Kazunori Kataoaka.....	2444
11:40	1B07	Synthesis and Thermoresponsive property of Periodically-Functionalized Poly(NIPAM) by Simultaneous Chain- and Step-Growth Radical Polymerization <u>Daisuke Ito</u> , Kotaro Satoh, Masami Kamigaito .....	2446
		<b>Y. Nagasaki, presiding</b>	
12:55	1B08	Self-Organization of Nanostructured Inorganic/Polymer Hybrid Films from Amorphous Precursors <u>Takeshi Sakamoto</u> , Satoshi Kajiyama, Tatsuya Nishimura, Takashi Kato.....	2448
13:20	1B09	Fabrication of calcite thin films by phase transfer of size-controlled POSS-core dendrimer-vaterite composite particles <u>Shiho Nakamura</u> , Kensuke Naka .....	2450
13:45	1B10	Preparation of Stimuli-responsive Organic-inorganic Hybrid Particles by Fusing Molecule-responsive Hydrogels with Silica Particles <u>Manabu Nakahori</u> , Tomoya Katoh, Akifumi Kawamura, Tadashi Uragami, Takashi Miyata .....	2452
		<b>T. Miyata, presiding</b>	
14:10	1B11	Structure Control and Function Creation of Organic-Inorganic Hybrid Microgels <u>Yasuhisa Nagase</u> , Takaaki Sato, Daisuke Suzuki .....	2454
14:35	1B12	Selective introduction of inorganic precursors into micro-phase separation structures of block copolymers <u>Hiroaki Wakayama</u> , Hiroataka Yonekura, Yasuaki Kawai, Hiroatsu Tanaka .....	2456
15:00	1B13	Precision Synthesis of Well-Defined Block Copolymers with Various Functional Groups toward Organic/Inorganic Materials Fabrication <u>Yu Shinke</u> , Kira Landenberger, Yukari Oda, Arihiro Kanazawa, Shokyoku Kanaoka, Sadahito Aoshima, Sachio Tsuboike, Shujun Zhou, Ayae Sugawara-narutaki, Tatsuya Okubo, Atsushi Shimojima .....	2458
		<b>S. Kanaoka, presiding</b>	
15:25	1B14	Design of silica-containing redox nanoparticles and their applications <u>Yukio Nagasaki</u> .....	2460
15:50	1B15	Synthesis of extremely small hollow silica nanoparticles by using polymer template <u>Jian-jun Yuan</u> , Hiroshi Kinoshita .....	2462
16:15	1B16	Creation of Hollow Nanosilica Particles Based on Living Coordination Block Copolymerization of Alkoxysilyl-substituted Allene Leading to Spontaneous Formation of Nanostructures <u>Ikuyoshi Tomita</u> , Hiroki Nakanishi, Shinsuke Inagi, Takahiro Omura, Yoshiyuki Oguchi, Hiroshi Yamauchi .....	2464

16:40	1B17	Fabrication of Polymeric Nanofibers Including Metal Salts by Electrospinning and Their Application to Preparation of NASICON Nanowires <u>Satoshi Kajiyama</u> , Eiji Hosono, Masashi Okubo, Jun'ichi Hoshino, Daisuke Asakura, Haoshen Zhou, Jun Kikkawa.....	2466
<b>K. Katagiri, presiding</b>			
17:05	1B18	Crystal Growth of Metal-Organic Frameworks (MOFs) and Synthesis of ZnO by the Pyrolysis Reaction <u>Eiji Hosono</u> , Yu Kimitsuka, Shintaro Ueno, Yoshifumi Mizuno, Masashi Okubo, Haoshen Zhou, Shinobu Fujihara .....	2468
17:30	1B19	Preparation of Shape-Controlled Polymer Gel by using Metal-Organic Framework as Templates <u>Takumi Ishiwata</u> , Yuki Furukawa, Kenta Kokado, Kazuki Sada .....	2470
17:55	1B20	Properties of Polysilane Constrained in Coordination Nanochannels <u>Takashi Kitao</u> , Takashi Uemura, Shu Seki, Masanobu Naito, Susumu Kitagawa.....	2472

## Thursday, September 12

### Leading-edge of Fusion Materials: Fusions of Inorganic/Organic, Soft/Hard, and Static/Dynamic

<b>Y. Takeoka, presiding</b>			
9:10	2B01	Functional Analysis of Macromolecular Machines driven by a Thermal Fluctuation and Single-Molecules Imaging of Chiral Polymer Motion <u>Ken-ichi Shinohara</u> , Yuu Makida .....	2474
9:35	2B02	Supramolecular hydrogel formation through self-assembly of amphiphilic tris-urea <u>Masamichi Yamanaka</u> , Daisuke Higashi, Kanako Munenobu .....	2476
10:00	2B03	Synthesis and Properties of Electro-Conductive, Tough Polymer Gels <u>Ryoichi Kishi</u> , Aki Yoneyama, Toshiaki Miura, Tomohiko Yamaguchi, Hidenori Okuzaki, Yoshihito Osada .....	2478
10:25	2B04	Syntheses and morphogenesis of conductive polymers by using hierarchical structures of a sea urchin spine <u>Yurika Munekawa</u> , Yuya Oaki, Hiroaki Imai.....	2480
<b>Y. Ohya, presiding</b>			
10:50	2B05	Preparation of structural colored materials by Layer-by-Layer deposition <u>Masanori Iwata</u> , Midori Teshima, Yukikazu Takeoka, Takahiro Seki ....	2482
11:15	2B06	Construction of regular arrangement structure consisted of poly methyl silsesquioxane micro resin at air-liquid interface <u>Shigesaburo Ogawa</u> , Hirohmi Watanabe, Takeshi Higuchi, Kentaro Uesugi, Akihisa Takeuchi, Yoshio Suzuki, Hiroshi Jinnai, Atsushi Takahara .....	2484
11:40	2B07	Nanoarchitectures Self-assembled from Polyoxometalates and Their Photoreduction Properties <u>Keita Ishiba</u> , Daisuke Kichise, Masa-aki Morikawa, Nobuo Kimizuka ...	2486
<b>A. Arakaki, presiding</b>			
12:55	2B08	Growth of multilayered ring-shaped microtubule assemblies	

		through stepwise active self-organization <u>Arif Md. Rashedul Kabir</u> , Daisuke Inoue, Hiroyuki Mayama, Kazuki Sada, Akira Kakugo .....	2488
13:20	2B09	Design of DNA origami-AuNP fusion materials with dynamic structures <u>Yuichi Ohya</u> , Mirai Hashizume, Koji Kameda, Kazuki Matsumoto, Akinori Kuzuya.....	2490
13:45	2B10	Introduction and arrangement of gold nanoparticles in core-shell type polymer particles with amino-terminated poly (butadiene) shells <u>Masaaki Kanahara</u> , Takeshi Higuchi, Masatsugu Shimomura, Hiroshi Jinnai, Hiroshi Yabu .....	2492
		<b>C. Ohtsuki, presiding</b>	
14:10	2B11	Design of functional dendrimer-gold nanorod hybrids for nanomedicine <u>Kenji Kono</u> , Xiaojie Li, Eiji Yuba, Atsushi Harada.....	2494
14:35	2B12	Mineralization by Water-Soluble Synthetic Polymers under Body Fluid Conditions <u>Kazutoshi Iijima</u> , Masamichi Nakaya, Mineo Hashizume .....	2496
15:00	2B13	Mineralization in Tough Double Network Hydrogels Inspired from Living Hard Tissues <u>Takayuki Nonoyama</u> , Ryuji Kiyama, Tasuku Nakajima, Takayuki Kurokawa, Jian Ping Gong.....	2498
		<b>Y. Oaki, presiding</b>	
15:25	2B14	Fabrication of biphasic calcium phosphate ceramics / biodegradable polymers as artificial bone materials (IV) -Improvement of interface strength- <u>Yusuke Yanagi</u> , Masahiro Fujita, Yuko Takeoka, Mamoru Aizawa, Masahiro Rikukawa .....	2500
15:50	2B15	Construction of Organic-Inorganic Fusion Structures through Formation of Hydroxyapatite Fibers in a Hydrogel Matrix <u>Chikara Ohtsuki</u> , Taishi Yokoi, Masato Itou, Masakazu Kawashita .....	2502
16:15	2B16	Phase Transition of Hyper-complex Gel into Organic/Inorganic Solid Solution (Soft-Hard Transition) <u>Takashi Iwatsubo</u> , Ryoichi Kishi, Takuya Ohzono, Tomohiko Yamaguchi...	2504
		<b>H. Kikuchi, presiding</b>	
16:40	2B17IL	Atomic steps -Roles in crystal growth and pattern formation- <u>Makio Uwaha</u> .....	2506

## Friday, September 13

### Leading-edge of Fusion Materials: Fusions of Inorganic/Organic, Soft/Hard, and Static/Dynamic

		<b>S. Ujiie, presiding</b>	
9:10	3B01	Crystallization of calcium carbonate in thermotropic nematic liquid crystalline phase as crystal growth field <u>Takanori Sajima</u> , Hiroki Higuchi, Shota Daiki, Yasushi Okumura, Tatsuya Nishimura, Takashi Kato, Hirotsugu Kikuchi.....	2509
9:35	3B02	Hierarchical Macroscopic Organization of Liquid Crystalline Inorganic Nanosheet Colloids <u>Teruyuki Nakato</u> , Yoshihiro Nono, Emiko Mouri .....	2511
10:00	3B03	Vertically-Aligned Mesochannels Induced by Phase Transition from Cubic to Cylinder of Lyotropic Liquid Crystal <u>Mitsuo Hara</u> , Yuko Kama, Shusaku Nagano, Takahiro Seki .....	2513

<b>T. Nakato, presiding</b>		
10:25	3B04	Control of Aggregation Structure of Giant Ring-shaped Polyoxomolybdate with Liquid-Crystalline Organic Molecules <u>Tatsuhiro Tsumori</u> , Osamu Tsutsumi ..... 2515
10:50	3B05	Preparation of composites obtained from main-chain liquid crystal polymers with functional groups forming hydrogen bonds <u>Seiji Ujiie</u> , Genichiro Shimada, Masanori Nata ..... 2517
11:15	3B06	Exotic structure of molecular aggregation in bicontinuous cubic mesophase and light-induced phase transition Ryo Hori, Yohei Miwa, Katsuhiro Yamamoto, Kazuya Saito, <u>Shoichi Kutsumizu</u> ..... 2519
11:40	3B07	Molecular manipulator driven by the spatial variation of order parameter of liquid crystals -Design of the photonic structure by the interference fringe of UV laser- <u>Jun Yamamoto</u> ..... 2521
<b>A. Narutaki, presiding</b>		
12:55	3B08	Function Analysis of Acidic Amino Acid Region of Iron Oxide Biomineralization Protein from Magnetotactic Bacteria <u>Atsushi Arakaki</u> , Kaori Narumiya, Ayana Yamagishi, Mayumi Oda, Tadashi Matsunaga ..... 2523
13:20	3B09	Nanohybrid Cluster for Generation of Singlet Oxygen by Near Infrared Irradiation <u>Kiyofumi Katagiri</u> , Tomoki Ishida, Kei Inumaru, Koji Tomita, Tatsuya Iizuka, Motofusa Akiyama, Atsushi Ikeda ..... 2525

<b>Room C</b>
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**Wednesday, September 11**

**Polymer Synthesis by Organocatalyst**

10:15	1CSO	Introductory Remarks <u>Toshifumi Satoh</u> ..... 2527
<b>T. Satoh, presiding</b>		
10:25	1C04	Precise synthesis of poly lactic acids by a new organocatalyst involving dual activation mechanism <u>Joji Kadota</u> , Akinori Okada, Hiroshi Hirano, Yasuyuki Agari ..... 2528
<b>H. Yamaguchi, presiding</b>		
10:50	1C05	Controlled/living polymerization of cyclic esters and cyclic carbonates catalyzed by organic Brønsted acid <u>Kosuke Makiguchi</u> , Seiya Kikuchi, Shin-ichiro Sato, Toyoji Kakuchi, Toshifumi Satoh ..... 2530
11:15	1C06	Precise synthesis of poly(methyl methacrylate) by organocatalytic group transfer polymerization <u>Naoya Kubota</u> , Kenji Takada, Yougen Chen, Keita Fuchise, Shinichiro Satoh, Toyoji Kakuchi, Toshihumi Satoh ..... 2532
11:40	1C07	Group transfer polymerization of acrylate and N,N-dialkylacrylamide catalyzed by strong organic acids <u>Kenji Takada</u> , Keita Fuchise, Yougen Chen, Naoya Kubota, Shin-ichiro Sato, Toyoji Kakuchi, Toshifumi Satoh ..... 2534

<b>T. Satoh, presiding</b>			
12:55	1C08IL	Synthesis of Polymeric Chiral Organocatalysts and Their Application to Asymmetric Reactions <u>Naoki Haraguchi</u> .....	2536
<b>H. Iida, presiding</b>			
13:45	1C10	Ring-opening polymerization of various lactones using diphenyl phosphate directed toward the preparation of polyrotaxanes <u>Satoshi Uchida</u> , Hiroyuki Iguchi, Toshikazu Takata .....	2539
14:10	1C11	Synthesis of reactive macromolecular [2]rotaxanes via living ring-opening polymerization with organocatalyst and their application <u>Daisuke Aoki</u> , Satoshi Uchida, Toshikazu Takata .....	2541
<b>S. Uchida, presiding</b>			
14:35	1C12	Organocatalytic Ring-Opening Polymerization of L-Lactide in Supercritical Carbon Dioxide <u>Nobuyuki Mase</u> .....	2543
15:00	1C13	Ring-Opening Polymerization of Cyclic Ester by Cyclodextrin as Supramolecular Catalyst <u>Aiko Harima</u> , Yoshinori Takashima, Hiroyasu Yamaguchi, Akira Harada ...	2545
15:25	1C14	Synthesis of stereo multi-block poly(lactic acids) via direct polycondensation with sulfonic acid-based catalysts <u>Kanako Ueki</u> , Kazunari Masutani, Yoshiharu Kimura .....	2547
<b>S. Matsuoka, presiding</b>			
15:50	1C15	Isomerization-Free Polycondensation of Unsaturated Cyclic Anhydrides with Diols and Preparation of Polyester Gels via Photo Cross-linking and Isomerization in the Gels <u>Tang Tang</u> , Akinori Takasu .....	2549
16:15	1C16	Direct Polycondensation of Mandelic Acid Using Onium Salt Catalysts <u>Miyuki Oshimura</u> , Takahiro Hiura, Akinori Saito, Makoto Fukuoka, Yusuke Hemmi, Hikaru Momose, Tomohiro Hirano, Koichi Ute...	2551
16:40	1C17	Onium salt catalysts: application in the polymer chemistry <u>Atsushi Abiko</u> .....	2553
<b>M. Oshimura, presiding</b>			
17:05	1C18	Living Radical Polymerization with Organic Catalysts -Amine Catalysts and Organic Salt Catalysts- <u>Atsushi Goto</u> , Akimichi Ohtsuki, Lin Lei, Hironori Kaji .....	2555
17:30	1C19	Photo-Induced Living Radical Polymerization With Organic Catalysts: Investigation of Excitation Wavelength Dependence <u>Akimichi Ohtsuki</u> , Atsushi Goto, Hironori Kaji.....	2557
17:55	1C20	Oligomerization of polar vinyl monomers catalyzed by N-heterocyclic carbenes <u>Shin-ichi Matsuoka</u> , Terumasa Kato, Shoko Namera, Masanori Nakazawa, Koji Takagi, Masato Suzuki .....	2559

**Thursday, September 12**

**Polymer Synthesis by Organocatalyst**

<b>N. Haraguchi, presiding</b>			
9:10	2C01	Development of resin-supported peptide organocatalysts <u>Kazuaki Kudo</u> .....	2561
9:35	2C02	Development of Helical Polymer-Based Asymmetric Organocatalysts Containing Cinchona Alkaloid and Riboflavin	

		Derivatives	
		<u>Hiroki Iida</u> , Soichiro Iwahana, Eiji Yashima .....	2563
		<b>K. Kudo, presiding</b>	
10:00	2C03	Synthesis of thioether linked cinchona alkaloid based main chain polymeric organocatalysts for asymmetric reactions	
		<u>Md. Robiul Islam</u> , Naoki Haraguchi, Shinichi Itsuno .....	2565
10:25	2C04	Synthesis of dimeric and polymeric main-chain chiral quaternary ammonium salt polymers and their applications to asymmetric reactions	
		<u>Md. Mehadi Hassan</u> , Md. Masud Parvez, Naoki Haraguchi, Shinichi Itsuno .....	2567
		<b>Ionic Liquids and Polymers</b>	
11:05	2CS0	Introductory Remarks	
		<u>Hiroyuki Ohno</u> .....	4185
		<b>Y. Ouchi, presiding</b>	
11:15	2C06IL	Application of Ionic Liquids to Biotechnology	
		<u>Masahiro Goto</u> .....	4186
		<b>Y. Fukaya, presiding</b>	
12:55	2C08	Evaluation of hydrated ionic liquids based on cholinium dihydrogen phosphate and effectiveness as protein solvents	
		<u>Kyoko Fujita</u> , Hiroyuki Ohno .....	4189
13:20	2C09	Rheological properties of concentrated solutions of polysaccharides in ionic liquids	
		<u>Jun-ichi Horinaka</u> , Yuhei Urabayashi, Ryosuke Yasuda, Toshikazu Takigawa .....	4191
13:45	2C10	On the Segment Size of Cellulose Chain in Ionic Liquids	
		<u>Ayaka Maeda</u> , Takahiro Sato, Tadashi Inoue .....	4193
14:10	2C11	Synthesis and Characterization of Ionic Liquids Having Boronic Acid (IV) -Solubility of Saccharide and Their Mechanism Analysis-	
		<u>Erina Kishi</u> , Masahiro Fujita, Yuko Takeoka, Masahiro Rikukawa .....	4195
		<b>J. Horinaka, presiding</b>	
14:35	2C12	Development of high polar ionic liquid/water systems showing unique phase behaviors	
		<u>Yukinobu Fukaya</u> , Hiroyuki Ohno .....	4197
15:00	2C13	Ionic Liquid for Electron Microscope Observation of Polymer Materials	
		<u>Tetsuya Tsuda</u> , Eiko Mochizuki, Shoko Kishida, Susumu Kuwabata ...	4199
15:25	2C14	Development of chemical oscillation reaction using ionic liquids and application of self-oscillating polymers	
		<u>Takeshi Ueki</u> , Ko Matsukawa, Ryo Yoshida .....	4201
15:50	2C15	Improvement of Removal Efficiency of VOC by Polymer Membranes containing Calixarene and Ionic Liquid	
		<u>Tadashi Uragami</u> , Hiroki Sugita, Takashi Miyata .....	4203
		<b>N. Matsumi, presiding</b>	
16:15	2C16	Synthesis and carbon dioxide selective permeability of polyphenylacetylenes having one or two alkylimidazolium ionic liquid moieties in the side chains	
		<u>Masahiro Teraguchi</u> , Takashi Kaneko, Toshiki Aoki .....	4205
16:40	2C17	Design of Functional Bicontinuous Cubic Liquid Crystals Based on Ionic Liquids and Their Applications	



		<u>Takahiro Ichikawa</u> , Takuro Matsumoto, Kanae Fujimura, Masafumi Yoshio, Takashi Kato, Hiroyuki Ohno .....	4207
17:05	2C18	In-situ and direct observation of ionic liquid interfaces for the elucidation of new functionality	
		<u>Yukio Ouchi</u> .....	4209

## Friday, September 13

### Ionic Liquids and Polymers

#### M. Teraguchi, presiding

9:10	3C01	Micro/nano-Patterning by Quantum Beam Irradiation onto Polymerizable Ionic Liquid <u>Hiro Minamimoto</u> , Akihito Imanishi, Taro Uematsu, Tetsuya Tsuda, Shu Seki, Susumu Kuwabata.....	4211
9:35	3C02	Controlled Cationic Polymerization of Vinyl Ethers Using Ionic Liquids as Solvents <u>Hayato Yoshimitsu</u> , Arihiro Kanazawa, Shokyoku Kanaoka, Sadahito Aoshima .....	4213
10:00	3C03	Synthesis of structurally well-defined protic ammonium poly(ionic liquid)s by living radical polymerizations <u>Yasuyuki Nakamura</u> , Koji Nakanishi, Shigeru Yamago, Yoshinobu Tsujii, Takashi Morinaga, Takaya Sato.....	4215
10:25	3C04	Application of a polymerized ionic liquid for photocatalyst with vitamin B12 function <u>Hisashi Shimakoshi</u> , Wei Zhang, Yoshio Hisaeda .....	4217

#### Y. Nakamura, presiding

10:50	3C05	Fabrication of Highly Electrical Conductive Epoxy Resins Containing Super-growth Carbon Nanotubes and Ionic Liquid Masahiro Shigeta, <u>Tadaoki Manba</u> , Mitsugu Uejima.....	4219
11:15	3C06	Synthesis of protein nanocapsules at the ionic liquids / water interface <u>Yasunori Oishi</u> , Masa-aki Morikawa, Nobuo Kimizuka .....	4221
11:40	3C07	Self-assembly of polyether-based diblock copolymers in ionic liquids <u>Yumi Kobayashi</u> , Takahiro Komori, Yuzo Kitazawa, Kazuhide Ueno, Hisashi Kokubo, Masayoshi Watanabe.....	4223

#### M. Fujita, presiding

12:55	3C08	Improvement of Electric Power-Storage Device Performance by Ionic Liquid and Polymer Components Masaki Yamagata, Shota Ikebe, Kazunari Soeda, <u>Masashi Ishikawa</u> ....	4225
13:20	3C09	Architect design of ionic liquid-type polymer by living radical polymerization and its application for battery materials <u>Takashi Morinaga</u> , Saika Honma, Shoko Marukane, Takaya Sato, Kohji Ohno, Yoshinobu Tsujii .....	4227
13:45	3C10	Design of Lithium Ion Conductive Organoboron Ion-gels for Improved Properties <u>Noriyoshi Matsumi</u> , Raman Vedarajan, Kumar Saismaran, Hiroki Tsutakawa .....	4229
14:10	3C11	Localization and Ionic conductivity of Ionic Liquids in Nanophase-structured Block Copolymers <u>Takeshi Kakibe</u> , Yuya Harada, Hajime Kishi .....	4231

**T. Ichikawa, presiding**

14:35	3C12	Coordination environment and transport properties of Li <sup>+</sup> ion in binary mixtures of solvate ionic liquids and polymers <u>Toshihiko Mandai</u> , Ryosuke Kido, Kaori Iwata, Satoru Imaizumi, Kazuhide Ueno, Kaoru Dokko, Masayoshi Watanabe ..... 4233
15:00	3C13	Synthesis and character of polyether with ionic unit <u>Keisuke Ohta</u> , Shigetaka Hayano, Yasuo Tsunogae, Tetsuaki Matsubara... 4235
15:25	3C14	Synthesis and Characterization of Liquid Zwitterions (IV) -Effect of PEO- <u>Mitsutake Suematsu</u> , Masahiro Fujita, Yuko Takeoka, Masahiro Rikukawa ..... 4237

**Room D****Wednesday, September 11****Chiral Polymers and Supramolecules: Synthesis and Function Exploration**

9:50	1DSO	Introductory Remarks <u>Katsuhiko Maeda</u> ..... 2569
<b>T. Aoki, presiding</b>		
10:00	1D03	Radical and Anionic Polymerization of Bulky Heterocyclic Methacrylate Derivatives <u>Naoto Ikeda</u> , Kotaro Satoh, Masami Kamigaito ..... 2570
10:25	1D04	Asymmetric Anionic Polymerization of (S)-N-Maleoyl-L-leucine Derivative Bearing 24-Crown-8 Ether and Preparation of the Inclusion Complex Shuji Sato, <u>Kazuhiro Yamabuki</u> , Kenjiro Onimura, Tsutomu Oishi ..... 2572
10:50	1D05	Synthesis of Chiral Polymers by Radical Polymerization of Methacrylate Monomers Bearing the Twisted Dinaphthothiophene Structure <u>Yoko Nambu</u> , Kun Xu, Satoshi Uchida, Toshikazu Takata ..... 2574
11:15	1D06	Construction and optical properties of optically active through-space conjugated systems containing planar chiral cyclophanes <u>Kenichi Inoshita</u> , Yasuhiro Morisaki, Yoshiki Chujo ..... 2576
11:40	1D07	Synthesis of Optically Active Polymers using Asymmetric Allylic Alkylation Catalyzed by Planar-Chiral Cyclopentadienyl-Ruthenium Complex <u>Kazuki Hosoda</u> , Naoya Kanbayashi, Takaaki Okamura, Kiyotaka Onitsuka ..... 2578
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12:55	1D08IL	Generating and Facile Controlling Optically Active Polymers Learning from Coacervate Hypothesis <u>Michiya Fujiki</u> ..... 2580
<b>K. Yamabuki, presiding</b>		
13:45	1D10	Preparation of optically active main-chain conjugated polymers using circularly polarized light <u>Yue Wang</u> , Yasuhito Koyama, Tamaki Nakano ..... 2583
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14:35	1D12	Double Helix Formation and Enantioselective Dimerization of <i>m</i> -Terphenyl-based Dimer and Polymer Bearing Carboxylic Acid Groups <u>Wataru Makiguchi</u> , Junki Tanabe, Hidekazu Yamada, Hiroki Iida, Daisuke Taura, Yoshio Furusho, Eiji Yashima .....	2587
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		<b>F. Sanda, presiding</b>	
15:25	1D14	Control of the helical sense of polyphenylacetylenes by changing an achiral condition in helix-sense-selective polymerization <u>Geng Zhang</u> , Sawa Taguchi, Masahiro Teraguchi, Takashi Kaneko, Toshiki Aoki .....	2591
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16:15	1D16	Accordion-like Oscillation of Contracted and Stretched Helices of Asymmetric Helical Poly(Alkyl Propionate) <u>Yoshiaki Yoshida</u> , Asahi Motoshige, Ranko Motoshige, Takahiro Sasaki, Yasuteru Mawatari, Toshifumi Hiraoki, Masayoshi Tabata.....	2595
16:40	1D17	Stretched and Contracted Helix of Aromatic Polyacetylenes Prepared with a Rh Complex Catalyst <u>Yasuteru Mawatari</u> , Asahi Motoshige, Ranko Motoshige, Takahiro Sasaki, Yoshiaki Yoshida, Masayoshi Tabata .....	2597
		<b>Y. Inai, presiding</b>	
17:05	1D18	Helical Structure of Poly(quinoxaline-2,3-diyl)s: Control of Asymmetric Helix Induction Properties by Optimization of Structures of Chiral and Achiral Side Chains <u>Yuuya Nagata</u> , Tsuyoshi Nishikawa, Tetsuya Yamada, Takumi Adachi, Yuto Akai, Takeshi Yamamoto, Michinori Suginome .....	2599
17:30	1D19	Precise Design and Structural Control of One-handed Helical Foldamer Exploiting C <sub>2</sub> -chiral Spirobifluorene Moiety as the Chiral Orthogonal Unit <u>Hitoshi Okuda</u> , Yasuhito Koyama, Satoshi Uchida, Toshikazu Takata ...	2601
17:55	1D20	Synthesis and Properties of Metal-Containing Optically Active Conjugated Polymers <u>Yu Miyagi</u> , Hiromitsu Sogawa, Fumio Sanda .....	2603

## Thursday, September 12

### Chiral Polymers and Supramolecules: Synthesis and Function Exploration

#### K. Sakajiri, presiding

9:10	2D01	Synthesis of Helical Polyacetylene in Thermally Helicity-Controllable Asymmetric Liquid Crystal Reaction Field and Control of Helical Sense <u>Tomohiro Yamashita</u> , Keita Horie, Munju Goh, Kazuo Akagi .....	2605
9:35	2D02	Synthesis of optically active conjugated polymers bearing borneol	

		side-chain <u>Atsushi Matsumura</u> , Kohsuke Kawabata, Hiromasa Goto ..... 2607	
10:00	2D03	Conformational dynamics of substituted polyacetylene copolymer 4 Michiru Oota, Yoshiaki Yoshida, Yasuteru Mawatari, Masayoshi Tabata, <u>Toshifumi Hiraoki</u> ..... 2609	
10:25	2D04	NMR studies on the helix-sense inversion of Poly( $\beta$ - <i>n</i> -propyl L-aspartate) II <u>Tetsuo Kobayashi</u> , Hidemine Furuya, Kousaku Ohkawa, Toshifumi Hiraoki ..... 2611	
		<b>Y. Mawatari, presiding</b>	
10:50	2D05	Structural formation and phase-separation behavior of polymethacrylamide derivatives having optically active side chain in aqueous milieu <u>Takashi Aoki</u> , Yui Okamoto, Shouhei Nishimori ..... 2613	
11:15	2D06	Linkage between absolute configurations of monomers and handedness of the resulting helices Toshiyuki Sasaki, Ichiro Hisaki, Norimitsu Tohnai, <u>Mikiji Miyata</u> ..... 2615	
11:40	2D07	A Correlation between Molecular Structures of Achiral Aromatic Compounds and Chiral Crystallizations on the Basis of Twofold Helix <u>Tetsuya Miyano</u> , Ichiro Hisaki, Norimitsu Tohnai, Mikiji Miyata ..... 2617	
		<b>M. Miyata, presiding</b>	
12:55	2D08	Synthesis of self-supporting supramolecular polymeric membranes by highly selective photocyclic aromatization of membranes of helical polyphenylacetylenes prepared by helix-sense-selective polymerization <u>Mari Miyata</u> , Masahiro Teraguchi, Takashi Kaneko, Toshiki Aoki ..... 2619	
13:20	2D09	Enzymatic Synthesis of Novel Supramolecular Polymer Catalyzed by Phosphorylase Using the Inclusion Ability of Amylose for Polylactide <u>Tomonari Tanaka</u> , Shota Sasayama, Kazuya Yamamoto, Yoshiharu Kimura, Jun-ichi Kadokawa ..... 2621	
13:45	2D10	Construction of Chiral Supramolecular Structures Based on Planar-Chiral Pillar[5]arene Tomohiro Akutsu, <u>Tomoki Ogoshi</u> , Daiki Yamafuji, Tada-aki Yamagishi... 2623	
		<b>J. Kadokawa, presiding</b>	
14:10	2D11	Chirality organization of ferrocene-dipeptide conjugates <u>Toshiyuki Moriuchi</u> , Taiki Nishiyama, Toshikazu Hirao ..... 2625	
14:35	2D12	Effect of $\pi$ -conjugated moieties in the molecular design of stackable nanorings <u>Mitsuaki Yamauchi</u> , Shiki Yagai ..... 2627	
15:00	2D13	Helical Self-Assemblies and Chiroptical Properties of Tris(phenylisoxazolyl)benzene Possessing Photofunctional Groups <u>Takeharu Haino</u> , Tetsuya Masuda, Midori Takayama, Takehiro Hirao, Toshiaki Ikeda ..... 2629	
15:25	2D14	Supramolecular Helical Columnar Structures Formed by Disk-like (Phenylethynyl)benzene Derivatives with L-Alanine Parts and Helical Sense Inversion <u>Koichi Sakajiri</u> ..... 2631	
		<b>T. Moriuchi, presiding</b>	
15:50	2D15	Development of Organic Laser by Use of Chiral Liquid Crystals <u>Gen-ichi Konishi</u> , Makoto Uchimura, Hideo Takezoe, Junji Watanabe.... 2633	
16:15	2D16	Synthesis of a helical peptide possessing aromatic side chains and its chiral interaction	

16:40	2D17	<u>Mizuki Nabeta</u> , Tomoya Yamada, Yoshihito Inai ..... 2635 Chiral Spherulites Consisting of Hierarchically Assembled Ionic Conjugated Polymers with a Helically $\pi$ -Stacked Structure	2635
17:05	2D18	<u>Kazuyoshi Watanabe</u> , Zemeng Sun, Hiroshi Iida, Kazuo Akagi ..... 2637 Chirality Induction in an Optically Inactive Poly(diphenylacetylene) Derivative in Water and Its Stability <u>Kengo Hashimoto</u> , Kouhei Shimomura, Katsuhiko Maeda, Tomoyuki Ikai, Shigeyoshi Kanoh ..... 2639	2637 2639

## Friday, September 13

### Chiral Polymers and Supramolecules: Synthesis and Function Exploration

#### E. Yashima, presiding

9:10	3D01	Helix-sense-selective polymerization of 3,5-bis(hydroxymethyl)phenylacetylene bearing biphenyl group and fluorescence property of the polymer <u>Takashi Kaneko</u> , Zhichun Shi, Yoshinori Murayama, Masahiro Teraguchi, Toshiki Aoki ..... 2641	2641
9:35	3D02	Synthesis of polymer microsphere-supported chiral organocatalyst and its application to asymmetric reaction <u>Takuma Kobayashi</u> , Naoki Haraguchi, Shinichi Itsuno ..... 2643	2643
10:00	3D03	Nickel-Catalyzed Asymmetric Synthesis of Optically Active Helicenes Using Chiral Helical Polymer Ligand PQXphos <u>Takeshi Yamamoto</u> , Takumi Adachi, Michinori Suginome, Andrej Jancarik, Ivo Stary, Irena G. Stara ..... 2645	2645
10:25	3D04	Enantioselectivity and Dynamic Interface Structure of Chiral Polymer Films <u>Atsuomi Shundo</u> , Koichiro Hori, Keiji Tanaka ..... 2647	2647

#### T. Nakano, presiding

10:50	3D05	A System of Chiral Transfer to Inorganic Materials Employing Organic Acidic Compounds as Chiral Information <u>Ren-hua Jin</u> , Hiroyuki Matsykizono, Yoshiaki Arai ..... 2649	2649
11:15	3D06	Structural Analysis and Anisotropic Light Scattering Properties of Oriented Poly ( $\gamma$ -benzyl glutamate) Gel <u>Yuuki Sawayama</u> , Koichi Sakajiri, Sungmin Kang, Masatoshi Tokita, Junji Watanabe ..... 2651	2651
11:40	3D07	Volume expansion caused by the ultraviolet light irradiation in photochromic poly(L-glutamate) containing spiropyran units <u>Toshihiro Hiejima</u> , Akifumi Akai, Shuichi Kawabata ..... 2653	2653

#### Y. Nagata, presiding

12:55	3D08	Local conformation and intermolecular interactions of rigid cyclic amylose carbamate derivatives <u>Ken Terao</u> , Natsuki Asano, Shinichi Kitamura, Takahiro Sato ..... 2655	2655
13:20	3D09	Chiroptical inversion in polymer aggregates induced by geometrical effect of helical structure <u>Nozomu Suzuki</u> , Michiya Fujiki, Julian Koe ..... 2657	2657
13:45	3D10	Synthesis and Characterization of Optically Active Hyperbranched Polyfluorene Derivatives <u>Kento Watanabe</u> , Yasuhito Koyama, Tamaki Nakano, Nozomu Suzuki, Michiya Fujiki ..... 2659	2659

#### K. Maeda, presiding

14:10	3D11	Helicity Inversion of Supramolecular Corannulene Fiber <u>Daigo Miyajima</u> ,Kang Jiheong,Takuzo Aida .....	2661
14:35	3D12	Formation of controlled phase-separation structure in polymer film by using chiral self-assembling low-molecular organogelator <u>Hirokuni Jintoku</u> ,Makoto Takafuji,Hiroataka Ihara .....	2663
15:00	3D13	Synthesis and Function of a Double-Stranded Boron Helicate Bearing Bipyridine Units <u>Daisuke Taura</u> ,Kaori Shimizu,Taiki Nakamura,Hiroki Iida,Eiji Yashima ....	2665
15:25	3D14	Molecular Recognition by Supramolecular Cyclodextrin Nanocapsules in Nonpolar Solvents and its Application <u>Toshiyuki Kida</u> ,Takuya Iwamoto,Chizuru Kogame,Haruyasu Asahara,Tomoaki Hinoue,Mitsuru Akashi .....	2667

<b>Room E</b>
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**Wednesday, September 11**

**New Polymeric Materials Based on Element-Blocks -The Future Created by Hybrid  
Polymers**

9:50	1ESO	Introductory Remarks <u>Joji Ohshita</u> ,Takahiro Gunji.....	2749
		<b>T. Gunji, presiding</b>	
10:00	1E03	Synthesis of acetylene bridged-silsesquioxanes and application for SiOC ceramics <u>Kazuki Yamamoto</u> ,Tomonobu Mizumo,Joji Oshita,Toshinori Tsuru...	2750
10:25	1E04	Fluoride Anion Sensing Using Novel Organoboron Polymers <u>Noriyoshi Matsumi</u> ,Raman Vedarajan,Yasuhiro Hosono,Puhup Puneet...	2752
10:50	1E05	Synthesis of cyclic phosphines based on the chiral phosphorus atom <u>Yasuhiro Morisaki</u> ,Ryosuke Kato,Yoshiki Chujo .....	2754
11:15	1E06	Preparation of Janus nanosheets by surface modification of layered hexaniobate <u>Ryoko Suzuki</u> ,Yumi Kato,Shintaro Nagahama,Akira Shimada,Naokazu Idota,P.hubert Mutin,Yoshiyuki Sugahara .....	2756
11:40	1E07	Intercalation and Grafting Reaction of a Sol-Gel-Derived Lamellar-type Polysilsesquioxane Bearing Carboxyl Groups <u>Hironori Ohshita</u> ,Machi Ito,Naokazu Idota,Mehdi Ahmad,Bruno Boury,Yoshiyuki Sugahara .....	2758
		<b>K. Naka, presiding</b>	
12:55	1E08	Preparation of Oleyl-phosphate-modified TiO <sub>2</sub> /polymethylmethacrylate hybrid films <u>Masato Fujita</u> ,Naokazu Idota,Kimihiro Matsukawa,Yoshiyuki Sugahara ...	2760
13:20	1E09	Synthesis of tellurium-containing polymers in the main chain by the condensation reaction of tellurium tetrachloride and aromatic compounds <u>Daisuke Inoue</u> ,Hiroto Kudo.....	2762
13:45	1E10	Transparent Conductive Films Based on Element-Block Materials <u>Akira Watanabe</u> ,Gang Qin .....	2764
		<b>I. Tomita, presiding</b>	
14:10	1E11	Interlayer Surface Modification of Protonated Layered Perovskite	

		HLaNb2O7-xH2O by Phenylphosphinic Acid <u>Xiang Geng</u> , Naokazu Idota, Yoshiyuki Sugahara.....	2766
14:35	1E12	Self-Assembly of Gels through Complexation of Apo-proteins with Co-factors and Control of its Catalytic Activity <u>Yuichiro Kobayashi</u> , Yoshinori Takashima, Akihito Hashidzume, Hiroyasu Yamaguchi, Akira Harada .....	2768
15:00	1E13	Development of single component solid electrolytes based on imidazolium salt terminated ester-typed POSS-core dendrimers <u>Yasuyuki Irie</u> , Megumi Komada, Takashi Nishino, Kensuke Naka .....	2770
		<b>T. Haino, presiding</b>	
15:25	1E14	Synthesis of $\pi$ -Conjugated Compounds and Polymers Based on <i>o</i> -Carborane <u>Masato Tominaga</u> , Yasuhiro Morisaki, Yoshiki Chujo .....	2772
15:50	1E15	Syntheses and Properties of Boron Element-Blocks Containing Polymers <u>Yuko Uchimaru</u> , Hiroshi Yamashita, Li-biao Han .....	2774
16:15	1E16	Synthesis of Versatile Elements-block $\pi$ -Conjugated Polymers Having Dithienogermole Units by Reactions of Organotitanium Polymers <u>Yoshimasa Matsumura</u> , Masayuki Miyazaki, Joji Ohshita, Shinsuke Inagi, Ikuyoshi Tomita .....	2776
		<b>Y. Uchimaru, presiding</b>	
16:40	1E17	Precise synthesis of organic-multimetallic hybrid polymers <u>Takashi Sato</u> , Masayoshi Higuchi .....	2778
17:05	1E18	Supramolecular fullerene polymer networks formed by host-guest interaction of dumbbell-shaped[60]fullerene and calix[5]arene <u>Takehiro Hirao</u> , Toshiaki Ikeda, Takeharu Haino .....	2780
17:30	1E19	Design of one dimensional $\pi$ -conjugated polymer having functionalized poly(vinyl ether)s as a sheath moiety <u>Jin Motoyanagi</u> , Akihiro Kurata, Taketo Ishikawa, Masahiko Minoda...	2782
17:55	1E20	Synthesis of multibranched poly(phenylacetylene) by a combination of metathesis and living cationic polymerization <u>Kiriko Higashi</u> , Jin Motoyanagi, Masahiko Minoda .....	2784

## Thursday, September 12

### New Polymeric Materials Based on Element-Blocks -The Future Created by Hybrid Polymers

		<b>K. Tanaka, presiding</b>	
9:10	2E01	Design of Element-Block Polymers Using Bipolar Electrochemistry <u>Shinsuke Inagi</u> , Naoki Shida, Yuki Koizumi, Ikuyoshi Tomita .....	2786
9:35	2E02	In-situ Formation of Non-substituted, Element Block Conjugated Polymers via Vapor-Phase Polymerization <u>Takeo Suga</u> , Fumiaki Okazaki, Ryota Nakajima, Hiroyuki Nishide .....	2788
10:00	2E03	Synthesis of $\pi$ -Conjugated Polymers Containing Bismole Units in the Main Chain by Reaction of Organometallic Polymers Having Titanacyclopentadiene Units <u>Yoshimasa Matsumura</u> , Shinsuke Inagi, <u>Ikuyoshi Tomita</u> .....	2790
		<b>T. Fujigaya, presiding</b>	
10:25	2E04	Preparation and Characterization of polysilazane hybrid for flexible and corrosion resistant coating	

		<u>Yoshio Hasegawa</u> ,Akiko Koshizaka,Yui Kaneta.....	2792
10:50	2E05	Power conversion efficiencies and charge carrier mobilities in bulk heterojunction solar cells based on low bandgap polymers	
		Takanori Otsura,Takashi Kobayashi,Takashi Nagase, <u>Hiroyoshi Naito</u> ...	2794
11:15	2E06	Development of Light-Driven Artificial Enzymes Based on POSS	
		<u>Kazuo Tanaka</u> ,Jong-hwan Jeon,Yoshiki Chujo.....	2796
11:40	2E07	Formation of Amphiphilic Liquid Crystalline Polysiloxane Self-assemblies and Their Smart Functions Using Phase Transition	
		<u>Kazuhito Takada</u> ,Akifumi Kawamura,Tadashi Uragami,Takashi Miyata .....	2798
		<b>J. Ohshita, presiding</b>	
12:55	2E08IL	Preparation of Element-Blocks from Inorganic Nanostructures	
		<u>Yoshiyuki Sugahara</u> .....	2800
13:45	2E10	Unusual Dynamic Dewetting Behavior of Organic-Inorganic Hybrid Films with Non-Crystalline Perfluoroalkyl Chains	
		<u>Chihiro Urata</u> ,Benjamin Masheder,Daniel Miranda,Gary Dunderdale,Atsushi Hozumi .....	2803
		<b>K. Matsukawa, presiding</b>	
14:10	2E11	Extraction of semiconducting carbon nanotubes using polyfluorene and their analog structure containing hetero atom	
		<u>Tsuyohiko Fujigaya</u> ,Joji Oshita,Fumiyuki Toshimitsu,Naotoshi Nakashima .....	2805
14:35	2E12	Structures and thermal properties of Development of Alternate Siloxane Copolymers Bearing a Nano-Cage and Flexible Chain Units	
		<u>Masashi Kunitake</u> ,Yusuke Ohnagamitsu,Toshihiko Ohda,Tomoya Kusano,Takahide Higashi,Kiyoshi Sakai,Takashi Matsuo,Keiji Tanaka....	2807
15:00	2E13	Design and Electronic States of the Polymers Containing the Carborane Block in the Main Chain	
		<u>Hiroyuki Fueno</u> ,Kazuyoshi Tanaka .....	2809
15:25	2E14	Synthesis of ionic liquid containing silsesquioxane framework	
		<u>Takuhiro Ishii</u> ,Tomonobu Mizumo,Yoshiro Kaneko .....	2811
		<b>M. Kunitake, presiding</b>	
15:50	2E15	Hybridization of TiO <sub>2</sub> nanoparticle on a Graphene Nanosheet and Catalytic Ability	
		<u>Tomonari Kanasugi</u> ,Hiroshi Endo,Takeshi Kawai .....	2813
16:15	2E16	White-Color Emission from a Single Material: Polymer Liquid Crystals Containing Calamitic Gold Complex in Side Chains	
		<u>Sho Tamai</u> ,Osamu Tsutsumi.....	2815
16:40	2E17	Curcumin-Ru Complex for Dye-Sensitized Photoelectrochemical Water Splitting	
		<u>Raman Vedarajan</u> ,Yuichiro Morita,Shoto Ikeda,Noriyoshi Matsumi...	2817
17:05	2E18	Development of a phenylazomethine dendrimer with an inverted potential gradient	
		<u>Ken Albrecht</u> ,Kimihisa Yamamoto.....	2819

## Friday, September 13

### New Polymeric Materials Based on Element-Blocks -The Future Created by Hybrid Polymers

#### Y. Kaneko, presiding

9:10	3E01	Preparation of Metal in Oil and Metal in Water Emulsion by	
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		Utilizing Liquid-Metal	
		<u>Shinya Sudo</u> ,Chihiro Oka,Kenta Kokado,Kazuki Sada .....	2821
9:35	3E02	Hierarchical Construction and Functions of Porous Organic Salts by Connection of Supramolecular Blocks	
		<u>Norimitsu Tohnai</u> ,Atsushi Yamamoto,Ichiro Hisaki,Mikiji Miyata .....	2823
10:00	3E03	Synthesis, complex formations with boron compounds, and application to organic solar cells of dithienosilole-pyridine alternate polymers	
		<u>Daiki Tanaka</u> ,Joji Ohshita,Tomonobu Mizumo,Yousuke Ooyama.....	2825
		<b>R. Saito, presiding</b>	
10:25	3E04	Synthesis of novel polymers containing chiral iridium complex and their application to asymmetric catalysis of transfer hydrogenation of imines	
		<u>Yosuke Hashimoto</u> ,Naoki Haraguchi,Shinichi Itsuno .....	2827
10:50	3E05	Optical properties of photo-cured thin films by using radical polymerizable titania sol	
		<u>Kimihiro Matsukawa</u> ,Ryota Miyazaki,Koji Mitamura,Noboru Nishioka,Manabu Hirata,Seiji Watase .....	2829
11:15	3E06	Electroluminescence of Hybrid Thin Film Incorporating Metal Complex as an Element-Block	
		<u>Seiji Watase</u> ,Daiki Fujisaki,Mitsuru Watanabe,Koji Mitamura,Noboru Nishioka,Kimihiro Matsukawa.....	2831
11:40	3E07	Preparation of sulfo group-containing rod-like polysilsesquioxane with hexagonally stacked structure	
		<u>Yoshiro Kaneko</u> ,Hisaya Toyodome,Kazuhiro Shikinaka,Tomonobu Mizumo,Nobuo Iyi.....	2833
		<b>S. Watase, presiding</b>	
12:55	3E08	Thermal properties of organic-silica nanocomposites with microphase separation by using of perhydropolysilazane	
		<u>Hiroshi Nakaseko</u> ,Jooyeon Lee,Junko Morikawa,Reiko Saito.....	2835
13:20	3E09	Ternary nanocomposite microspheres synthesized by organic-inorganic simultaneous deposition dispersion polymerization	
		<u>Syuji Fujii</u> ,Hiroyuki Hamasaki,Yoshinobu Nakamura,Atsushi Ohtaka,Hiroya Abe,Shinya Yamanaka .....	2837
13:45	3E10	Surface properties and structure of poly(3-alkyl thiophene)	
		<u>Takashi Nishino</u> ,Keishiroh Nishi,Masaru Kotera,Kanta Fuji,Shunsuke Tamba,Atsunori Mori .....	2839
		<b>S. Fujii, presiding</b>	
14:10	3E11	Synthesis and Structural Control of Heterosegment-junctioned Hybrid Polymer Nanotubes	
		<u>Asuka Nishiura</u> ,Tsukasa Nakahodo,Hisashi Fujihara.....	2841
14:35	3E12	Imidazolium salts-terminated poly(amidoamine)-typed POSS-core dendrimers	
		Shogo Tomita,Sono Sasaki, <u>Shinichi Sakurai</u> ,Yasuyuki Irie,Kensuke Naka .....	2843
15:00	3E13	Structural Control of Bisphthalocyanine through the Addition of Lewis Acid/Base	
		<u>Hiroki Fukui</u> ,Masaki Shimizu,Mitsuhiko Morisue .....	2845
15:25	3E14	Synthesis of Porphyrin Arrays That Form Double-Strand through Coordination Bonds	
		<u>Yuki Hoshino</u> ,Kohei Shimizu,Yasuhisa Kuroda,Masaki Shimizu,Mitsuhiko Morisue .....	2847

**Room F**

**Wednesday, September 11**

**Sustainable Polymers Based on Precision Design: Application of Molecular Singularity**

14:00	1FSO	Introductory Remarks <u>Masami Kamigaito</u> ..... 2679	
		<b>T. Ishizone, presiding</b>	
14:10	1F11	One-Pot Synthesis of Radically Curable and Highly Branched Polymers by Addition-Fragmentation Chain Transfer <u>Izumi Uehara</u> , Eriko Sato, Akikazu Matsumoto ..... 2680	
14:35	1F12	Design and synthesis of functional polymer using trimethylene carbonate with oligo ethylene glycol at side chain <u>Hiroharu Ajiro</u> , Yoshikazu Takahashi, Tomoko Fujiwara, Mitsuru Akashi .... 2682	
15:00	1F13	Stereoregular Polymethacrylates Possessing Clickable End: Synthesis and Thiol-Ene Reaction <u>Yasuhiro Kohsaka</u> , Takashi Kurata, Tatsuki Kitayama ..... 2684	
		<b>H. Ajiro, presiding</b>	
15:25	1F14	Precise synthesis of triblock terpolymers composed of polystyrene derivatives by means of living anionic polymerization and specially designed linking reaction <u>Yuri Matsuo</u> , Ryuji Konno, Raita Goseki, Akira Hirao, Takashi Ishizone .... 2686	
15:50	1F15	Precise synthesis of super-H shaped exact graft copolymers by means of living anionic polymerization utilized in-chain-dual-functionalized AB diblock copolymer <u>Saeko Senda</u> , Shotaro Ito, Raita Goseki, Takashi Ishizone, Akira Hirao ..... 2688	
16:15	1F16	Synthesis of an H-shaped Carbon-dioxide-derived Polycarbonates through the Covalent or Hydrogen Bondings <u>Satoshi Honda</u> , Asato Yoshida, Hidetoshi Goto, Hiroshi Sugimoto ..... 2690	
		<b>N. Yoshie, presiding</b>	
16:40	1F17	Reversible Polymer Topology Conversion utilizing [1]Rotaxane Structure <u>Takahiro Ogawa</u> , Daisuke Aoki, Kazuko Nakazono, Satoshi Uchida, Toshikazu Takata ..... 2692	
17:05	1F18	Enhanced surface repellency of stereoregular poly[2-(perfluorohexyl)ethyl acrylate]s <u>Takehiro Kitaura</u> , Yuta Ishikawa, Shinichi Katayose, Kouji Kubota, Tatsuki Kitayama ..... 2694	
17:30	1F19IL	Development of Polymerization Catalysts for the Synthesis of Sustainable Polymers <u>Koji Nakano</u> ..... 2696	

**Thursday, September 12**

**Sustainable Polymers Based on Precision Design: Application of Molecular Singularity**

**H. Jinnai, presiding**

9:10	2F01	Precision Design of Molecular Singularity-Containing Polymers towards Control of Their Structures at Water Interfaces	
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		<u>Yukari Oda</u> ,Ayanobu Horinouchi,Cui Zhang,Shokyoku Kanaoka,Sadahito Aoshima,Keiji Tanaka .....	2699
9:35	2F02	Structure and dynamics of polymer brushes formed by self-organization	
		<u>Manabu Inutsuka</u> ,Norifumi Yamada,Kohzo Ito,Hideaki Yokoyama, Ling Hong,Yuya Amino,Takashi Kayasuga,Takashi Ishizone .....	2701
10:00	2F03	Preparation and properties of natural rubber graft copolymer having the silica nanomatrix structure	
		<u>Kenshi Noguchi</u> ,Seiichi Kawahara.....	2703
10:25	2F04	Viscoelastic Properties of Natural Rubber with Nanomatrix Structure	
		<u>Seiichi Kawahara</u> ,Kenichiro Kosugi,Yoshimasa Yamamoto .....	2705
		<b>K. Suganuma, presiding</b>	
10:50	2F05	Helical domain structure using triblock copolymer having molecular singular points (1) -electron tomography study- <u>Hiroshi Jinnai</u> ,Takeshi Higuchi,Hiroshi Morita,Atsushi Takahara .....	2707
11:15	2F06	Helical domain structure using triblock copolymer having molecular singular points(2) -simulation study- <u>Hiroshi Morita</u> ,Takeshi Higuchi,Atsushi Takahara,Hiroshi Jinnai .....	2709
11:40	2F07	Mechanical properties of block copolymer using nano-palpatation AFM <u>Makiko Ito</u> ,Kaname Matsue,So Fujinami,Dong Wang,Ken Nakajima ...	2711
		<b>H. Morita, presiding</b>	
12:55	2F08	Stereoregularity analysis of poly(lactic acid) using the model compounds by solution NMR <u>Koto Suganuma</u> ,Hiroshi Hara,Hironori Matsuda,Risa Yahata,Miyuki Oshimura,Tomohiro Hirano,Koichi Ute,H.N. Cheng,Tetsuo Asakura.....	2713
13:20	2F09	Morphology of Natural Rubber <u>Yoshimasa Yamamoto</u> ,Oraphin Chaikumpollert,Hiroyuki Ishii,Seiichi Kawahara .....	2715
13:45	2F10	Coarse-grained simulation analysis of polymer nano-composites with nano-matrix structures <u>Katsumi Hagita</u> .....	2717
		<b>T. Miyata, presiding</b>	
14:10	2F11	Hydrolysis of nucleotides by natural cellulose nanofibers <u>Yusuke Yataka</u> ,Toshiki Sawada,Takeshi Serizawa.....	2719
14:35	2F12	Functions of Bio-based Furan Polymers Cross-linked with Bis-maleimide <u>Yoshiki Niwa</u> ,Chao Zeng,Hidetake Seino,Jie Ren,Kenichi Hatanaka,Naoko Yoshie .....	2721
15:00	2F13	Self-healing of Cross-linked Polymers with Autonomously Exchangeable Dynamic Covalent Bonds <u>Keiichi Imato</u> ,Tomoyuki Ohishi,Atsushi Takahara,Hideyuki Otsuka....	2723
15:25	2F14	Mechanical studies on self-healing hydrogels formed by selective metal-phosphate complexes <u>Takeshi Sato</u> ,Mitsuhiro Ebara,Shinji Tanaka,Taka-aki Asoh,Akihiko Kikuchi,Takao Aoyagi .....	2725
		<b>T. Serizawa, presiding</b>	
15:50	2F15	Design of Sustainable Gel Materials That Undergo Reversible Network Formation by Molecular Complexes and Their Sol-Gel Phase Transition Behavior <u>Akifumi Kawamura</u> ,Miho Mukada,Tadashi Uragami,Takashi Miyata...	2727
16:15	2F16	Dispersion of Inorganic Nanoparticles Stabilized with Polymers	

		Containing Catechol Groups in Organic Solvents and Fabrication of Inorganic Honeycomb Films <u>Yuta Saito</u> , Masatsugu Shimomura, Hiroshi Yabu ..... 2729	
16:40	2F17	Polymer Nanosheet Assembly for Two-dimensional Ion Conductive Materials <u>Jun Matsui</u> , Takuma Sato, Yuta Hayasaka, Masaya Mitsuishi, Tokuji Miyashita..... 2731	
17:05	2F18	Precise Synthesis of High-Molecular-Weight and Polar Acrylic Polymers by Living Radical Polymerization Using Ditelluride Compounds and Application to Dismantlable Adhesion <u>Keisuke Yamanishi</u> , Tadashi Inui, Eriko Sato, Akikazu Matsumoto..... 2733	

### Friday, September 13

#### Sustainable Polymers Based on Precision Design: Application of Molecular Singularity

##### **K. Satoh, presiding**

9:10	3F01	Palladium-Catalyzed Direct Arylation Polymerization: A New Synthetic Method for $\pi$ -Conjugated Polymers <u>Masayuki Wakioka</u> , Fumiyuki Ozawa..... 2735	
9:35	3F02	Efficient synthesis of conjugated polymers using C-H bond direct arylation <u>Yuta Nohara</u> , Junpei Kuwabara, Takeshi Yasuda, Liyuan Han, Takaki Kanbara..... 2737	
10:00	3F03	Chain-growth polycondensation of 4-chloropyridine <u>Keiji Nose</u> , Tomokazu Iyoda, Takanobu Sanji ..... 2739	

##### **H. Otsuka, presiding**

10:25	3F04	Sustainable Metal-Catalyzed Living Radical Polymerization via Ferrocene-Assisted Iron Redox Catalysis <u>Kojiro Fujimura</u> , Makoto Ouchi, Mitsuo Sawamoto ..... 2741	
10:50	3F05	Synthesis of Various Block Copolymers via RAFT-Type Metal-Free Living Cationic Polymerization <u>Naoto Konegawa</u> , Shinji Sugihara, Yasushi Maeda..... 2743	
11:15	3F06	Sequence Controlled Cationic Copolymerization of Vinyl Ethers and Aldehydes for Precise Design of Various Types of Degradable Polymers with Acid-Labile Units at Predetermined Positions in Main Chain <u>Marie Kawamura</u> , Arihiro Kanazawa, Shokyoku Kanaoka, Sadahito Aoshima ..... 2745	
11:40	3F07	Synthesis of Functional Thermoplastic Elastomer using Living Cationic Polymerization of Plant-Derived $\beta$ -Methylstyrene <u>Shinya Suzuki</u> , Kotaro Satoh, Masami Kamigaito..... 2747	

### Room G

### Wednesday, September 11

#### Polymer Physics: Structure and Properties

##### **S. Nobukawa, presiding**

10:00	1G03	Third virial coefficient of ring polystyrene <u>Keita Ide</u> , Yo Nakamura, Keita Kinoshita, Yuya Doi, Atsushi	
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		Takano, Yushu Matsushita .....	2855
10:25	1G04	Analysis of deformation behavior under three-point bending of polyethylene	
		<u>Syouhei Takahasi</u> , Tosio Igarashi, Takashi Uneyama, Koh-hei Nitta .....	2857
10:50	1G05	Linear viscoelasticity under large deformation and viscoelastic stress in polyisoprene rubber	
		<u>Yoshihisa Miyamoto</u> , Takashi Konishi, Ken Taguchi, Ken Sekimoto .....	2859
		<b>T. Nakaoki, presiding</b>	
11:15	1G06	Statistical analysis for fracture characteristics of isotactic polypropylene films	
		<u>Chunyao Li</u> , Koh-hei Nitta .....	2861
11:40	1G07	Effect of the addition of olefinic random copolymers on tensile yielding of iPP materials	
		<u>Naoki Fukushima</u> , Takashi Uneyama, Koh-hei Nitta, Shinichi Kitade ..	2863
		<b>Y. Nakamura, presiding</b>	
12:55	1G08	Influences of mechanical properties and functionality by filler diameter on physical cross-linkage polypropylene-based nanocomposites	
		<u>Masahito Toyonaga</u> , Toshiaki Taniike, Minoru Terano .....	2865
13:20	1G09	Plastic deformation behavior of extruded polypropylene having perpendicular orientation	
		<u>Atsuro Yamazaki</u> , Takahiro Inoue, Shogo Nobukawa, Masayuki Yamaguchi .....	2867
13:45	1G10	Structures and properties of isotactic polypropylene films under various biaxial deformation modes	
		<u>Takahiro Matsuda</u> , Yusuke Hiejima, Koh-hei Nitta .....	2869
14:10	1G11	The additional effects of CO <sub>2</sub> -based polycarbonate on the deformation behavior in polypropylene	
		<u>Makiko Nakahara</u> , Koh-hei Nitta, Kiyoshi Nishioka, Tomoki Kawakita ...	2871
		<b>Y. Miyamoto, presiding</b>	
14:35	1G12	High-strength drawn Poly(vinyl alcohol) film prepared throughout Freeze/thaw method	
		<u>Taishi Fukumori</u> , Takahiko Nakaoki .....	2873
15:00	1G13	Molecular dynamics study on generation mechanism of stress-birefringence in glassy polystyrene	
		Toshiaki Ougizawa, Keiichi Kuboyama, <u>Eito Ariura</u> .....	2875
15:25	1G14	Changes of structure and properties by physical aging in polycarbonate	
		Kai Hayashi, Keiichi Kuboyama, <u>Toshiaki Ougizawa</u> , Takashi Inoue ....	2877
		<b>M. Yamaguchi, presiding</b>	
15:50	1G15	The annealing effects on the relaxation time in enthalpy relaxation	
		<u>Waki Sakatsuji</u> , Takashi Konishi, Yoshihisa Miyamoto .....	2879
16:40	1G17	Molecular Weight Dependence on Local Glass Transition Temperature around Chain Ends of Polystyrene	
		<u>Yohei Miwa</u> , Osamu Urakawa, Shogo Nobukawa, Shoichi Kutsumizu ..	2881
		<b>A. Toda, presiding</b>	
17:05	1G18	Intermolecular Interaction and Thermal Behavior of Polyglycolide Studied by Vibrational Spectroscopy, X-ray Diffraction and Quantum Mechanical Calculation	
		<u>Mai Miyada</u> , Harumi Sato, Shigeki Yamamoto, Kummetha Raghunatha Reddy ., Yukihiro Ozaki .....	2883
17:30	1G19	Crystalline Structure and Crystalline Transition of Poly(butylene	

		succinate) Studied by IR, Raman Spectroscopy and Quantum Chemical Calculations <u>Shota Noma, Harumi Sato, Shigeki Yamamoto, Kummetha Raghunatha Reddy, Yukihiro Ozaki</u> ..... 2885	
17:55	1G20	1D nanomaterials miniaturized from polymer-inclusion crystals composed of tetrapodal adamantanes with N-heterocyclic units <u>Masahide Tominaga, Akitaka Iekushi, Kazuaki Ohara, Kentaro Yamaguchi, Isao Azumaya</u> ..... 2887	

## Thursday, September 12

### Polymer Physics: Structure and Properties

#### O. Urakawa, presiding

9:10	2G01	Relationship between the reversible stress-generation and the structural change of the oriented regenerated-silk-fibroin and poly(vinyl alcohol) induced by wet/dry change, as studied by the time-resolved simultaneous measurements of stress, WAXD and SAXS <u>Taiyo Yoshioka, Kohji Tashiro</u> ..... 2889	
9:35	2G02	Study of Formation Process of Poly(vinyl alcohol)-iodine complex on the basis of time-dependent measurements of X-ray diffraction patterns of doubly-oriented samples <u>Saharin Siti Munirah, Tomohiko Takahama, Kohji Tashiro</u> ..... 2891	

#### T. Uneyama, presiding

10:25	2G04	Reproduction of Anisotropic SAXS Patterns of 3-Dimensionally-Oriented Polymer Samples Based on Monte Carlo Simulation to Analysis of the Lamellar Stacking Structure <u>Daisuke Tahara, Kohji Tashiro, Hai Ninh Tran</u> ..... 2893	
10:50	2G05	Crystal structure and morphology of copolyoxamide <u>Tomoyuki Nakagawa, Shuichi Maeda, Masashi Gondo, Koji Nozaki, Takashi Yamamoto</u> ..... 2895	
11:15	2G06	The long period structure of Main-chain liquid crystalline polyester <u>Chiharu Takahashi, Shusuke Yoshihara, Sungmin Kang, Junji Watanabe, Masatoshi Tokita</u> ..... 2897	
11:40	2G07	Influence of Smectic Liquid Crystallinity on Lamellar Microdomain Structure in a Main-Chain Liquid Crystal Block Copolymer Fiber <u>Maito Koga, Kazunori Sato, Sungmin Kang, Junji Watanabe, Masatoshi Tokita</u> ..... 2899	

#### Y. Tanzawa, presiding

12:55	2G08	Structural Study of Stereocomplex Formation Behavior of Poly(ethylene Imine) with Stereoregular Poly(methacrylic Acids) <u>To Hoai Nguyen, Kohji Tashiro</u> ..... 2901	
13:20	2G09	Structural Change in the II-I Phase Transition of isotactic Poly(butene-1) Crystal Viewed from the Time-dependent X-ray Diffraction Patterns of 3-Dimensionally-oriented Samples <u>Kaicheng Yen, Jian Hu, Makoto Hanesaka, Kohji Tashiro</u> ..... 2903	
13:45	2G10	Relation between Crystal Structure and Ultimate Young's Modulus of Arylate-type Polyesters having Long Methylene Segments as Studied by the Theoretical and Experimental Evaluations of the Crystalline Elastic Moduli <u>Masafumi Tasaki, Hiroko Yamamoto, Taiyo Yoshioka, Kohji Tashiro, Hye Jin Jeon, Kwang Bok Choi, Hak Seung Jeong, Hyun</u>	

14:10	2G11	Hoon Song, Moon Hor Ree ..... 2905 Structural Study of Phase Transition Mechanism of Precisely Regularly-Branched Polyethylenes ( $-\text{[(CH}_2\text{)}_{20}\text{-CHX]}_n-$ ) (X = Br, Cl) on the basis of X-ray Crystal Structure Analysis <u>Masafumi Tasaki</u> , Hiroko Yamamoto, Kohji Tashiro, Carolina Ruiz-orta, Rufina G. Alamo, Boz Emine, Kenneth B. Wagener ..... 2907	2905
<b>M. Tokita, presiding</b>			
14:35	2G12	Crystallization temperature and elongational strain rate dependences of structure and morphology of nano-oriented crystals of iPP <u>Kiyoka Okada</u> , Hiroyasu Masunaga, Masamichi Hikosaka ..... 2909	2909
15:00	2G13	Crystallization behavior of polyethylene with precisely placed branches by synchrotron X-ray scattering <u>Kazuuya Matsui</u> , Shuichiro Seno, Yoshinobu Nozue, Yuya Shinohara, Yoshiyuki Amemiya, E.b. Berda, G. Rojas, Kenneth B. Wagener ..... 2911	2911
15:25	2G14	A study of saturated primary nucleation behaviors on polymer melt crystallizations[III] <u>Susumu Umemoto</u> , Norimasa Okui ..... 2913	2913
15:50	2G15	Crystallization of poly(p-phenylene sulfide) through a transient state just above glass transition temperature [II] <u>Yasutoshi Tanzawa</u> ..... 2915	2915
<b>K. Tashiro, presiding</b>			
16:15	2G16	Effect of Chemical Structure on the Dynamics of Guest Low Mass Molecules in Syndiotactic Polystyrene co-crystals <u>Hideo Kobayashi</u> , Osamu Urakawa, Tadashi Inoue, Fumitoshi Kaneko .... 2917	2917
16:40	2G17	Molecular dynamics of initial formation process of conductive polymer nanofibers structure <u>Yuumi Takizawa</u> , Toshiaki Miura, Takeshi Shimomura ..... 2919	2919
17:05	2G18	Evaluation of the applicability of spin-spin relaxation time as an indicator for lifetime assessment of rubber seals <u>Kaori Numata</u> , Shinobu Kawaguchi, Sokei Sekine ..... 2921	2921

## Friday, September 13

### Polymer Physics: Structure and Properties

#### F. Kaneko, presiding

9:10	3G01	Crystalline Phase Transition and X-ray Structure Analysis of Tetrafluoroethylene-Vinyl Alcohol Alternating Copolymer <u>Kohji Tashiro</u> , Masahiro Ohkura, Hiromasa Yamamoto, Tatsuya Yamamoto, Atsushi Funaki, Shunichi Kodama, Yoshitomi Morizawa ... 2923	2923
9:35	3G02	Clarification of Relationship between Stress-induced Phase Transition and Higher-order Structural Change of PTMT-PTMO Multi-block Copolymers on the Basis of Simultaneous Measurements of Transmission-type FTIR Spectra and Synchrotron WAXD and SAXS Data <u>Kohji Tashiro</u> , Hiroko Yamamoto, Taiyo Yoshioka, Takashi Sakurai, Hiroyasu Masunaga ..... 2925	2925
10:00	3G03	Morphology and molecular motional characteristics in globular DNA-CTA film <u>Emmanuel Ossai</u> , Joshua Mba, Kazuya Furusawa, Akimasa Fukui, Naoki Sasaki ..... 2927	2927

**T. Shimomura, presiding**

10:25	3G04	Influence of guest shape and additives on guest exchange phenomenon of syndiotactic polystyrene co-crystals <u>Naoki Seto</u> , Fumitoshi Kaneko ..... 2929	2929
10:50	3G05	Inkjet-assisted Fabrication of Patterned Porous Crystals of Proteins <u>Tomoaki Hinoue</u> , Mitsuru Akashi..... 2931	2931
11:15	3G06	Analysis of Aggregation Structures of Polyimides Having Bending Structures in the Main Chain by UV/Visible Absorption and Fluorescence Spectroscopy at Very High Pressure <u>Hiroshi Fukudome</u> , Kazuhiro Takizawa, Shinji Ando..... 2933	2933
11:40	3G07	Synthesis and characterization of novel transparent polyimides containing pyridine rings side chains <u>Kazuma Seino</u> , Kousuke Tsuchiya, Kenji Ogino ..... 2935	2935

**K. Ogino, presiding**

12:55	3G08	High Thermal conductivity of Main-Chain Liquid Crystalline Polyester Matrix in Isotropic Composites <u>Shusuke Yoshihara</u> , Masatoshi Tokita, Masashi Sakaguchi, Kazuaki Matsumoto, Junji Watanabe ..... 2937	2937
13:20	3G09	Highly Conductive PEDOT/PSS Fabricated by Optimizing Hierarchical Structure <u>Hanae Hikawa</u> , Tatsuhiro Horii, Yuechen Li, Masato Katsunuma, Hiromi Takezawa, Hidenori Okuzaki ..... 2939	2939
13:45	3G10	Electrical properties of polythiophenes containing EDOT <u>Ryo Ogino</u> , Ichiro Imae, Kenji Komaguchi, Yousuke Ooyama, Yutaka Harima ..... 2941	2941

**H. Okuzaki, presiding**

14:10	3G11	Piezoelectric Polymer <u>Yoshiro Tajitsu</u> ..... 2943	2943
14:35	3G12	Piezochromism Exhibited by Pyrene Derivatives <u>Hiroyuki Takiguchi</u> , Syoichi Kutsumizu, Yohei Miwa..... 2945	2945
15:00	3G13	Stimuli responsivity of substituted polyacetylenes bearing a bulky triphenylamine moiety <u>Ranko Motoshige</u> , Takahiro Sasaki, Asahi Motoshige, Yoshiaki Yoshida, Yasuteru Mawatari, Masayoshi Tabata ..... 2947	2947

**Room H****Wednesday, September 11****Polymer Physics: Structure and Properties****Y. Sanada, presiding**

10:00	1H03	Interfacial tensions between various polymers measured by the Neumann Triangle method <u>Tateo Takashima</u> , Yukihiro Nishikawa, Masaaki Takahashi ..... 2949	2949
10:25	1H04	An interpretation on the list of experimentally obtains of x-parameter and interfacial tension $\gamma$ in various polymer blends <u>Yugo Matsumoto</u> , Tateo Takashima, Yukihiro Nishikawa, Masaaki Takahashi..... 2951	2951
10:50	1H05	Controlled Crystalline Forms of Calcium Carbonate in Lyotropic	



		Liquid Crystalline Hydrogel Templates of All Aromatic Polyamide <u>Takashi Nishio</u> ,Kensuke Naka.....	2953
11:15	1H06	Fluctuating junctions of associating polymer networks in a single-chain model <u>Tsutomu Indei</u> ,Jay Schieber,Rudi Steenbakkers .....	2955
11:40	1H07	Optical properties of injection-moulded polymer blends composed of Poly(methyl methacrylate) and Ethylene-vinyl acetate copolymer <u>Shuji Takahashi</u> ,Shogo Nobukawa,Masayuki Yamaguchi.....	2957
<b>Y. Nishikawa, presiding</b>			
12:55	1H08	Wavelength dispersion of birefringence for cellulose acetate propionate <u>Shogo Nobukawa</u> ,Masayuki Yamaguchi .....	2959
13:20	1H09	Orientation dynamics of low-mass additive and optical property in polymer matrix <u>Yoshiharu Fukui</u> ,Shogo Nobukawa,Masayuki Yamaguchi .....	2961
13:45	1H10	Structural Analysis of DNA Tetrapodnas by Small-Angle X-ray Scattering <u>Yusuke Sanada</u> ,Shunsuke Sakamoto,Tadashi Okobira,Makiya Nishikawa,Naoto Yagi,Kazuo Sakurai.....	2963
<b>A. Takano, presiding</b>			
14:10	1H11	Mechanism of rubber elasticity of PP/EPDM thermoplastic vulcanizate <u>Keiichi Kuboyama</u> ,Tomoya Kashimura,Toshiaki Ougizawa .....	2965
14:35	1H12	Structural development in reaction induced phase separation <u>Keiichiro Nomura</u> ,Sadayuki Kobayashi .....	2967
15:00	1H13	Phase separation from homogeneous nematic phases in polystyrene/low-molecular-weight liquid crystal mixtures <u>Yuuki Nakamura</u> ,Sungmin Kang,Masatoshi Tokita,Junji Watanabe ...	2969
<b>T. Sato, presiding</b>			
15:25	1H14	Novel cylindrical microphase-separated structures formed by ABC triblock terpolymers <u>Atsushi Takano</u> ,Yusuke Asai,Yoshio Sageshima,Yushu Matsushita ..	2971
15:50	1H15	Tri-continuous morphology and kinetics of phase separation induced by photopolymerization in ternary polymer blends <u>Toshiya Shukutani</u> ,Hideyuki Nakanishi,Tomohisa Norisuye,Qui Tran-cong Miyata.....	2973
16:15	1H16	Control of Orientation of Cylindrical Microdomains Via Directional Coalescence of Non-equilibrium Spherical Microdomains of SEBS Triblock Copolymers <u>Shogo Tomita</u> ,Noriyuki Igarashi,Nobutaka Shimizu,Sono Sasaki,Shinichi Sakurai.....	2975
<b>T. Indei, presiding</b>			
16:40	1H17	Tacticity dependence of phase separation dynamics of aqueous thermo-responsive polymer solutions <u>Takanori Tada</u> ,Yukiteru Katsumoto,Koichi Ute,Tomohiro Hirano,Karel Goossens,Hiroshi Uji-i,Johan Hofkens,Noboru Kitamura,Yasuyuki Tsuboi .....	2977
17:05	1H18	Flocculation Effect of Thermosensitive Block Copolymers in Phase-Separating Solutions <u>Takahiro Sato</u> ,Rintarou Takahashi,Masaaki Kondo,Francoise Winnik.....	2979
17:30	1H19	Crystallization behavior of binary blends consisting of crystalline-crystalline diblock copolymers and crystalline	

		homopolymers	
17:55	1H20	<u>Satoru Gondo</u> , Takuya Sakurai, Koya Kawai, Shuichi Nojima .....	2981
		The study of Fddd structure in polystyrene-block-polyisoprene	
		<u>Sho Sato</u> , Mikihiro Takenaka, Hirokazu Hasegawa.....	2983

## Thursday, September 12

### Polymer Physics: Structure and Properties

#### H. Takeshita, presiding

9:10	2H01	Structural and concentration dependence of thermal rheological function of side chain block co-polymer	
		<u>Tooru Okuma</u> , Ryoko Nakano, Hiroshi Sekiguchi, Shigeru Yao .....	2985
9:35	2H02	Influence of Chain Conformation of Block Copolymers as Thermoplastic Elastomer on Viscoelastic Properties	
		<u>Haruko Miyase</u> , Atsushi Takano, Yushu Matsushita, Yoshiaki Takahashi...	2987
10:00	2H03	Effects of Molecular Weight on the Deformation of Photo-Cross-linked Polymer Blends Studied by Mach-Zehnder Interferometry	
		<u>Tomoya Kawamoto</u> , Hideyuki Nakanishi, Tomohisa Norisuye, Koji Fukao, Qui Tran-cong Miyata .....	2989
10:25	2H04	Fabrication of Block Copolymer Photonic Films Swollen with Ionic Liquids and Their Optical Properties	
		<u>Yusuke Tomita</u> , Yoshio Sageshima, Atsushi Noro, Yushu Matsushita, Joseph Walsh, Edwin Thomas .....	2991

#### Q. Miyata, presiding

10:50	2H05	Syntheses of High Molecular Weight Block Copolymers via High Pressure RAFT Polymerization and Their Morphology Observation	
		<u>Ryusuke Hiramatsu</u> , Kota Furuichi, Yoshio Sageshima, Atsushi Noro, Yushu Matsushita .....	2993
11:15	2H06	Influence of topology on the miscibility of a polymer blend	
		<u>Yuki Kobayashi</u> , Sarah Siti, Atsushi Takano, Yushu Matsushita.....	2995
11:40	2H07	Microdomain Structures in Polystyrene-block-poly(methyl methacrylate) Diblock Copolymer / Homopolystyrene Blends	
		<u>Yichin Wang</u> , Hirokazu Hasegawa, Mikihiro Takenaka .....	2997

#### Y. Matsushita, presiding

12:55	2H08	The meso-scale order structure of immiscible polymer blends I Formation mechanism	
		<u>Junhyeok Jang</u> , Tsuyoshi Inoue, Hirohisa Yoshida, Masayuki Kawazoe ...	2999
13:20	2H09	Morphological and physical properties of poly(acrylonitrile-butadiene-styrene) / poly(butylene adipate-co-terephthalate) blends	
		<u>Junpei Hayami</u> , Katsuhisa Tokumitsu, Takeshi Kanzawa .....	3001
13:45	2H10	Fabrication and evaluation of polybenzoxazole film via polyalkoxyamide precursor	
		<u>Yusuke Saegusa</u> , Tsuyohiko Fujigaya, Naotoshi Nakashima .....	3003

#### S. Okamoto, presiding

14:10	2H11	Morphological analysis for asymmetric triblock copolymer	
		<u>Ayaka Miyoshi</u> , Hirokazu Hasegawa, Mikihiro Takenaka .....	3005
14:35	2H12	The Morphological analysis of triblock copolymer included polydimethylsiloxane	
		<u>Ayano Inoue</u> , Mikihiro Takenaka, Hirokazu Hasegawa .....	3007

15:00	2H13	Mean-square Radius of Gyration and Scattering Functions of Semiflexible Ring Polymers of the Trefoil Knot <u>Hiroki Abe, Daichi Ida, Takenao Yoshizaki</u> ..... 3009	3009
15:25	2H14	Topological Constraint in Ring Polymers under Theta Conditions Studied by Monte-Carlo Simulation <u>Jiro Suzuki, Atsushi Takano, Yushu Matsushita</u> ..... 3011	3011
<b>H. Nakanishi, presiding</b>			
15:50	2H15	Precise synthesis and topology analysis of knotted ring polymer <u>Hiroki Sawaki, Atsushi Takano, Yushu Matsushita, Jiro Kumaki</u> ..... 3013	3013
16:15	2H16	Influence of the Flexible Spacer on the Conformational Properties of the Rod Brushes <u>Yuta Saito, Moriya Kikuchi, Atsushi Narumi, Seigou Kawaguchi</u> ..... 3015	3015
16:40	2H17	Dilute solution properties of tadpole-shaped polymers with high purity <u>Yuya Doi, Atsushi Takano, Yushu Matsushita</u> ..... 3017	3017
17:05	2H18	Conformation and Association Behavior of Single-Stranded DNA in Aqueous Solution <u>Hiroki Yamamura, Keiko Tamada, Ken Terao, Takahiro Sato</u> ..... 3019	3019

## Friday, September 13

### Polymer Physics: Structure and Properties

#### S. Nobukawa, presiding

9:10	3H01	Hydration Behavior of Chemically Modified Poly(vinyl alcohol)s <u>Toshiyuki Shikata, Misumi Okuzono</u> ..... 3021	3021
9:35	3H02	preparation of two- and three-armed PHIC macromonomers and solution properties of the rod brushes <u>Norifumi Kaneko, Yuta Saito, Moriya Kikuchi, Atsushi Narumi, Seigou Kawaguchi</u> ..... 3023	3023
10:00	3H03	Molecular Weight Dependence of Expansion Factor <u>Kazumi Suematsu</u> ..... 3025	3025

#### M. Takahiro, presiding

10:25	3H04	Single polymer chain viscoelasticity investigated by atomic force microscopy <u>Xiaobin Liang, Ken Nakajima</u> ..... 3027	3027
10:50	3H05	Development of Cholesteric Liquid Crystal Film with Pitch Distribution <u>Yoshihiro Harada, Sungmin Kang, Koichi Sakajiri, Masatoshi Tokita, Junji Watanabe</u> ..... 3029	3029
11:15	3H06	Synthesis of Chiral Dopants with Reversible Dimerization Unit to Control Photothermal Phase Transition of Chiral Liquid Crystals <u>Hiroya Nishikawa, Hiroki Higuchi, Yasushi Okumura, Hirotsugu Kikuchi</u> .... 3031	3031
11:40	3H07	Systematic measurements of electro-optical properties of polymer-stabilized blue phase by gradient stabilization cells <u>Noriaki Yukitake, Yasushi Okumura, Hiroki Higuchi, Hirotsugu Kikuchi</u> ... 3033	3033

#### H. Kikuchi, presiding

12:55	3H08	Design and polarity measurement of ionic liquid mixture constructing nano-segregated liquid-crystalline phases <u>Satomi Taguchi, Takahiro Ichikawa, Takashi Kato, Hiroyuki Ohno</u> ..... 3035	3035
13:20	3H09	Thermotropic liquid crystals of syndiotactic polymethylenes having mesogenic side chain <u>Noboru Koshimizu, Koichi Sakajiri, Sungmin Kang, Kazuhiro</u>	

13:45	3H10	Shikinaka, Kiyotaka Shigehara, Junji Watanabe, Masatoshi Tokita ..... 3037 Effect of cross-linker on photopolymerization-induced alignment of anisotropic molecules	
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		<u>Go Okada</u> , Yohei Miwa, Shoichi Kutsumizu ..... 3041	
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		<u>Kousei Fukumoto</u> , Hiroki Higuchi, Yasushi Okumura, Junichi Matsumoto, Hirotsugu Kikuchi ..... 3043	
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		<u>Akihiro Abe</u> , Hidemine Furuya ..... 3047	

<b>Room I</b>
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**Wednesday, September 11**

**Polymer Physics: Structure and Properties**

**K. Ohno, presiding**

12:55	1I08	Reduction Mechanism of Metal Ions utilizing Hydrophilic Block Copolymer with Pyridine Moiety	
		<u>Daisuke Matsukuma</u> , Yukie Maejima, Seiya Hashimoto, Hidenori Otsuka ... 3049	
13:20	1I09	Structural change of interphase between PETFE and inorganic filler by electric Field	
		<u>Shigeru Tasaka</u> , Yasuhiro Matsuda, Suguru Kurita ..... 3051	
13:45	1I10	Synthesis of poly(vinyl ether-alt-maleimide)s obtained by RAFT copolymerization and their physical and stimuli responsive properties	
		<u>Ayaha Oguri</u> , Jin Motoyanagi, Masahiko Minoda ..... 3053	

**M. Minoda, presiding**

14:10	1I11	Synthesis of concentrated polymer brushes with extraordinarily large thicknesses by living radical polymerization and characterization of their macro-tribology properties	
		<u>Shu-yao Hsu</u> , Shuhei Akimoto, Kohji Ohno, Yoshinobu Tsujii, Tomoko Hirayama ..... 3055	
14:35	1I12	Morphology Variation of Lipophilic Polyelectrolyte Brush Extending in Non-polar Organic Solvents	
		<u>Taihei Yamada</u> , Yuji Higaki, Atsushi Takahara, Kenta Kokado, Kazuki Sada ..... 3057	
15:00	1I13	Surface Property and Molecular Aggregation State of Poly(perfluoroalkyl acrylate) Thin Films Immobilized on Surface Patterned Polymer Film	
		<u>Takamichi Shinohara</u> , Yuji Higaki, Atsushi Takahara ..... 3059	

**T. Nishino, presiding**

15:25	1114	Thin Films of Liquid Crystalline Side Chain Polymers for Surface Functional Group Patterning <u>Suguru Ushiro</u> ,Rina Maeda,Teruaki Hayakawa.....	3061
15:50	1115	Development and Function of Macroscopically Aligned Mono- and Multi-layered Molecular Membranes <u>Yoshiaki Shoji</u> ,Noriya Seiki,Fumitaka Ishiwari,Takashi Kajitani,Takao Someya,Takanori Fukushima.....	3063
16:15	1116	Generation Mechanism of Out-of-Plane Anisotropy during Solution Casting of Polymer Film <u>Keiichi Kuboyama</u> ,Ayana Fujimaki,Toshiaki Ougizawa.....	3065
<b>K. Tokumitsu, presiding</b>			
16:40	1117	Influence of a process of multi solvent replacement method about the structural cellulose membrane <u>Shota Ishido</u> ,Hiroshi Sekiguchi,Ryoko Nakano,Shigeru Yao,Keisuke Suzuki,Kentaro Kumada.....	3067
17:05	1118	Water absorption into Nafion(R) ultra thin films elucidated by spectroscopic ellipsometry coupled with controlled humidity <u>Shigeru Yoshimoto</u> ,Kenji Ito,Hiroyuki Hosomi,Yoshihiro Takai.....	3069
17:30	1119	Hydrophilic anti-fouling surface prepared by amphiphilic polymer coating with a fluorine-coating surfactant <u>Shunsuke Yamamoto</u> ,Ayane Shimomura,Kaya Tokuda,Takashi Nishino,Tatsuo Maruyama.....	3071
17:55	1120	Glass Transition Temperature around Ionic Multiplets in Sodium-Neutralized Ethylene Ionomers <u>Yohei Miwa</u> ,Tomoyo Kondo,Hajime Furukawa,Shoichi Kutsumizu ....	3073

## Thursday, September 12

### Polymer Physics: Structure and Properties

#### H. Matsuoka, presiding

9:10	2I01	Lubrication of immobile film prepared from cationic polyelectrolyte and anionic surfactant (3) - Effect of surfactant and polyelectrolyte - Lejla Kaouache,Masaki Goto, <u>Yoshiaki Hirano</u> ,Kenji Hisada.....	3075
9:35	2I02	Structural Formation Mechanism and Control of Microphase Separated Film Dominated by Liquid Crystal <u>Motonori Komura</u> ,Tomokazu Iyoda.....	3077
10:00	2I03	Rheological properties of thixotropic supramolecular gels based on L-Lysine derivatives <u>Yuta Hayakawa</u> ,Masahiro Suzuki,Kenji Hanabusa.....	3079

#### K. Hisada, presiding

10:25	2I04	Kinetic Analysis of the translational motion of $\alpha$ -Cyclodextrin on Axis Molecules Composed of Substituted Pyridinium and Decamethylene Moieties <u>Akihiro Kuse</u> ,Akihito Hashidzume,Seiji Adachi,Yoshinori Takashima,Hiroyasu Yamaguchi,Akira Harada.....	3081
10:50	2I05	Study on Formation Behavior of Amylose-polyTHF Inclusion Complex in Vine-Twining Polymerization <u>Kazuya Yamamoto</u> ,Makoto Harihara,Asami Yoshioka,Jun-ichi Kadokawa.....	3083
11:15	2I06	The change of self-assembling behavior of ionic amphiphilic diblock copolymer by salt addition	

		<u>Yuko Kido</u> ,Hideki Matsuoka.....	3085
11:40	2I07	Formation of pH Responsive Supramolecular Hydrogel through Self-assembly of Tris-urea Molecule	
		<u>Kazushige Yanai</u> ,Masamichi Yamanaka .....	3087
<b>M. Moriyama, presiding</b>			
12:55	2I08	Technology of maintenance of enzyme activity at high temperature -The functional innovation by using a template of layered organization of heat-resistant and low-defect organic / inorganic two-dimensional nano-hybrid -	
		<u>Shuntaro Arai</u> ,Siti Amirah Che Azmi,Munehiro Kubota,Kei-ichi Kurosaka,Atsuhiko Fujimori.....	3089
13:20	2I09	Hybrid Polymer Nanoassemblies Based on Dopamine-Assisted Adhesion	
		<u>Shun Uchiyama</u> ,Shunsuke Yamamoto,Masaya Mitsuishi,Tokuji Miyashita.....	3091
13:45	2I10	Terminal modification of dendrimers via hydrogen bonding: Introduction of photochromic molecules and their photochemical behaviors	
		<u>Yusuke Shimada</u> ,Ryo Yasui,Ken'ichi Aoki .....	3093
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		<u>Tatsuki Nagasaka</u> ,Kunihiro Ichimura,Ken'ichi Aoki .....	3095
<b>K. Aoki, presiding</b>			
14:35	2I12	Photoinduced Surface Relief Gratings on Photochromic Naphthacenequinone Dendrimer Films	
		<u>Tomomi Ueshima</u> ,Naohiro Kawano,Yuya Uchida,Shusaku Nagano,Takahiro Seki,Masaya Moriyama.....	3097
15:00	2I13	Emerging optically active fluorene-alt-thiophene copolymer by pumping circularly polarized light	
		<u>Yuri Donguri</u> ,Michiya Fujiki.....	3099
15:25	2I14	Direct Measurement of Structural Dynamics of a Long-Chain Branch in LDPE	
		<u>Ken-ichi Shinohara</u> ,Masahiro Yanagisawa,Yosuke Miyazaki,Yuu Makida .....	3101
<b>K. Shinohara, presiding</b>			
15:50	2I15	Surface synthesis of graphene nanoribbons by novel chemical vapor deposition	
		<u>Yoshitaka Hirano</u> ,Maki Yano,Takahiro Kojima,Hiroshi Sakaguchi.....	3103
16:15	2I16	Polymerization of the 10, 12-pentacosadiyn-1-ol molecular layers on graphite depending on the polymorphic forms investigated by STM	
		<u>Daisuke Takajo</u> ,Akira Inaba,Koichi Sudoh .....	3105
16:40	2I17	Preparation of carbon nitride thin films on graphite through various methods	
		<u>Kengo Nishimae</u> ,Shinobu Uemura,Masashi Kunitake.....	3107
17:05	2I18	Construction and observation of MOF nano-sheets on surfaces	
		<u>Soichiro Kashiyama</u> ,Kouhei Sakata,Shinobu Uemura,Masashi Kunitake.....	3109

**Friday, September 13**

## Polymer Physics: Structure and Properties

### H. Endo, presiding

9:10	3I01	The quest of the functionality of new nano-composite made by a heat-resistant flexible transparent material by crystalline copolymer and heat-resistant organo-aluminosilicate <u>Yoichi Sotome</u> , Takuma Kanehira, Shuntaro Arai, Munehiro Kubota, Kei-ichi Kurosaka, Atsuhiko Fujimori.....	3111
9:35	3I02	Light scattering property of nanodiamond composite film <u>Takuma Kaneko</u> , Kouiti Sakajiri, Koichi Yamaguchi, Tadamasa Fujimura, Masatoshi Tokita, Junji Watanabe.....	3113
10:00	3I03	Silica composite materials loading metal or metaloxide subnanoparticles size-controlled by phenylazomethine dendrimer <u>Isao Hirano</u> , Takane Imaoka, Kimihisa Yamamoto .....	3115

### K. Yamamoto, presiding

10:25	3I04	Preparation of core-shell particles having the surface-active property adaptive to environments and formation of hierarchical structures <u>Takeshi Saito</u> , Yuuka Fukui, Keiji Fujimoto .....	3117
10:50	3I05	Accumulation and Functionalization of Graphene Wrapped Colloidal Particle <u>Kazumasa Kono</u> , Hiroshi Endo, Takeshi Kawai .....	3119
11:15	3I06	An elucidation of a internal fine structure of the disk-like "polymer nanosphere" in the interfacial particle film and an attempt of their functional innovation <u>Takahiro Kikkawa</u> , Yohei Kaneko, Atsuhiko Fujimori .....	3121
11:40	3I07	Optical Function of "Hybrid" Polymer Nanosphere Multilayered Organization Consisting of a Mixed Interfacial Single Particle Layer <u>Yohei Kaneko</u> , Takahiro Kikkawa, Yuji Shibasaki, Atsuhiko Fujimori ...	3123

### N. Higashi, presiding

12:55	3I08	Electrodynamic phenomenon of hydrogel particles accompanying by changes of the polymer conformation <u>Takuma Kureha</u> , Daichi Aoki, Takaaki Sato, Daisuke Suzuki .....	3125
13:20	3I09	New proposals to the organic / inorganic hybrid material - Technology of formation of interfacial single particle layer of the inorganic nanoparticles and their layered organization - <u>Nanami Honda</u> , Kazuaki Hashimoto, Hirobumi Shibata, Atsuhiko Fujimori.....	3127
13:45	3I10	Surface Modification Materials for Gold-nanoparticle Dispersion in Water And Suppression of Nonspecific Adsorption of Proteins <u>Mutsuo Tanaka</u> , Takahiro Sawaguchi, Yoshiki Hirata, Chisato Sasakawa, Keiko Tawa.....	3129
14:10	3I11	Encapsulation of Functional Molecules Using <i>in situ</i> Polymerization <u>Hidenobu Shimizu</u> , Tomoki Mori, Risei Wada, Masaru Okabe .....	3131

### A. Fujimori, presiding

14:35	3I12	Controlled Synthesis of Polymer Particles Templated by Porous Metal Complexes <u>Tetsuya Kaseda</u> , Takashi Uemura, Susumu Kitagawa.....	3133
15:00	3I13	Development of photosensitive nano-carrier for drug delivery system <u>Shrivastava Saurabh</u> , Hideki Matsuoka .....	3135
15:25	3I14	Water-toluene nanoemulsion system stabilized by $\beta$ -sheet peptide network <u>Soichi Kamiwatari</u> , Tomoyuki Koga, Nobuyuki Higashi .....	3137

**Room J**

**Wednesday, September 11**

**Computational Science for Acceleration of Materials Research**

9:50	1J50	Introductory Remarks <u>Hiroki Kubo</u> , Hidemine Furuya .....	3399
<b>T. Taniguchi, presiding</b>			
10:00	1J03	Time dependent scattering function simulation from diblock copolymers <u>Takashi Honda</u> .....	3400
10:25	1J04	Estimation of Linear Viscoelasticity of Polymer Melts by using Relaxation Mode Analysis <u>Nobuyuki Iwaoka</u> , Katsumi Hagita, Hiroshi Takano .....	3402
10:50	1J05	Multi-Chain Slip-Spring Model Simulations for Entangled Polymers <u>Takashi Uneyama</u> , Yuichi Masubuchi .....	3404
<b>H. Morita, presiding</b>			
11:15	1J06	Bubble Nucleation: a Molecular-Dynamics Simulation Study of Polymer Foaming <u>Satoru Kuwajima</u> .....	3406
11:40	1J07	Formulation of Analytical Gelation Theory for Polycondensation with Intra-molecular Ring Formation <u>Toshio Nakao</u> , Kengo Nishi, Atsushi Izumi, Mitsuhiro Shibayama .....	3408
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13:45	1J10	A density-functional theory for polymer simulation in aqueous solutions <u>Tomonari Sumi</u> , Hideo Sekino .....	3413
14:10	1J11	A Free-energy Calculation Study on Permeation of Small Molecules in Polymer <u>Tomonori Kawakami</u> , Masahiro Kitabata, Isamu Shigemoto, Nobuyuki Matubayasi .....	3415
14:35	1J12	Multi-scale simulation of polymer melt flows --- application to polymer melt spinning processes --- <u>Takashi Taniguchi</u> , Kazuhiro Takase .....	3417
<b>T. Uneyama, presiding</b>			
15:00	1J13	Prediction of relaxation modulus of rubber materials via multi-scale molecular simulations <u>Shinichi Ueno</u> , Toshio Tada, Hiroyuki Kishimoto, Yuichi Masubuchi ...	3419
15:25	1J14	Coarse grained molecular dynamics simulations of crosslinked polymers <u>Hiroshi Shima</u> , Takahiro Ohkuma .....	3421
15:50	1J15	Modelling and Simulation of Self Oscillating Gel <u>Hiroshi Morita</u> , Yusuke Hara .....	3423
<b>H. Furuya, presiding</b>			
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17:05	1J18	Crystalline polymer membrane with extremely high selectivity for CO <sub>2</sub> predicted by molecular simulation <u>Yoshinori Tamai</u> .....	3427
17:30	1J19	Quantum Chemical Calculations on IR and NMR Spectra of Polymer Blends Including Amide and Carboxylic Groups <u>Noritaka Kimura</u> , Kohei Suguri.....	3429
17:55	1J20	Elucidation of the selectivity mechanism of the 5, 6, and 7-membered cyclic ammonium salt end groups by DFT calculations <u>Akihiro Kimura</u> , Takuya Yamamoto, Yasuyuki Tezuka, Susumu Kawauchi.....	3431

## Thursday, September 12

### Polymer Physics: Structure and Properties

#### T. Yamauchi, presiding

9:10	2J01	Synthesis of fluorescent gelators and direct observation for gelation process by fluorescence microscope <u>Takuya Ueda</u> , Masahiro Suzuki, Kenji Hanabusa.....	3139
9:35	2J02	Development of fluorescent gelators to detect TNT vapor <u>Shingo Takata</u> , Masahiro Suzuki, Yasushi Nomura, Kenji Hanabusa ...	3141
10:00	2J03	Stimuli-responsive luminescence of network polymers cross-linked by AIE molecules <u>Ryosuke Taniguchi</u> , Taihei Yamada, Kenta Kokado, Kazuki Sada.....	3143

#### K. Hanabusa, presiding

10:25	2J04	Synthesis and properties of novel composites made of conducting polymers and organogel with low molecular weight organogelators and their thixotropy-like behavior <u>Hodaka Yamagishi</u> , Rie Kuwahara, Kumi Hashimoto, Shingo Tamesue, Takeshi Yamauchi, Norio Tsubokawa.....	3145
10:50	2J05	Development of novel supramolecular ionogels formed by benzenetricarboxylic acid based self-assembled nanofibers <u>Yumi Ishioka</u> , Nami Minakuchi, Minoru Mizuhata, Tatsuo Maruyama.....	3147
11:15	2J06	Synthesis and property of simply structured diacetylene organogelators: Correlation between the chemical structures and gelation and/or photochemical behaviors <u>Kosuke Horitsugu</u> , Seiichiro Ito, Takuya Hara, Nobuyuki Tamaoki, Ken'ichi Aoki .....	3149
11:40	2J07	Syntheses of Rotaxane Network Polymers by Radical Polymerization of Poly(crown ether) Complexes and Vinyl Monomers <u>Kazuhiro Yamabuki</u> , Kenjiro Onimura, Tsutomu Oishi .....	3151

#### Y. Sakai, presiding

12:55	2J08	Polyampholyte physical hydrogels: (1) High toughness and viscoelasticity <u>Taolin Sun</u> , Abu Bin Ihsan, Takayuki Kurokawa, Tasuku Nakajima, Jian Ping Gong.....	3153
13:20	2J09	Polyampholyte physical hydrogels: (2) Effect of ionic bonds on toughness <u>Taolin Sun</u> , Abu Bin Ihsan, Takayuki Kurokawa, Tasuku Nakajima, Jian Ping Gong.....	3155

13:45	2J10	Synthesis of tough elastomer with double network structure <u>Yuki Maida</u> , Tasuku Nakajima, Takayuki Kurokawa, Kazuki Sada, Kenta Kokado, Jian Ping Gong .....	3157
14:10	2J11	Characterization of Tough Double Network Hydrogels with a Tetra-PEG First Network <u>Tasuku Nakajima</u> , Takahiro Matsuda, Yuki Fukuda, Takayuki Kurokawa, Takamasa Sakai, Ung-il Chung, Jian Ping Gong.....	3159
<b>T. Koga, presiding</b>			
14:35	2J12	Viscoelastic relaxation and equilibrium elasticity of slide-ring elastomers <u>Takaaki Yasuda</u> , Kazuaki Kato, Kohzo Ito .....	3161
15:00	2J13	Photoelasticity studies on structural analysis of slide-ring gel during elongation <u>Hiroshi Sawada</u> , Yasuhiro Sakai, Kohzo Ito.....	3163
15:25	2J14	Permeability characteristic and network structure of slide-ring gel <u>Yasuhiro Sakai</u> , Kazu Hirosawa, Kohzo Ito.....	3165
15:50	2J15	Viscoelastic Property of Slide Ring Gel Consisting of Block Copolymer Main Chain <u>Shoko Takahashi</u> , Kazuaki Kato, Yasuhiro Sakai, Hideaki Yokoyama, Kohzo Ito .....	3167
<b>J. Gong, presiding</b>			
16:15	2J16	Molecular Simulation and Theoretical Analysis of Slide-Ring Gel under Biaxial Deformation <u>Kotaro Tanahashi</u> , Tsuyoshi Koga .....	3169
16:40	2J17	Evaluations of Physical Properties of High-Strength PVA Gels Prepared by a Undirectional Freezing Method <u>Kensuke Ota</u> , Taegu Noh, Atsushi Suzuki .....	3171
17:05	2J18	Junction Point Size and Physical Properties of High-Molecular Weight PVA Hydrogel <u>Risei Wada</u> , Hidenobu Shimizu, Masaru Okabe .....	3173

## Friday, September 13

### Polymer Physics: Structure and Properties

#### Y. Maki, presiding

9:35	3J02	The solvent transport behavior from agarose gel under uni-axial compression <u>Isamu Kaneda</u> , Takumi Shigegaki, Saori Iwasaki .....	3175
10:00	3J03	Elution control of eluted polymers from PVA cast gel with the external solvent changes <u>Saori Sasaki</u> , Atsushi Suzuki .....	3177
10:25	3J04	Effects of strongly selective slute and salt on the swelling and volume transition of gels <u>Yuki Uematsu</u> , Takeaki Araki .....	3179

#### I. Kaneda, presiding

10:50	3J05	Consideration of hydrated water for gelation mechanism of gellan gum -The amount of hydrated water estimated by small angle X-ray scattering and density measurements <u>Yuji Jinbo</u> , Chiaki Yagi .....	3181
11:15	3J06	Gelation and morphology of a DNA droplet on the agarose gel surface <u>Yasuyuki Maki</u> , Kazuya Ishizaka, Toshiaki Dobashi.....	3183

11:40	3J07	Molecular Aggregation Structure Development of Poly(urethaneureas) with Lysine-based Hard Segment on the Elongation Process <u>Ken Suzuki</u> , Ryohei Ishige, Yuji Higaki, Noboru Ohta, Atsushi Takahara ..	3185
<b>K. Akiyoshi, presiding</b>			
12:55	3J08	Study of hydrogen on swelling behavior in rubber materials for high-pressure hydrogen sealing <u>Hirotsada Fujiwara</u> , Shin Nishimura .....	3187
13:20	3J09	Influence of high-pressure hydrogen exposure on the inhomogeneous structure of peroxide crosslinked acrylonitrile butadiene rubber <u>Keiko Ohyama</u> , Hirotsada Fujiwara, Shin Nishimura .....	3189
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14:10	3J11	Synthesis of amphiphilic silsesquioxane-based nanoparticles having polymerizable groups and functionalization by light and thermal curing <u>Ryo Koizumi</u> , Kazuhiro Nakabayashi, Hideharu Mori, Hiroshi Takeuchi .....	3193
<b>H. Mori, presiding</b>			
14:35	3J12	Aqueous Dispersions consisting of polymer-clay nanocomposite gel microspheres and their thermoresponsive properties <u>Tetsuo Takada</u> , Kazutoshi Haraguchi .....	3195
15:00	3J13	Structure and mechanical properties of nanogel-crosslinked materials <u>Sada-atsu Mukai</u> , Yoshihide Hashimoto, Yoshiro Tahara, Shin-ichi Sawada, Kazunari Akiyoshi .....	3197
15:25	3J14	Structure of physical cross-linking nanogels observed by means of contrast variation small-angle neutron scattering <u>Yurina Sekine</u> , Hitoshi Endo, Hiroki Iwase, Horoshi Fukazawa, Sada-atsu Mukai, Kazunari Akiyoshi .....	3199

<b>Room K</b>
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**Wednesday, September 11**

**Nanomechanics of Polymeric Materials**

9:50	1KSO	Introductory Remarks <u>Ken Nakajima</u> , Keiji Tanaka .....	3499
<b>K. Nakajima, presiding</b>			
10:00	1K03	Interface Manipulated Nanostructures by Block Copolymers from the Viewpoint of Synthetic Approach <u>Teruaki Hayakawa</u> , Rina Maeda, Fuminobu Kato, Raita Goseki .....	3500
10:25	1K04	Aggregation Structure and Mechanical Properties of Polyurethane Elastomers Based on Cycloaliphatic Isocyanate with a Symmetric Structure <u>Shuhei Nozaki</u> , Suguru Motokucho, Kohji Yoshinaga, Ken Kojio, Daisuke Hasegawa, Daisuke Nishiguchi, Goro Kuwamura, Satoshi Yamasaki .....	3502

**T. Hayakawa, presiding**

10:50	1K05	Relationship between microphase separation structure and physical property of mixture of thermoplastic elastomers <u>Atsushi Takayanagi</u> , Yuki Nakama, Ryoji Oda, Sadaharu Hashimoto, Takashi Honda.....	3504
11:15	1K06	Relationship between structure and modulus of thermoplastic polyurethane as a function of annealing temperature <u>Noboru Osaka</u> , Yu Yanagihara, Satoshi Murayama, Hiromu Saito .....	3506
11:40	1K07	fabrication of mesoporous nanorods by selective swelling of blockcopolymer <u>Akifumi Matsubara</u> , Hideaki Yokoyama, Kohzo Ito .....	3508

**K. Nakajima, presiding**

12:55	1K08IL	Computational Science for Soft Matters <u>Ryoichi Yamamoto</u> .....	3510
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**N. Osaka, presiding**

13:45	1K10	Nanomechanical DNA Origami Devices Constructed of Rigid Components <u>Akinori Kuzuya</u> , Ryosuke Watanabe, Masafumi Kaino, Yuichi Ohya ....	3513
14:10	1K11	Construction of Oligothiophene Nanocolumns and Their Applications in Organic Photovoltaics <u>Shiki Yagai</u> , Mika Suzuki, Xu Lin, Yuki Tani, Ken-ichi Nakayama.....	3515
14:35	1K12	Surface-Selective Functionalization of Polyimide Films via Noncovalent Bond Formation <u>Mineo Hashizume</u> , Michihisa Hirashima, Yohei Okamoto, Kento Watanabe, Kazutoshi Iijima .....	3517
15:00	1K13	Polymer Brush Growth on Urushi Thin Film <u>Hirohmi Watanabe</u> , Aya Fujimoto, Jin Nishida, Myo Minn, Motoyasu Kobayashi, Rika Yamamoto, Atsushi Takahara .....	3519

**K. Tanaka, presiding**

15:25	1K14	Molecular Simulation Study of the Melting Process in <i>n</i> -Alkane Ultrathin Films <u>Susumu Fujiwara</u> , Masato Hashimoto .....	3521
15:50	1K15	Studies on tribological properties of polymer brushes by colloidal-probe technique with AFM <u>Kenichi Takahashi</u> , Shu-yao Hsu, Keita Sakakibara, Kohji Ohno, Yoshinobu Tsujii .....	3523
16:15	1K16	Influence of chain entanglement on glass transition temperature in Polymer Yoshinori Kinugasa, Keiichi Kuboyama, <u>Toshiaki Ougizawa</u> .....	3525

**D. Kawaguchi, presiding**

16:40	1K17	Controlling the Conductivity of Carbon Nanotube Composites while Numerating the Spatial Distribution of Fillers <u>Yukihiro Nishikawa</u> , Shota Ichikari, Shuhei Yamamoto, Haruhisa Ashida, Masaoki Takahashi .....	3527
17:05	1K18	Fabrication and application of wrinkle structure using by mechanical 3D-stretching <u>Hiroshi Endo</u> , Takeshi Kawai .....	3529
17:30	1K19	Photocontrol of surface wrinkle patterns by changes of elastic modulus of liquid crystal azobenzene polymer <u>Takahiro Takeshima</u> , Wan-yu Liao, Mitsuo Hara, Shusaku Nagano, Takahiro Seki.....	3531

**Thursday, September 12**

**Nanomechanics of Polymeric Materials**

**K. Kuboyama, presiding**

- 9:10 2K01 Correlation of Mechanical Properties and Changes in Nanostructures During Uniaxial Stretching of A Sphere-Forming Triblock Copolymer Film  
Yasuha Ishii, Tadashi Matsushita, Naoki Sakamoto, Terumasa Yamazaki, Kimio Imaizumi, Shigeo Kuwamoto, Lai Li, Yoshimasa Urushihara, Sono Sasaki, Shinichi Sakurai ..... 3533
- 9:35 2K02 Diffusion of Block Copolymers in Supercritical Carbon Dioxide  
Masahiko Tezuka, Kohzo Ito, Hideaki Yokoyama, Keiji Tanaka, Kenji Sugiyama..... 3535
- 10:00 2K03 Kinetic aspects for dynamic photoreorientation behavior in liquid crystalline azobenzene block copolymer thin film  
Masami Sano, Mitsuo Hara, Shusaku Nagano, Yuya Shinohara, Yoshiyuki Amemiya, Takahiro Seki ..... 3537
- 10:25 2K04 Monomeric friction of polymers under stretched and oriented state  
Yuichi Masubuchi, Hiroshi Watanabe ..... 3539

**H. Yabu, presiding**

- 10:50 2K05 Dynamic shear responses of polymer-polymer interfaces  
Yasuya Nakayama, Toshihisa Kajiwara ..... 3541
- 11:15 2K06 Analysis of Mechanical Instability for Polymer Interfaces on the Basis of Cell Attachment Tests  
Shinichiro Shimomura, Hisao Matsuno, Keiji Tanaka ..... 3543
- 11:40 2K07 Structural analysis of polymerized thin films by plasma irradiation of amphiphilic molecules  
Ryohei Kawamura, Daisuke Ishii, Hiroshi Suzuki, Yasuharu Takaku, Takahiko Hariyama, Masatsugu Shimomura..... 3545

**H. Yokoyama, presiding**

- 12:55 2K08 Dynamical simulations on polymer meso-structures using field theoretic approaches  
Toshihiro Kawakatsu ..... 3547
- 13:20 2K09 Effects of Chain-end Tethering on Crystallization of Polymer Chains Confined in Nanodomains with Various Shapes and Dimensions  
Shintaro Nakagawa, Takumi Tanaka, Shuichi Nojima, Takashi Ishizone, Kazuo Yamaguchi, Seiichi Nakahama ..... 3549
- 13:45 2K10 Molecular simulation of large deformation in lamellar structures of crystalline polymers  
Takashi Yamamoto ..... 3551
- 14:10 2K11 Simulations of Amorphous Polymer Chains between Crystalline Lamellae with Incompressible Constraint  
Takashi Uneyama, Takafumi Miyata, Koh-hei Nitta..... 3553

**S. Fujinami, presiding**

- 14:35 2K12 Relationship between structures and physical properties of polythiophene nanofibers  
Takeshi Shimomura..... 3555
- 15:00 2K13 Pressure-Induced Structural Change of Conjugated Polymer and Charge Carrier Transport Properties  
Yuki Noguchi, Sho Yamanaka, Akinori Saeki, Shu Seki ..... 3557
- 15:25 2K14 Development of Nanometer-scale Ordered Structure of Polymer

		Blends Containing a Conjugated Conducting Polymer <u>Midori Yamamoto</u> , Kazuhiro Ogita, Sono Sasaki, Takaaki Hikima, Masaki Takada, Naoko Yoshie .....	3559
15:50	2K15	Simultaneous measurement of the mechanical and proton-conductive properties of the polymer electrolyte using a nano indentation technique <u>Seiichi Kuroda</u> , Akihiro Ohira .....	3561
		<b>N. Yoshie, presiding</b>	
16:15	2K16	Surface force measurement between polyelectrolyte brushes by optical tweezers <u>Daiki Murakami</u> , Ai Takenaka, Yuji Higaki, Motoyasu Kobayashi, Hiroshi Jinnai, Atsushi Takahara .....	3563
16:40	2K17	Photo-crosslinking of Poly(butadiene) Honeycomb Films and Evaluation of Mechanical Properties <u>Hiroshi Yabu</u> , Takahito Kawano, So Fujinami, Ken Nakajima, Masatsugu Shimomura .....	3565
17:05	2K18	Anomalous Small-angle X-ray Scattering Study on Internal Structure of Polymer Nano-particles <u>Isamu Akiba</u> , Masaki Kinoshita, Yusuke Sanada, Kazuo Sakurai.....	3567

## Friday, September 13

### Nanomechanics of Polymeric Materials

#### Y. Nishikawa, presiding

9:10	3K01	Analysis of viscoelastic and adhesive energy dissipation on the nanoscale by atomic force microscopy <u>So Fujinami</u> , Makiko Ito, Ken Nakajima .....	3569
9:35	3K02	coarse-grained molecular dynamics simulation of deformation of polymer chain near substrate under shear Hiroshi Tsukahara, <u>Hiroshi Morita</u> , Hiroyuki Aoki, Shinzaburo Ito.....	3571
10:00	3K03	Development of measurement method of physical properties in the micro-/nano- scale with the electromagnetically spinning technique <u>Taichi Hirano</u> , Keiji Sakai .....	3573
10:25	3K04	Measurement of liquid properties with ReD surface tensiometer <u>Shujiro Mitani</u> , Keiji Sakai .....	3575
10:50	3K05	MEMS fabrication by injection molding and printed process <u>Kazuma Kurihara</u> .....	3577

### Room L

## Wednesday, September 11

### Polymer Industry and Technology: Processes and Products

#### K. Yamashita, presiding

12:55	1L08	Low Temperature Performance of Hydrogen Resistant Ethylene Propylene Rubber O-ring Shin Nishimura, <u>Hirotsada Fujiwara</u> .....	5148
13:20	1L09	Solubilization of insoluble materials into aqueous and organic solvents using novel polymerizable surfactant	

Yuichi Funasaki, Takafumi Honjo, Kazuki Houe, Hideto  
Minami, Musashi Takenaka, Chiaki Ogino, Tatsuo Maruyama..... 5150

**S. Yao, presiding**

- 13:45 1L10 Development of Poly(Vinyl Ether) Optical Plastics Based on  
2-Adamantyl Vinyl Ether  
Takeshi Namikoshi, Tamotsu Hashimoto, Yusuke Makino, Tsuguto  
Imaeda, Michio Urushisaki, Toshikazu Sakaguchi ..... 5152
- 14:10 1L11 Aromatic polyamide block copolymers toward proton exchange  
membrane  
Keitaro Ohyasu, Takayuki Ikehara, Toshiyuki Kataoka ..... 5154

**Applications of Quantum Beam Analysis to Hierarchical Structure and Dynamics of  
Polymeric Materials**

- 14:50 1LSO Introductory Remarks  
Atsushi Takahara ..... 3433

**A. Noro, presiding**

- 15:00 1L13 Analysis of the structure of quasi-amyloid fibers having antigenic  
sequence  
Takuma Minami, Tomonori Waku, Yusuke Sanada, Naoki  
Tanaka, Kazuo Sakurai..... 3434
- 15:25 1L14 Control of Molecular Aggregation Structure and Mechanical  
Properties of Green Polymer Films Based on Its Water Content  
Hisao Matsuno, Toshiyuki Ohta, Junichiro Koike, Tadahiko Asada,  
Misao Horigome, Hiroyasu Masunaga, Hiroki Ogawa, Keiji Tanaka ..... 3436
- 15:50 1L15 Analysis of Thermal Expansion Behaviors of Aromatic Polyimides  
Based on VT-WAXD Measurements [III]  
Shinji Ando, Yukiko Kozaki, Mizuka Tanimoto, Kunio Kimura ..... 3438
- 16:15 1L16 Development of microbeam SAXS/WAXS measurement apparatus  
for evaluation of polymer structure  
Hiroyasu Masunaga, Sono Sasaki, Takashi Sakurai, Takaaki  
Hikima, Masaki Takata ..... 3440

**H. Matsuno, presiding**

- 16:40 1L17 Structural Analysis of AB<sub>3</sub> Block Copolymer with SAXS and  
FFF-MALS  
Shunsuke Sakamoto, Yusuke Sanada, Isamu Akiba, Toshihiko  
Takaki, Kazuo Sakurai..... 3442
- 17:05 1L18 Synchrotron 2d-SAXS Studies on Surface Orientation of the  
Body-Centered-Cubic Lattice for Spherical Microdomains Formed  
in a Block Copolymer Thin Film  
Konomi Honda, Tsukasa Miyazaki, Hiroyasu Masunaga, Sono  
Sasaki, Shinichi Sakurai..... 3444
- 17:30 1L19 Morphologies of block copolymer induced by chemical environment  
Yoshio Sageshima, Atsushi Noro, Yushu Matsushita ..... 3446
- 17:55 1L20 Structural analysis of mesoscale helical structure formed in the  
PS-b-PB-b-PMMA triblock copolymer with synchrotron thin-film  
SAXS and transmission electron microtomography  
Ryohei Ishige, Takeshi Higuchi, Hiroki Ogawa, Hideaki  
Yokoyama, Hiroshi Jinnai, Atsushi Takahara ..... 3448

**Thursday, September 12**

## Applications of Quantum Beam Analysis to Hierarchical Structure and Dynamics of Polymeric Materials

<b>K. Sakurai, presiding</b>		
9:10	2L01	Analysis of healing behavior of each segment in elastomeric materials after mechanical deformation based on small-angle X-ray scattering and wide-angle X-ray diffraction techniques <u>Takuya Komatsu</u> , Suguru Motokucho, Ken Kojio, Kohji Yoshinaga ..... 3450
9:35	2L02	Hierarchic structure analysis for liquid crystalline block copolymers with synchrotron radiation x-ray scattering and diffraction measurement <u>Ryohei Ishige</u> , Masatoshi Tokita, Junji Watanabe, Hiroki Ogawa, Noboru Ohta, Atsushi Takahara ..... 3452
10:00	2L03	Structures and gelation process of crystalline organogels and surfactant organogels <u>Hiroyuki Takeno</u> , Yoshiro Mochizuki, Mochizuki Tomomitsu, Michina Yanagida ..... 3454
<b>K. Kojio, presiding</b>		
10:25	2L04	Study of liquid-liquid transitions in polymers <u>Eiji Izumi</u> , Mikihiro Takenaka, Hirokazu Hasegawa ..... 3456
10:50	2L05	Effects of an irreversibly adsorbed layer on Recrystallization Behavior and the Morphologies of Polyethylene Thin Films <u>Mitsunori Asada</u> , Maya Endoh K., Tadanori Koga, Atsushi Takahara ... 3458
<b>A. Takahara, presiding</b>		
11:15	2L06IL	Torahiko TERADA and Ukichiro NAKAYA - In Memory of International Year of Crystallography 2014 - <u>Kenzo Kanda</u> ..... 3460
<b>Y. Shinohara, presiding</b>		
12:55	2L08	In-situ GISAXS measurements for the formation process of polymer block bulk and thin films <u>Hiroki Ogawa</u> , Mikihiro Takenaka, Tsukasa Miyazaki, Keisuke Shinokita, Akihiko Fujiwara, Mssaki Takata ..... 3463
13:20	2L09	Preferential Solvent Evaporation under Coating Film Formation by Block Copolymer Solution <u>Keisuke Shimokita</u> , Tsukasa Miyazaki, Hiroki Ogawa, Katsuhiko Yamamoto ..... 3465
13:45	2L10	Evaluation of reorientation structure at near surface of molecularly oriented liquid crystalline polymer film by NEXAFS <u>Yunosuke Inada</u> , Yuichi Haruyama, Kohei Goto, Mizuho Kondo, Shinji Matsui, Nobuhiro Kawatsuki ..... 3467
14:10	2L11	Dynamical study of silsesquioxane functionalized polystyrene thin film using grazing incidence X-ray photon correlation spectroscopy <u>Taiki Hoshino</u> , Daiki Murakami, Shigesaburo Ogawa, Hiroshi Arita, Tomoyasu Hirai, Yoshihito Tanaka, Masaki Takata, Hiroshi Jinnai, Atsushi Takahara ..... 3469
<b>K. Tanaka, presiding</b>		
14:35	2L12	Observation of translational and rotational dynamics of nano crystals using quasi-monochromatic coherent X-rays <u>Yuya Shinohara</u> , Akira Watanabe, Hiroyuki Kishimoto, Yoshiyuki Amemiya ..... 3471
15:00	2L13	Development of Crystal Structure Analysis of Polymers using



		Wide-angle Neutron Diffraction Systems of JRR-3 BIX-3 and J-PARC iBIX to Collect Basic Information Necessary for Accurate Estimation of Ultimate Physical Properties of Crystalline States <u>Kohji Tashiro</u> , Hiroko Yamamoto, Makoto Hanesaka, Katsuhiko Kusaka, Takaaki Hosoya, Ichiro Tanaka, Takashi Ohhara, Nobuo Niimura .....	3473
15:25	2L14	Study on guest exchange process of syndiotactic polystyrene co-crystals <u>Fumitoshi Kaneko</u> , Naoki Seto, Aurel Radulescu, Koichi Ute .....	3475
		<b>R. Inoue, presiding</b>	
15:50	2L15	Water Sorption Kinetics of Nafion Thin Films Studied by Neutron and Visible Light Reflectivity Measurements Yudai Ogata, <u>Daisuke Kawaguchi</u> , Norifumi Yamada, Keiji Tanaka .....	3477
16:15	2L16	Structure of Nafion Thin Film Analysed by Neutron Reflectivity Measurements <u>Masashi Harada</u> , Kenji Kudo, Naoki Hasegawa, Jun Sugiyama, Naofumi Yamada .....	3479
16:40	2L17	Kinetics measurement of polymer thin film using neutron reflectometer SOFIA <u>Norifumi Yamada</u> , Koji Mitamura, Motoyasu Kobayashi, Daisuke Kawaguchi, Atsushi Takahara .....	3481
17:05	2L18	Relation between organic/organic interface structures and OLED performances <u>Satoru Ohisa</u> , Go Matsuba, Norifumi Yamada, Yong-jin Pu, Hisahiro Sasabe, Junji Kido .....	3483

## Friday, September 13

### Applications of Quantum Beam Analysis to Hierarchical Structure and Dynamics of Polymeric Materials

		<b>M. Harada, presiding</b>	
9:10	3L01	Glass transition temperature in polymer thin film studied by neutron reflectivity <u>Rintaro Inoue</u> , Toshiji Kanaya, Koji Nishida, Masahiro Hino .....	3485
9:35	3L02	Dynamic studies on glass-forming polymers and thin films by quasielastic neutron scattering <u>Toshiji Kanaya</u> , Rintaro Inoue .....	3487
10:00	3L03	Molecular-Weight dependence on De-Wetting Suppression Effect and Component Depth Distribution for Polystyrene Blend Thin Films <u>Naoya Torikai</u> , Kazuhiro Azuma, Norifumi Yamada, Masami Kawaguchi .....	3489
10:25	3L04	Fabrication of polymer patterns with atmospheric scanning electron microscopy <u>Takeshi Higuchi</u> , Daiki Murakami, Shigesaburo Ogawa, Hidetoshi Nishiyama, Mitsuo Suga, Hirohmi Watanabe, Hiroshi Jinnai, Atsushi Takahara .....	3491
		<b>H. Jinnai, presiding</b>	
10:50	3L05	Conformation of single polymer chain in spin-coated thin film <u>Hiroyuki Aoki</u> , Taiki Kuroda, Shinzaburo Ito .....	3493
11:15	3L06	Multi-scale Imaging Using Coherent X-ray Diffraction <u>Yukio Takahashi</u> .....	3495

11:40 3L07 Coherent imaging using X-ray free-electron lasers  
Yoshinori Nishino, Takashi Kimura, Yasumasa Joti, Yoshitaka Bessho.... 3497

**Room M**

**Wednesday, September 11**

**Hierarchical Structure of Crystalline Polymers and New Insights in Crystallization  
Processes of Polymers**

9:50 1MSO Introductory Remarks  
Mikihito Takenaka, Toshiji Kanaya ..... 4121  
**T. Konishi, presiding**

10:00 1M03 Melt-crystallization and Melting of polymer crystals  
Akihiko Toda, Ken Taguchi, Taiki Ando, Yuki Maeda, Koji  
Nozaki, Masanori Maruyama, Katsuharu Tagashira, Misuzu Konishi... 4122

10:25 1M04 Crystallization mechanism of nano-oriented crystals under  
elongational flow  
Masamichi Hikosaka, Kiyoka Okada, Hiroyasu Masunaga ..... 4124  
**A. Toda, presiding**

10:50 1M05 Electron-density Distribution Imaging of Poly(3-hydroxybutyrate)  
Crystal on the basis of X-ray Fiber Diagram and Maximum Entropy  
Method  
Sono Sasaki, Yasuha Ishii, Tadahisa Iwata, Kuniyoshi  
Sugimoto, Shinichi Sakurai, Masaki Takata..... 4126

11:15 1M06 Fabrication and Structural Characterization of Highly Oriented  
Crystalline Hofmann-Type Metal-Organic Framework Thin Films  
Kazuya Otsubo, Shun Sakaida, Tomoyuki Haraguchi, Osami  
Sakata, Akihiko Fujiwara, Hiroshi Kitagawa ..... 4128

11:40 1M07 Heating process of oriented mesophase of syndiotactic polypropylene  
Takashi Konishi, Satoshi Ozaki, Waki Sakatsuji, Koji  
Fukao, Yoshihisa Miyamoto ..... 4130  
**M. Takenaka, presiding**

12:55 1M08IL Mechanism of Shish-kebab Structure Formation  
Takeji Hashimoto, Toshiji Kanaya, Yoshinobu Nozue ..... 4132  
**T. Yamamoto, presiding**

13:45 1M10 Study on hierarchical structure of polyethylene under uniaxial  
stretch by using USAXS, SAXS and WAXS  
Mikihito Takenaka, Shotaro Nishitsuji, Sumiaki Fujii ..... 4135

14:10 1M11 3-Dimensional Transmission Electron Microscopy of Shish-Kebab  
Structure  
Hiroki Murase, Hiroshi Jinnai, Takeji Hashimoto..... 4137

14:35 1M12 The Inner Structural Observation of Precursor in Shear-induced  
Polymer Crystallization by Micro-beam X-ray Scattering  
Tomohiko Matsuura, Rintaro Inoue, Koji Nishida, Toshiji  
Kanaya, Noboru Ohta ..... 4139  
**G. Matsuba, presiding**

15:00 1M13 Structural Analysis of Pressure-induced Variations in Crystalline  
Polyimides based on WAXD Measurements at Very High Pressure  
Kazuhiro Takizawa, Hiroshi Fukudome, Yukiko Kozaki, Shinji Ando.... 4141

15:25	1M14	Crystallization Behaviors of P3AT:PCBM Blends on Si Substrates in Spin-coating Film-forming Processes Yuki Tsuji,Ryosuke Hata,Jiro Hoshihba,Shinichi Sakurai,Takaaki Hikima,Hiroyasu Masunaga,Masaki Takata,Kohji Tashiro, <u>Sono Sasaki</u> .....	4143
15:50	1M15	Influences of the solution concentration and centrifugal force on thin-film crystallization behaviors of poly(3-hydroxybutyrate) during spin-coatin <u>Ryosuke Hata</u> ,Yuki Tsuji,Jiro Hoshihba,Yasuha Ishii,Shinichi Sakurai,Hiroyasu Masunaga,Takaaki Hikima,Masaki Takata,Sono Sasaki .....	4145
<b>S. Sasaki, presiding</b>			
16:15	1M16	Atomic Force Microscopy of Crystallization Behavior of Single Isolated Chains Takahiro Anzai,Mariko Kawauchi,Takehiro Kawauchi, <u>Jiro Kumaki</u> ...	4147
16:40	1M17	Crystal growth from the ultrathin film of poly(4-methyl-1-pentene) <u>Ken Taguchi</u> ,Akihiko Toda,Yoshihisa Miyamoto .....	4149
17:05	1M18	Structural Analysis of Lamellar Interface in Thin Isotactic Polypropylene Films <u>Kentaro Yamamoto</u> ,Daisuke Kawaguchi,Keiji Tanaka.....	4151
<b>J. Kumaki, presiding</b>			
17:30	1M19	Molecular dynamics of polymer crystallization revisited <u>Takashi Yamamoto</u> .....	4153
17:55	1M20	Observation of crystalline structural transition of syndiotactic polystyrene by molecular simulation <u>Yoshinori Tamai</u> .....	4155

## Thursday, September 12

### Hierarchical Structure of Crystalline Polymers and New Insights in Crystallization Processes of Polymers

<b>S. Nojima, presiding</b>			
9:10	2M01	Structure formation of crystalline polymers during shear flow <u>Go Matsuba</u> ,Yunfeng Zhao,Hiroshi Ito .....	4157
9:35	2M02	Isothermal Crystallization Phenomena from the Molten State of Arylate-type Polyesters having Long Methylene Segments on the Basis of Time-Dependent Measurement of WAXD, SAXS and FTIR Kohji Tashiro,Hiroko Yamamoto,Taiyo Yoshioka,Kaicheng Yen, <u>Masafumi Tasaki</u> ,Daisuke Tahara,Hyun Hoon Song,Moon Hor Ree,Kyeong Sik Jin .....	4159
10:00	2M03	Effect of disentanglement via transesterification and chain stiffness on the formation of shish-kebab of aliphatic polyesters having different spacer lengths between ester groups Tetsuro Tai, <u>Shinichi Yamazaki</u> ,Kunio Kimura .....	4161
<b>H. Uehara, presiding</b>			
10:25	2M04	Lamellar Crystal Orientation and Crystallization Phenomena of Biodegradable Poly(Lactide) Stereocomplex Ultrathin Films Investigated by the Combination of GIXD and IR-RAS Measurements <u>Raghunatha Reddy Kummetha</u> ,Yukihiro Ozaki,Isao Takahashi.....	4163
10:50	2M05	Divergent Nano-crystalline Morphologies Promoted by	

		Self-assembly of Polyethyleneimine <u>Ren-hua Jin</u> .....	4165
11:15	2M06	Crystallization of Polymer Chains Confined in Microdomain Structures: Effects of Homopolymer Fraction <u>Shuichi Nojima</u> , Takumi Tanaka, Shintaro Nakagawa, Takashi Ishizone, Yasuhiko Kakiuchi, Kazuo Yamaguchi, Seiichi Nakahama ....	4167
11:40	2M07	Crystal Orientations and Kinetics Studies of Nylon-12 Crystallization in Nanocylinders <u>Yan Cao</u> , Hui Wu, Aya Fujimoto, Hirohmi Watanabe, Hiroshi Jinnai, Atsushi Takahara .....	4169
		<b>T. Kikutani, presiding</b>	
12:55	2M08	2d-SAXS Studies on Higher-Order Crystalline Structures of Poly(oxyethylene) in Poly(d,l-lactide) / Poly(oxyethylene) Blends and Their Melting Behavior Upon Heating Tien Nguyen-dung, Noriyuki Igarashi, Nobutaka Shimizu, Sono Sasaki, <u>Shinichi Sakurai</u> .....	4171
13:20	2M09	Fiber Structure Development and the Tensile Strength of Poly(ethylene terephthalate) <u>Yutaka Ohkoshi</u> , Kosuke Sugawara, Shohei Ishii, Toshifumi Ikaga, Kazuyuki Okada, Masato Masuda, Yuhei Maeda, Hiroyasu Masunaga, Toshiji Kanaya .....	4173
13:45	2M10	Structural Analysis of Injection Molded Poly(phenylene sulfide) by means of Synchrotron Radiation X-ray Scattering <u>Takuro Matsunaga</u> , Masashi Harada, Yoshihide Katagiri, Kenzo Fukumori .....	4175
		<b>S. Sakurai, presiding</b>	
14:10	2M11	In-Process Analyses for Oriented Crystallization during Melt-Drawing of Ultra-High Molecular Weight Polymers <u>Hiroki Uehara</u> , Takeshi Yamanobe .....	4177
14:35	2M12	Effect of pre-annealing on crystalline orientation behavior in uni- and bi-axial stretching of polyester films Takaaki Abe, Wataru Takarada, <u>Takeshi Kikutani</u> .....	4179
15:00	2M13	Crystal structure of stereoregular cycloolefin polymer <u>Yuki Nakama</u> , Shigetaka Hayano, Susumu Umemoto .....	4181
15:25	2M14	Role of entanglement species in the formation of shish-kebab -Effect of molecular weight of both polymers in cyclic and linear polymer blend- <u>Keiko Kobayashi</u> , Yuya Saito, Shinichi Yamazaki, Kunio Kimura .....	4183

<b>Room N</b>
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**Wednesday, September 11**

**Noninvasive Characterization of Polymer Material Systems**

9:50	1NSO	Introductory Remarks <u>Naoki Asakawa</u> .....	4070
		<b>H. Yoshimizu, presiding</b>	
10:00	1N03	Application of polymer materials to bio-inspired signal/information processing devices	

		<u>Naoki Asakawa</u> .....	4071
10:25	1N04	Thermal Molecular Motion and Exciton Dynamics in Poly(3-hexylthiophene) Thin Film <u>Yudai Ogata</u> ,Daisuke Kawaguchi,Keiji Tanaka .....	4073
10:50	1N05	Solid-State NMR Analysis of Polythiophene/Fullerene Blends in Organic Solar Cells <u>Tatsuya Fukushima</u> ,Subaru Fujimura,Hironori Kaji .....	4075
		<b>N. Asakawa, presiding</b>	
11:15	1N06	3D Image Analysis of inter particle contacts in polymer composites <u>Yoshinori Yagi</u> ,Yukihiro Nishikawa,Masaoki Takahashi .....	4077
11:40	1N07	Highly Sensitive Dissolved Oxygen Sensor based on Porous Fluorinated Polymer Film <u>Yu Gao</u> ,Shunsuke Yamamoto,Masaya Mitsuishi,Tokuji Miyashita.....	4079
		<b>M. Yamato, presiding</b>	
12:55	1N08	3D observation of lattice structures in liquid crystalline blue phases by confocal laser scanning microscope <u>Yasushi Okumura</u> ,Ryoichi Saito,Takahiro Ashimine,Hiroki Higuchi,Hirotsugu Kikuchi .....	4081
13:20	1N09	Joule-Heat Control of Conductive Shape-Memory Gels <u>Koki Yamamoto</u> ,Jin Gong,Md. Hasnat Kabir,Masato Makino,Hidemitsu Furukawa.....	4083
13:45	1N10	Dynamical Properties of shape memory gel <u>Md. Hasnat Kabir</u> ,Yosuke Watanabe,Masato Makino,Jin Gong,Hidemitsu Furukawa .....	4085
		<b>A. Asano, presiding</b>	
14:10	1N11	Structural Analysis of PB-10 Polyester in the Liquid Crystal and Crystal Phases by Solid-State NMR <u>Kazuhiko Yamada</u> ,Shusuke Yoshihara,Chiharu Takahashi,Sungmin Kang,Masatoshi Tokita,Kenzo Deguchi,Tadashi Shimizu,Junji Watanabe....	4087
14:35	1N12	NMR observations of the magnetic orientation process of liquid-crystal polymers <u>Hiroaki Yoshimizu</u> .....	4089
15:00	1N13	Characterization of Fukuro-Funori and Ma-Funori through NMR spectroscopy <u>Thu Ha Nguyen</u> ,Noriko Hayakawa,Riichiro Chujo,Seiichi Kawahara....	4091
		<b>K. Yamada, presiding</b>	
15:25	1N14	Analysis of vulcanization of polyisoprene by latex-state <sup>13</sup> C-NMR spectroscopy <u>Noriaki Iso</u> ,Seiichi Kawahara .....	4093
15:50	1N15	Solid State <sup>13</sup> C NMR of a Rolled Natural Rubber <u>Atsushi Asano</u> ,Masashi Kitamura,Yoshiaki Hata,Hiroshi Yasuoka ....	4095
16:15	1N16	Structural analyses of wet-heated silk fibroin materials <u>Tomoko Hashimoto</u> ,Yuki Taniguchi,Tsunenori Kameda,Yasushi Tamada,Hiromichi Kurosu .....	4097
16:40	1N17	Determination of the precise structures of Bombyx mori silk fibroin before and after spinning using several solid-state NMR methods <u>Tetsuo Asakura</u> ,Kouji Yazawa,Katsuyuki Nishimura,Keiko Okushita,Yasumoto Nakazawa,Hironori Kaji.....	4099
		<b>S. Kawahara, presiding</b>	
17:05	1N18	Higher Order Structure of iPP/VGCF Composite Material Formed by Annealing in Magnetic Field <u>Masafumi Yamato</u> ,Shuhei Ohbayashi,Hideo Horibe,Kohki	

17:30	1N19	Takahashi, Kazuo Watanabe.....	4101
		Structural Characterization of Ultra-High Molecular Weight Polyethylene Reactor Powders Using Solid-State <sup>1</sup> H-NMR Measurement	
17:55	1N20	<u>Hiroki Uehara</u> , Takeshi Yamanobe.....	4103
		Deterioration mechanism of mouse guard as evaluated by NMR measurements	
		<u>Takeshi Yamanobe</u> , Ryoko Kuwahara, Fumio Yarita, Kazunori Yamawaki, Katusi Katano, Hiroyuki Mogi, Tomoko Yarita, Masayasu Kuwahara, Hiroki Uehara.....	4105

## Thursday, September 12

### Noninvasive Characterization of Polymer Material Systems

#### N. Asakawa, presiding

9:10	2N01	Quantitative Analysis of Surface Strain of Bending Flexible Films <u>Norihisa Akamatsu</u> , Jun-ichi Mamiya, Motoi Kinoshita, Shigenori Fujikawa, Junichi Takeya, Atsushi Shishido.....	4107
9:35	2N02	Measurement of surface strain of bending layered PDMS film by surface labeled grating <u>Wataru Tashiro</u> , Norihisa Akamatsu, Jun-ichi Mamiya, Motoi Kinoshita, Shigenori Fujikawa, Atsushi Shishido.....	4109
10:00	2N03	Shape-tunable wrinkles for a switchable optical diffuser Takuya Ohzono, <u>Kosuke Suzuki</u> , Tomohiko Yamaguchi, Nobuko Fukuda....	4111
10:25	2N04	Local Dynamics of Polystyrene Chain Ends Studied by Site-Specific Isotope Labeling <u>Yohei Miwa</u> , Taro Udagawa, Osamu Urakawa, Shogo Nobukawa, Shoichi Kutsumizu.....	4113

#### Y. Miwa, presiding

10:50	2N05	Study on Inhomogeneous Structure in Poly(dimethyl siloxane)-co-Poly(hydrophilic monomer) Network Gel <u>Yuka Mori</u> , Eri Ito, Katsuhiko Yamamoto, Isamu Akiba.....	4115
11:15	2N06	Analysis of Thermal Expansion Behaviors of Polyimide Films Based on Variable Temperature Far-Infrared Absorption Spectroscopy and Dynamic Viscoelastic Measurements <u>Tomohiro Okada</u> , Masashi Mizoroki, Shinji Ando.....	4117
11:40	2N07	FT-IR Spectroscopic Imaging of Distribution of Molecular Chain Orientation of poly((R)-3-hydroxybutyrate) (PHB) Banded Spherulite <u>Yuta Hikima</u> , Junko Morikawa, Sergei G. Kazarian.....	4119

### Room O

## Wednesday, September 11

### Polymer Materials for Energy-related Devices

9:50	1OSO	Introductory Remarks <u>Kenichi Oyaizu</u> .....	3949
		<b>H. Mori, presiding</b>	
10:00	1O03	Fabrication of ionic liquid/polymer monolith composites as	

		membranes and their application to dye-sensitized solar cells <u>Yohei Nakanishi</u> ,Kyoko Konishi,Keita Sakakibara,Kohji Ohno,Norio Ishizuka,Takashi Morinaga,Takaya Sato,Yoshinobu Tsujii ..... 3950	
10:25	1O04	Dye-Sensitized Solar Cells utilizing Organic Redox Mediator and Charge-Storable Photovoltaic Device composed of the Radical Polymer-based Secondary Battery <u>Fumiaki Kato</u> ,Masahiro Ueno,Noriko Hayo,Ryo Kato,Satomi Kashiwagi,Yoshito Sasada,Kenichi Oyaizu,Michio Suzuka,Naoki Hayashi,Takashi Sekiguchi,Takeyuki Yamaki,Hiroyuki Nishide, ..... 3952	
10:50	1O05	Charge-storable DSSC Using Polyviologen and Their Charge Storage Performance <u>Michio Suzuka</u> ,Shu Hara,Ryosuke Takahashi,Kenichi Oyaizu,Hiroyuki Nishide ..... 3954	
		<b>F. Kato, presiding</b>	
11:15	1O06	Application of novel D- $\pi$ -A type compounds containing EDOT to dye-sensitized solar cells <u>Yohei Ito</u> ,Ichiro Imae,Yousuke Ooyama,Kenji Komaguchi,Yutaka Harima ..... 3956	
11:40	1O07	Star-shaped organic semiconductor for high performance Bulk-heterojunction solar cells <u>Keisuke Takemoto</u> ,Mutsumi Kimura ..... 3958	
		<b>K. Oyaizu, presiding</b>	
12:55	1O08IL	Development of Organic Solar Cells Based on Polymer Blend Thinfilms <u>Shinzaburo Ito</u> ..... 3960	
		<b>H. Ohkita, presiding</b>	
13:45	1O10	Synthesis of Low Band-Gap Polymers using a Phenacene-Type Donor Unit and Its Application to Organic Photovoltaic Cells <u>Hiroki Mori</u> ,Masato Suetsugu,Hikaru Nonobe,Yasushi Nishihara..... 3963	
14:10	1O11	Achievements of high purity and high molecular weight of conjugated polymers by direct arylation polycondensation -Contribution to improvement of photon-to-current conversion efficiency- <u>Junpei Kuwabara</u> ,Seong Jib Choi,Koutarou Yamazaki,Takeshi Yasuda,Liyuan Han,Shigehiro Kagaya,Takaki Kanbara ..... 3965	
14:35	1O12	Highly efficient solar cells using naphthobisthiadiazole-based copolymers <u>Itaru Osaka</u> ,Takeshi Kakara,Masafumi Shimawaki,Hiroki Mori,Tomoyuki Koganezawa,Kazuo Takimiya ..... 3967	
		<b>J. Kuwabara, presiding</b>	
15:00	1O13	Improved performance of organic thin-film solar cells utilizing polythiophene block copolymer <u>Kenji Ogino</u> ,Kenji Ando,Kousuke Tsuchiya..... 3969	
15:25	1O14	Formation of Nanostructures and Photovoltaic Properties of Hydrogen-bonding Oligo(hexylthiophene)s <u>Lin Xu</u> ,Mika Suzuki,Yuki Tani,Akinori Saeki,Shu Seki,Ken-ichi Nakayama,Shiki Yagai ..... 3971	
15:50	1O15	Charge Generation and Recombination in Microphase-Separated Thiophene-Fullerene Diblock Copolymer Films <u>Hideo Ohkita</u> ,Hiroaki Yasuda,Shunsuke Yamamoto,Hiroaki Benten,Shinzaburo Ito,Shoji Miyanishi,Keisuke Tajima,Kazuhito Hashimoto ..... 3973	

16:15	1O16	Electric-field dependent dissociation of charge transfer state in polymer solar cells <u>Yuta Izumiya</u> ,Hideo Ohkita,Hiroaki Bente,Shinzaburo Ito .....	3975
<b>I. Osaka, presiding</b>			
16:40	1O17	Miscibility and phase separation of binary systems of the non-peripheral phthalocyanine liquid crystals Yukimasa Matsuda,Takaya Nakao,Minokazu Takahashi, Lydia Sosa-vargas,Hiroyuki Yoshida,Akihiko Fujii,Masanori Ozaki, <u>Yo Shimizu</u> .....	3977
17:05	1O18	Mesomorphism and carrier mobility of binary systems of the non-peripheral type perfluoroalkylated phthalocyanine and a perfluoroalkylated C60 derivative <u>Lydia Sosa-vargas</u> ,Fabien Nekelson,Minokazu Takahashi,Yukimasa Matsuda,Hiroyuki Yoshida,Akihiko Fujii,Masanori Ozaki,Yo Shimizu .....	3979
17:30	1O19	Highly Efficient All-Polymer Solar Cells with Low-Bandgap Donor and Acceptor Polymers <u>Daisuke Mori</u> ,Hiroaki Bente,Hideo Ohkita,Shinzaburo Ito.....	3981
17:55	1O20	Charge Generation Dynamics in Polymer/Polymer Blend Solar Cells with Low-Bandgap Donor and Acceptor <u>Shodai Ishida</u> ,Daisuke Mori,Hiroaki Bente,Hideo Ohkita,Shinzaburo Ito .....	3983

## Thursday, September 12

### Polymer Materials for Energy-related Devices

#### Y. Tezuka, presiding

9:10	2O01	Fabrication of layered organic thin film solar cells <u>Naoki Iwamoto</u> ,Takeshi Yamao,Shu Hotta.....	3985
9:35	2O02	Organic thin film solar cells based on TPCO <u>Kenji Ohga</u> ,Shu Hotta,Takeshi Yamao.....	3987
10:00	2O03	Control of Donor/Acceptor Interface Structures in Polymer Solar Cells <u>Keisuke Tajima</u> ,Yufei Zhong,Akira Tada,Seiichiro Izawa,Kazuhiro Hashimoto .....	3989

#### K. Tajima, presiding

10:25	2O04	Improvement of power conversion efficiency of bilayer organic photovoltaic devices composed of electrodeposited polythiophene and methanofullerenes Takumi Ito,Tatsuya Yamamoto, <u>Yoshihiko Tezuka</u> ,Hitoshi Tanaka.....	3991
10:50	2O05	Development of novel D-A type polymers including EDOT for the application to organic thin film solar cells <u>Hitoshi Sagawa</u> ,Ichiro Imae,Yousuke Ooyama,Kenji Komaguchi,Yutaka Harima .....	3993

#### K. Oyaizu, presiding

11:15	2O06IL	Innovation of Energy Devices by Collaboration of Ionic Liquids and Polymers <u>Masayoshi Watanabe</u> .....	3995
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#### S. Miyanishi, presiding

12:55	2O08	Evaluation of proton conduction for polymer electrolyte thin films: Effect of thickness and substrate on structure and property <u>Akihiro Ohira</u> ,Seiichi Kuroda,Tatsuya Oshima,Masahiro Rikukawa ..	3998
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13:20	2009	Synthesis and Characterization of Poly(phenylene) Electrolytes with Superacid Groups (III) -Effect of acidity- <u>Tatsuya Oshima</u> ,Yusuke Sakaki,Masahiro Fujita,Akihiro Ohira,Yuko Takeoka,Masahiro Rikukawa .....	4000
13:45	2010	Influence of Terminal Substituents of Non-crosslinked Ionomers with Two Acid Groups as Side Chain <u>Akihiro Shinohara</u> ,Kenji Imai,Satoru Yamamoto,Naoki Hasegawa .....	4002
14:10	2011	Preparation and characteristics of ultra-thin electrolyte membranes composed of polybenzimidazole nanofibers <u>Manabu Tanaka</u> ,Yasushi Takeda,Hiroyoshi Kawakami .....	4004
<b>A. Ohira, presiding</b>			
14:35	2012	Effect of the hydrophobic moiety in sulfonated poly(arylene ether) block copolymers <u>Mayu Sakai</u> ,Junpei Miyake,Kenji Miyatake,Masahiro Watanabe .....	4006
15:00	2013	Morphological Analyses of Hydrocarbon Ionomer Membranes and Their Fuel Cell Performance <u>Takashi Mochizuki</u> ,Kenji Miyatake,Katsuyoshi Kakinuma,Makoto Uchida,Shigehito Deki,Masahiro Watanabe.....	4008
15:25	2014	Measurement of coefficient of static friction between MEA and GDL and reducing deformation under humidity cycles <u>Tomoaki Uchiyama</u> ,Hideyuki Kumei,Toshihiko Yoshida,Kazuhiko Ishihara.....	4010
15:50	2015	Precise controlling of ion conduction pathway by self-assembled anion conductive membrane and its analysis <u>Shoji Miyanishi</u> ,Takanori Fukushima,Takeo Yamaguchi .....	4012
<b>T. Uchiyama, presiding</b>			
16:15	2016	Development of molecularly-designed solid electrolyte for the understanding of OH- ion conduction Yoshiaki Shoji,Akira Hasegawa, <u>Shoji Miyanishi</u> ,Hidenori Ohashi,Takanori Tamaki,Takanori Fukushima,Takeo Yamaguchi.....	4014
16:40	2017	Extreme miniaturization of the catalyst in fuel cells for drastic reduction of the platinum consumption <u>Takane Imaoka</u> ,Wang-jae Chun,Kimihisa Yamamoto .....	4016
17:05	2018	In-situ observation on operating polymer electrolyte fuel cell by small-angle neutron scattering & scanning electron microscope <u>Satoshi Koizumi</u> ,Satoru Ueda,Daisuke Yamaguchi.....	4018

## Friday, September 13

### Polymer Materials for Energy-related Devices

#### T. Imaoka, presiding

9:10	3001	Platinum Loading onto Carbon Nanotube-Wrapped Polybenzimidazole Having Quaternary Ammonium Salt and Characterization Naotoshi Nakashima,Tsuyohiko Fujigaya, <u>Chiori Saito</u> .....	4020
9:35	3002	Characterization of a fuel cell electrocatalyst based on polybenzimidazole-wrapped carbon materials <u>Shinsuke Hirata</u> ,Tsuyohiko Fujigaya,Naotoshi Nakashima.....	4022
10:00	3003	Electrochemical Performance of Dendritic-shaped Pt-Nanoparticle on a Graphene Nanosheet Electrode <u>Yuto Saruhashi</u> ,Hiroshi Endo,Takeshi Kawai.....	4024

#### Y. Tominaga, presiding

10:25	3O04	Electrochemical energy device using nanohybrid materials between molecular clusters and nanocarbons <u>Hirofumi Yoshikawa</u> ..... 4026	4026
10:50	3O05	Synthesis and Electrode-Active Material Properties of TEMPO-Substituted Branched Polymers <u>Takashi Sukegawa</u> ,Issei Masuko,Kan Sato,Kenichi Oyaizu,Hiroyuki Nishide ..... 4028	4028
11:15	3O06	Synthesis and Electrochemical Properties of Radical Polymers Possessing Nitroxide Moieties Based on Coordination Polymerization of Allene Derivatives <u>Hiroshi Eguchi</u> ,Shinsuke Inagi,Ikuyoshi Tomita..... 4030	4030
11:40	3O07	Development of Organic Redox Polymers Based on the 1,2-Diketone Structure as Cathode Materials for Li-ion Batteries <u>Akihiro Shimizu</u> ,Hiroki Kuramoto,Yutaka Tsujii,Toshiki Nokami,Jun-ichi Yoshida..... 4032	4032
<b>H. Tsutsumi, presiding</b>			
12:55	3O08	Properties of Solid Polymer Electrolyte Based on Alternating Copolymers of Vinylene Carbonate and Vinyl Ethers with Various Oligo(ethylene oxide) Chains <u>Takahiro Uno</u> ,Katsuhito Fujita,Kentarou Inoue,Hiroki Iwama,Kensaku Kondoh,Masataka Kubo,Takahito Itoh ..... 4034	4034
13:20	3O09	Synthesis of CO <sub>2</sub> /epoxide copolymers having various side chains and characterization as electrolyte materials <u>Keisuke Ota</u> ,Yoichi Tominaga..... 4036	4036
13:45	3O10	Extraordinary Ion-conductive Behavior of Poly (ethylene carbonate)-based Electrolytes and Composites <u>Kenta Yamazaki</u> ,Yoichi Tominaga ..... 4038	4038
<b>T. Uno, presiding</b>			
14:10	3O11	Designing of PVB type polymer gel electrolytes intended to enhance the cation mobility <u>Yuria Saito</u> ,Miko Okano,Tetsuo Sakai,Taisuke Kamada ..... 4040	4040
14:35	3O12	Application of poly(oxetane)-based electrolytes to solid-state secondary batteries <u>Hiromori Tsutsumi</u> ,Yohei Nakano,Asami Suzuki,Ryo Shibutani ..... 4042	4042
15:00	3O13	Intelligent functions of porous polyethylene membrane with the side chain crystalline block copolymer - Application to lithium ion conductor - <u>Yusuke Sano</u> ,Hiroshi Sekiguchi,Ryoko Nakano,Shigeru Yao,Satoshi Ichikawa ..... 4044	4044
15:25	3O14	Synthesis of poly(acrylic acid) derivatives and the architectural effect of derivatives on dispersibility <u>Akane Kubotera</u> ,Masaki Matsumoto,Reiko Saito ..... 4046	4046

<b>Room Q</b>
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**Wednesday, September 11**

**Role of Solvent that Supports Soft Materials**

9:50	1QSO	Introductory Remarks
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		<u>Ryo Yoshida</u> , Masahiko Annaka .....	4239
		<b>R. Yoshida, presiding</b>	
10:00	1Q03	Super-structure formation and fixation of liquid crystalline polymer in arbitrary gels <u>Riku Takahashi</u> , Arifuzzaman Md., Takayuki Kurokawa, Tasuku Nakajima, Jian Ping Gong.....	4240
10:25	1Q04	Preparation and evaluation of photo-stimuli responsive hydrogel actuator based on host-guest interaction <u>Shogo Hatanaka</u> , Yoshinori Takashima, Masaki Nakahata, Takahiro Kakuta, Akira Harada .....	4242
10:50	1Q05	Preparation of supergiant polysaccharide sacran/silica hybrids soft-materials and their metal adsorbability evaluation <u>Masanori Miyazato</u> , Maiko Okajima, Tatsuo Kaneko .....	4244
		<b>T. Nakajima, presiding</b>	
11:15	1Q06	Zwitterionic low-molecular-weight hydrogelators based on L-amino acids <u>Moemi Kondo</u> , Masahiro Suzuki, Kenji Hanabusa .....	4246
11:40	1Q07	Development of conductive polymer gels <u>Yuta Abe</u> , Jin Gong, M. hasnat Kabir, Masato Makino, Hidemitsu Furukawa .....	4248
		<b>M. Annaka, presiding</b>	
12:55	1Q08IL	Soft material using ionic liquids as solvent <u>Takeshi Ueki</u> , Masayoshi Watanabe .....	4250
		<b>H. Okuzaki, presiding</b>	
13:45	1Q10	Thermo-reversible ion-gel based on LCST-type self-assembly of triblock copolymer in ionic liquid <u>Yuzo Kitazawa</u> , Takeshi Ueki, Lucas McIntosh, T. P. Lodge, Masayoshi Watanabe .....	4253
14:10	1Q11	Photo-healable ion gels utilizing photo-induced sol-gel transition of triblock copolymers containing azobenzene moiety <u>Ryoji Usui</u> , Yutaro Nakamura, Shota Sawamura, Yuzo Kitazawa, Satoru Imaizumi, Takeshi Ueki, Hisashi Kokubo, Masayoshi Watanabe .....	4255
14:35	1Q12	Viscoelasticity of Supramolecular Polymer Gels Prepared in an Ionic Liquid <u>Satoru Matsushima</u> , Xudong He, Mikihiro Hayashi, Hajime Yamagishi, Atsushi Noro, Yushu Matsushita .....	4257
		<b>K. Matsumura, presiding</b>	
15:00	1Q13	High-Strain PEDOT/PSS Actuators Fabricated by Metal Ion Doping <u>Satoru Endo</u> , Kana Iwashita, Hidenori Okuzaki .....	4259
15:25	1Q14	Preparation of redox-responsive hydrogel particles composed of three-armed oligo(ethylene glycol) and immobilization and release of protein <u>Koya Yamawaki</u> , Taka-aki Asoh, Akihiko Kikuchi .....	4261
15:50	1Q15	Electrophoretic adhesion of nonionic hydrogels utilizing phenylborate-containing polymer as binder <u>Kohtaroh Takaishi</u> , Taka-aki Asoh, Akihiko Kikuchi .....	4263
		<b>A. Kikuchi, presiding</b>	
16:15	1Q16	Redox-Generated Mechanical Motion of Supramolecular Polymeric Actuator Based on Host-Guest Interactions and Its Mechanical Properties <u>Masaki Nakahata</u> , Yoshinori Takashima, Akihito Hashidzume, Akira	

		Harada .....	4265
16:40	1Q17	Pulse Width Modulation (PWM) based Motion Control of Ionomer-based Polymer Actuators <u>Eiichi Shoji</u> ,Yoshimichi Komoda.....	4267
17:05	1Q18	Fabrication of tough hydrogel fibers from polyampholyte <u>Ken-ichi Hoshino</u> ,Tao Lin Sun,Tasuku Nakajima,Takayuki Kurokawa,Jian Ping Gong.....	4269
		<b>T. Kurokawa, presiding</b>	
17:30	1Q19	Synthesis and Characteristics of Zwitterionic Nanocomposite Gels -Mechanical Property and Controlled Thermosensitivity - <u>Jinyan Ning</u> ,Kazutoshi Haraguchi.....	4271
17:55	1Q20	Formation and Characteristics of Nanocomposite Gels which are stable on drying <u>Kazutoshi Haraguchi</u> ,Katsuhito Kuroki,Mitsuko Nomura .....	4273

## Thursday, September 12

### Role of Solvent that Supports Soft Materials

		<b>T. Yamamoto, presiding</b>	
9:10	2Q01	Precision Synthesis of Block Copolymers of Various Vinyl Ethers with Styrene Derivatives and Preparation of Functional Films <u>Tomoya Yoshizaki</u> ,Arihiro Kanazawa,Shokyoku Kanaoka,Sadahito Aoshima .....	4275
9:35	2Q02	Formation of Self-Healable Materials Cross-Linked by Inclusion Complexes and its Mechanical Stretching Properties <u>Takahiro Kakuta</u> ,Yoshinori Takashima,Hiroyasu Yamaguchi,Akira Harada .....	4277
10:00	2Q03	Control of Physical Properties of A Supramolecular Gel Based on Molecular Assemble States <u>Keigo Matsumoto</u> ,Atsuomi Shundo,Masashi Ohno,Shun Fujita,Koichiro Saruhashi,Nobuhide Miyachi,Keiji Tanaka .....	4279
		<b>S. Kanaoka, presiding</b>	
10:25	2Q04	Synthesis of photocleavable cyclic PLA-PEO block copolymers and formation of a hydrogel by the topological transformation <u>Kotaro Inoue</u> ,Naoto Sugai,Takuya Yamamoto,Yasuyuki Tezuka .....	4281
10:50	2Q05	Functions of cyclic amphiphilic block copolymer micelles in the presence of guest molecules <u>Yuki Masuda</u> ,Satoshi Honda,Takuya Yamamoto,Yasuyuki Tezuka....	4283
11:15	2Q06	The gelation behavior and application of cyclic compounds <u>Yasuaki Yamamoto</u> ,Tada-aki Yamagishi,Tomoki Ogoshi.....	4285
11:40	2Q07	Molecular design of slide-ring materials for the control of physical properties <u>Kazuaki Kato</u> ,Kohzo Ito.....	4287
		<b>H. Furukawa, presiding</b>	
12:55	2Q08	Synthesis of Star-Block Copolymers with High Molecular Weights by Living Radical Polymerization and Fabrication of Gel with Homogeneous Network Structure <u>Katsuya Kida</u> ,Shu-yao Hsu,Keita Sakakibara,Kohji Ohno,Yoshinobu Tsujii .....	4289
13:20	2Q09	Synthesis of composite microgels by seeded emulsion polymerization <u>Daisuke Suzuki</u> ,Tomoyo Yamagata,Masaki Murai,Chiaki Kobayashi.....	4291

13:45	2Q10	Photocleavable crosslinker for spatiotemporal control of physical and chemical characteristics of hydrogels <u>Shinji Sugiura</u> ,Fumiki Yanagawa,Takeomi Mizutani,Toshiyuki Takagi,Kimio Sumaru,Toshiyuki Kanamori .....	4293
14:10	2Q11	Fabrication of tubular self-oscillating gels with autonomic transport function and their application <u>Yusuke Shiraki</u> ,Takashi Miyata,Ryo Yoshida .....	4295
<b>K. Okeyoshi, presiding</b>			
14:35	2Q12	Smart Eyeball Robots Developed with Soft and Wet Materials <u>Hidemitsu Furukawa</u> ,Tomohiro Yokoo,Shota Murata,Jin Gong,Yosuke Watanabe,Md. Hasnat Kabir,Masato Makino,Kyoko Murase,Tsutomu Sunada .....	4297
15:00	2Q13	Autonomous mechanical response of active network constructed from biomolecular motor system <u>Daisuke Inoue</u> ,Kazuki Sada,Akira Kakugo .....	4299
15:25	2Q14	Molecular Design for Thermo-responsive Gel by Using Molecular Recognition of Small Molecules <u>Shogo Amemori</u> ,Desi Hamed Gharib,Kenta Kokado,Kazuki Sada .....	4301
15:50	2Q15	Control of Phase Separation of Polymer Solution Induced by Chemical Transformation <u>Yoshimi Hamano</u> ,Shogo Amemori,Kenta Kokado,Kazuki Sada .....	4303
<b>D. Suzuki, presiding</b>			
16:15	2Q16	Preparation of Shape Memory Gels Using Molecular Complexes as Dynamic Crosslinks <u>Takashi Miyata</u> ,Jun Goto,Akifumi Kawamura,Tadashi Uragami.....	4305
16:40	2Q17	Design of Stimuli-Responsive Hydrogels That Recognize Protein Conformation and Their Target Protein-Responsive Behavior <u>Yoshiaki Kuriu</u> ,Yuya Konishi,Akifumi Kawamura,Tadashi Uragami,Takashi Miyata .....	4307
17:05	2Q18	The effect of guanidino groups as a physical cross-linking point in polymers having arginine residues in side chains <u>Yoshitsugu Nishino</u> ,Takashi Aoki.....	4309

## Friday, September 13

### Role of Solvent that Supports Soft Materials

#### K. Kurihara, presiding

9:10	3Q01	Thermoresponsive Property Regulation by Network Sequence Control of Polymer Gels <u>Shohei Ida</u> ,Toru Kawahara,Tatsuya Ishikawa,Satoshi Tanimoto,Yoshitsugu Hirokawa .....	4311
9:35	3Q02	Effect of initial and final concentrations on elastic modulus of polymer gels <u>Takamasa Sakai</u> ,Ung-il Chung.....	4313
10:00	3Q03	SANS Study of the tacticity effects on the hydrophilicity and the phase separation of poly(N-isopropylacrylamide) Kengo Nishi,Takashi Hiroi,Kei Hashimoto,Kenta Fujii,Yukiteru Katsumoto, <u>Mitsuhiro Shibayama</u> .....	4315

#### T. Sakai, presiding

10:25	3Q04	Friction properties of polymer hydrogels studied by resonance shear measurement	
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10:50	3Q05	<u>Huai-yin Ren</u> , Masashi Mizukami, Tadao Tanabe, Hidemitsu Furukawa, Kazue Kurihara.....	4317
		Sliding Friction and Lubrication of Hydrogels with Surface Topological Patterns	
11:15	3Q06	<u>Shintaro Yashima</u> , Tetsuro Yamamoto, Tasuku Nakajima, Takayuki Kurokawa, Jian Ping Gong, Antoine Chateauminois .....	4319
		Role of Water Interface in Bio-inert Polymers	
11:40	3Q07	<u>Toyoaki Hirata</u> , Daisuke Kawaguchi, Hisao Matsuno, Masaru Tanaka, Keiji Tanaka .....	4321
		Wetting Reversal at Gelation Transition: Cohesive Energy of Solvents	
		Shinya Hirayama, Kei Yamaguchi, <u>Masahito Sano</u> .....	4323
		<b>K. Kokado, presiding</b>	
12:55	3Q08	Design and preparation of smart nanofiber aiming at cancer therapy	
		Young-jin Kim, Mitsuhiro Ebara, <u>Takao Aoyagi</u> .....	4325
13:20	3Q09	Design of Liquid Cell Culture Substrate with Fluidic Interface for Regulation of Cell Functions	
		<u>Koichiro Uto</u> , Mitsuhiro Ebara, Takao Aoyagi.....	4327
13:45	3Q10	Fabrication and Functionalization of 3D-Construct by Elastocapillary Self-Assembly	
		<u>Tamami Tsuji</u> , Hiroshi Endo, Takeshi Kawai .....	4329
		<b>T. Aoyagi, presiding</b>	
14:10	3Q11	Sliding friction of zwitterionic hydrogel: Electrostatic origin of frictional stress	
		<u>Jamil Ahmed</u> , Tetsuro Yamamoto, Honglei Guo, Takayuki Kurokawa, Tasuku Nakajima, Jian Ping Gong .....	4331
14:35	3Q12	in-situ Observation and Frictional Measurement of Soft and Wet Interface Between Gel and Other Materials	
		<u>Naoya Yamada</u> , Jin Gong, Md. Hasnat Kabir, Masato Makino, Hidemitsu Furukawa.....	4333
15:00	3Q13	Meso-Decorated Gel Materials	
		<u>Jin Gong</u> , Susumu Igarashi, Kensuke Sawamura, Masato Makino, Md. Hasnat Kabir, Hidemitsu Furukawa .....	4335

<b>Room R</b>
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**Wednesday, September 11**

**Fusion of Nanostructure Fabrication Technology and Optical, Electronic, and Biological Functionalities**

12:45	1RSO	Introductory Remarks	
		<u>Akinori Saeki</u> .....	5172
		<b>K. Sugiyasu, presiding</b>	
12:55	1R08	Fabrication of nanopores using swelling of semi-fluorinated block copolymers with carbon dioxide	
		<u>Tomoaki Shinkai</u> , Hideaki Yokoyama, Kohzo Ito, Yasuhiro Sakai, Kenji Sugiyama .....	5173
13:20	1R09	Phase separation of mixed films composed of azobenzene-based photochromic amorphous molecular materials and quaternary salts	
		<u>Ryoji Ichikawa</u> , Hideyuki Nakano.....	5175

13:45	1R10	Production and functionalization of a nanofiber network by using a core-shell particle as an atto-reactor <u>Yurika Ozaki</u> , Yuuka Fukui, Keiji Fujimoto .....	5177
<b>K. Okano, presiding</b>			
14:10	1R11	Development of Nanowires Based on pi-Conjugated Small Molecules by Single-Particle Nanofabrication Technique <u>Yuki Takeshita</u> , Atsushi Asano, Tsuneaki Sakurai, Akinori Saeki, Shu Seki, Masaki Sugimoto .....	5179
14:35	1R12	Supramolecular living polymerization <u>Kazunori Sugiyasu</u> , Soichiro Ogi, Masayuki Takeuchi .....	5181
<b>A. Kawamura, presiding</b>			
15:00	1R13	Uniaxial orientation of hybrid materials comprising nematic liquid crystals and inorganic semiconductor nanorods <u>Shoichi Kubo</u> , Rei Taguchi, Ken-ichi Hayashida, Mamiko Narita, Shingo Hadano, Osamu Watanabe, Tomokazu Iyoda, Masaru Nakagawa .....	5183
15:25	1R14	Formation of polyion complex nano-architectures in aqueous milieus and their unique properties <u>Akihiro Kishimura</u> , Arie Wibowo, Yasutaka Anraku, Sivanantham Murugaboopathy, Kazunori Kataoka .....	5185
<b>A. Watanabe, presiding</b>			
15:50	1R15	Biological Functions of Organic Nanotubes with Soft Nanospaces <u>Naohiro Kameta</u> , Mitsutoshi Masuda, Toshimi Shimizu .....	5187
16:15	1R16	Nano-micro devices composed of amphiphilic poly(amino acid) for drug delivery systems <u>Takami Akagi</u> , Ryouta Fukumoto, Mitsuru Akashi .....	5189
16:40	1R17	Fabrication of One-dimensional nanoactuators by Single Particle Nano-fabrication Technique <u>Masaaki Omichi</u> , Hiromi Marui, Satoshi Tsukuda, Masaki Sugimoto, Shu Seki .....	5191
<b>H. Nakano, presiding</b>			
17:05	1R18	Synthesis of Bioconjugated Nanoparticles with Biomolecular Complexes as Dynamic Crosslinks and Their Smart Functions <u>Akifumi Kawamura</u> , Yuta Hata, Tadashi Uragami, Takashi Miyata .....	5193
17:30	1R19	Highly sensitive detection of $\alpha$ -fetoprotein (AFP) with Ag-SiO <sub>2</sub> coated plasmonic chip <u>Fusanori Kondo</u> , Hiroshi Hirayama, Yoichi Aoki, Keiko Tawa .....	5195
17:55	1R20	Morphology control of thermoresponsive polymeric rubber-like nanorods <u>Takuya Matsuyama</u> , Ayaka Kimura, Taka-aki Asoh, Akihiko Kikuchi ..	5197

## Thursday, September 12

### Fusion of Nanostructure Fabrication Technology and Optical, Electronic, and Biological Functionalities

#### T. Nakashima, presiding

9:10	2R01	Fabrication of metal/TiO <sub>2</sub> hybrid nanotubes and effects of metal-doping on the photocatalytic activities of TiO <sub>2</sub> <u>Yukie Katou</u> , Masahiro Suzuki, Kenji Hanabusa .....	5199
9:35	2R02	Facile Fabrication of Transparent and Conductive Nanowire Networks by Wet Chemical Etching with Electrospun Nanofiber Mask Template	

		<u>Keisuke Azuma</u> ,Koichi Sakajiri,Hidetoshi Matsumoto,Sungmin Kang,Junji Watanabe,Masatoshi Tokita .....	5201
10:00	2R03	The photo-polymerization of phenylene dicarbamate having diacetylene units : the Chromic properties of the photo-polymerized solids	
		<u>Yuuki Miyazaki</u> ,Kazuo Okamoto,Kenji Ogino.....	5203
		<b>Y. Yamamoto, presiding</b>	
10:25	2R04	Preparation of Polymer Particles Containing a Catechol Group and Hybridization of Inorganic Nano particles	
		<u>Hiroki Satoh</u> ,Masaaki Kanahara,Yuta Saito,Masatsugu Shimomura,Hiroshi Yabu .....	5205
10:50	2R05	Ultra-Thin SiO <sub>2</sub> Film Fabricated from Silsesquioxane Based Polymer Nanosheet	
		<u>Shunsuke Yamamoto</u> ,Kazuki Sonobe,Masaya Mitsuishi,Tokuji Miyashita.....	5207
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11:40	2R07	Photoresponsive stripe structures composed of achiral azobenzene liquid crystals	
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12:55	2R08IL	Macroscopic Molecular Materials Based on Self-assembly Control: Moth-eye-like Architectures and Luminescent Liquids	
		<u>Takashi Nakanishi</u> .....	5213
		<b>I. Hisaki, presiding</b>	
13:45	2R10	Phase separated structure of polymer blends in super fine droplets by subfemto-liter Inkjet technique	
		Yuma Serizawa,Kei Fukuhara,Yu Mizuno,Shusaku Nagano,Mitsuo Hara, <u>Takahiro Seki</u> .....	5216
14:10	2R11	Nano-structures and Electronic Functional Properties of a Series of Chalcogenophene-containing V-shaped Pi-conjugated Molecules	
		<u>Chikahiko Mitsui</u> ,Toshihiro Okamoto,Masakazu Yamagishi,Takeshi Matsushita,Katsumasa Nakahara,Yuri Hirose,Junshi Soeda,Hiroyasu Sato,Akihito Yamano,Takafumi Uemura,Junichi Takeya.....	5218
14:35	2R12	Aggregated Structures of N-shaped Pi-conjugated Molecules and Their Application to Organic Field-effect Transistors	
		<u>Toshihiro Okamoto</u> ,Chikahiko Mitsui,Masakazu Yamagishi,Takeshi Matsushita,Yuri Hirose,Katsumasa Nakahara,Junshi Soeda,Hiroyasu Sato,Akihito Yamano,Takafumi Uemura,Junichi Takeya.....	5220
		<b>T. Seki, presiding</b>	
15:00	2R13	Morphology control and optoelectronic properties of pi-conjugated polymers	
		<u>Yohei Yamamoto</u> ,Liang Tong,So Kushida,Junpei Kuwabara,Takaki Kanbara,Akinori Saeki,Shu Seki.....	5222
15:25	2R14	Self-assembly and Biased Circularly Polarized Luminescence of Chiral Bichromophoric Dyes	
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		Naito, Tsuyoshi Kawai .....	5224
15:50	2R15	Synthesis and Characterization of Polythiophenes Having Phosphonic Acid Groups (VI) - Investigation of Molecular Recognition Behavior - <u>Ryoichiro Akutsu</u> , Masahiro Fujita, Yuko Takeoka, Masahiro Rikukawa ....	5226
<b>T. Okamoto, presiding</b>			
16:15	2R16	Precise Control of Distance between Regiospecifically Accumulated Porphyrins on Microphase Segregation Interface <u>Takashi Tokuoka</u> , Masashi Aotani, Gensuke Akimoto, Sadayuki Asaoka ...	5228
16:40	2R17	The Constructions of Supramolecular Nanofibers of Dehydrobenzoannulenes Based on Anisotropic Crystal Growth <u>Hajime Shigemitsu</u> , Ichiro Hisaki, Norimitsu Tohnai, Mikiji Miyata .....	5230
17:05	2R18	Microphase segregated nanostructure of star-shaped amphiphilic liquid crystalline block copolymer with porphyrin core <u>Mitsuharu Takahashi</u> , Shunsuke Yamada, Masashi Aotani, Sadayuki Asaoka .....	5232

## Friday, September 13

### Fusion of Nanostructure Fabrication Technology and Optical, Electronic, and Biological Functionalities

<b>T. Kataoka, presiding</b>			
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10:25	3R04	High Periodic Mesoporous Polyimide Films Utilizing Block Copolymers <u>Kenta Okuhara</u> , Yuanyuan Liu, Koshi Ohnishi, Teruaki Hayakawa .....	5236
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<b>H. Okamura, presiding</b>			
11:15	3R06	Alignment of Ferritin by using Self-assembled Diblock Copolymer Patterns <u>Mikihito Takenaka</u> , Go Sakaguchi, Aisyah Shamsudin, Hirokazu Hasegawa, Kaoru Yamaguchi .....	5240
11:40	3R07	Large scale fabrication of metal nanoparticle arrays templated by nanophase separation structure of block copolymer and their optical property <u>Shigenori Fujikawa</u> , Sayoko Fujino .....	5242
<b>T. Hayakawa, presiding</b>			
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13:20	3R09	Photocontrol of microphase separated structure in liquid crystalline azobenzene block copolymer thin films <u>Shusaku Nagano</u> , Takahiro Seki .....	5246
13:45	3R10	Removal of polymers with various chemical structures using nanobubble ozone <u>Yousuke Goto</u> , Hitomi Kitamura, Takashi Nishiyama, Takahiro Nishimoto, Masahiro Furutani, Masayoshi Takahashi, Kunihiko	

		Koike, Hideo Horibe .....	5248
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15:00	3R13	Self-organizing Silsesquioxane-containing Oligomers for Sub-10 nm Scale Lithography <u>Lei Wang</u> , Yoshihito Ishida, Rina Maeda, Masatoshi Tokita, Teruaki Hayakawa .....	5254

<b>Room S</b>
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**Wednesday, September 11**

**Recent Developments of Precise Network Polymers**

9:50	1SSO	Introductory Remarks <u>Joji Kadota</u> , Yoshitaka Takezawa .....	5256
		<b>M. Kubouchi, presiding</b>	
10:00	1S03	Unique Properties of Trithiocarbonate as RAFT Agent for Gel Synthesis <u>Shohei Ida</u> , Masamitsu Yamawaki, Shoichi Furukawa, Satoshi Tanimoto, Yoshitsugu Hirokawa .....	5257
10:25	1S04	A Macrocyclic Amphiphile with Photo-reactive 1,8-Diazaanthracenes towards 2-Dimensional Polymer Synthesis <u>Yougen Chen</u> , Ming Li, Payam Payamyar, Zhikun Zheng, Junji Sakamoto, A. Dieter Schluter .....	5259
10:50	1S05	Network Control of Polymers on the Basis of Ionic Monomer Crystal Structures <u>Kohei Yokota</u> , Hiroe Tsuchida, Kazuhisa Yamoto, Yoko Naito, Shin-ichi Matsuoka, Koji Takagi, Masato Suzuki .....	5261
		<b>S. Ida, presiding</b>	
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11:40	1S07	Synthesis and Function of Polyrotaxane Networks Containing Crown Ether-type Rotaxane Moieties at the Cross-link Points <u>Toshikazu Takata</u> , Takahiro Yoshii, Michiko Kuzume, Keisuke Iijima, Yasuhiro Kohsaka, Yasuhito Koyama, Kazuko Nakazono, Satoshi Uchida .....	5265
		<b>H. Kudo, presiding</b>	
12:55	1S08	Preparation of well-ordered nitrogen-doped mesoporous carbon based on network polymers of resol and oligoimides <u>Yuanyuan Liu</u> , Koshi Ohnishi, Kenta Okuhara, Rina Maeda, Xiaolin Wang, Teruaki Hayakawa .....	5267
13:20	1S09	Quantitative and low-invasive evaluation method of thermal degradation on electrical insulating resin <u>Masatoshi Kubouchi</u> , Anh Tran, Saiko Aoki, Takahito Muraki .....	5269

13:45	1S10	Local viscoelastic properties in the sol-gel transition of a supramolecular polymer solution <u>Yuji Matsumoto</u> ,Atsuomi Shundo,Keigo Matsumoto,Masashi Ohno,Katsuaki Miyaji,Masahiro Goto,Keiji Tanaka .....	5271
<b>H. Kishi, presiding</b>			
14:10	1S11	SAXS and pulsed-NMR Analysis of Phenolic Resin During Gelation Process <u>Atsushi Izumi</u> ,Toshio Nakao,Mitsuhiro Shibayama .....	5273
14:35	1S12	Large deformation and fracture of highly stretchable gels having permanent and transient crosslinks <u>Koichi Mayumi</u> ,Alba Marcellan,Guyllaine Ducouret,Costantino Creton,Tetsuharu Narita.....	5275
15:00	1S13	Development of cresol novolac resin using di-aldehydes as a photo-resist material having flexibility <u>Hirohito Yamasaki</u> ,Akimasa Kuramoto,Yuma Takeuchi,Takahisa Furumoto,Sadaaki Kuroiwa,Seiichirou Takabayashi .....	5277
<b>T. Takata, presiding</b>			
15:25	1S14	Synthesis and property of polyester containing hole in the main chain by the AN+B2(N=4,6,8) type polymerization <u>Norito Tarui</u> ,Hiroto Kudo .....	5279
15:50	1S15	Preparation of Heat Resistant Porous Rigid Polymer Network Film <u>Tetsuya Uchida</u> ,Tomoaki Suzuki,Ryo Ikeda.....	5281
16:15	1S16	Preparation of phenolic polymer with regular structure <u>Yuta Hattori</u> ,Tada-aki Yamagishi,Tomoki Ogoshi .....	5283
16:40	1S17	Characterization of liquid crystalline epoxy resin with spacers outside of mesogen unit <u>Hisanao Yamamoto</u> ,Akira Fujita,Mitsukazu Ochi,Miyuki Harada,Naoki Sakamoto .....	5285
<b>T. Yamagishi, presiding</b>			
17:05	1S18	Mechanism of Generating High Thermal Conductivity for Composite using the Mesogenic Epoxy Resin <u>Yuka Yoshida</u> ,Shingo Tanaka,Yoshitaka Takezawa .....	5287
17:30	1S19	Forming Liquid Crystalline Structure and Controlling its Domain Size during Gelling of the Mesogenic Epoxy Resin <u>Shingo Tanaka</u> ,Fusao Hojo,Yuka Yoshida,Yoshitaka Takezawa .....	5289
17:55	1S20	Electric & thermal conductive epoxy / Ag composites with self-assembly phase structures <u>Hajime Kishi</u> ,Sanae Tanaka,Yasuaki Nakashima,Takashi Saruwatari ...	5291

## Thursday, September 12

### Recent Developments of Precise Network Polymers

#### A. Sudo, presiding

9:10	2S01	Synthesis of Star-shaped Poly(vinyl ether) Polyols with Various Functional Groups and Properties of Crosslinked Polyurethanes Prepared Therefrom <u>Daichi Ohashi</u> ,Michio Urushisaki,Toshikazu Sakaguchi,Tamotsu Hashimoto .....	5293
9:35	2S02	Crosslinking and functionalization of acrylic resin monolith <u>Hiroshi Ishii</u> ,Hiroshi Uyama.....	5295
10:00	2S03	Synthesis and characterization of thermally crosslinkable	

hole-transporting polymer with benzocyclobutene units

Hayato Sawamoto,Kenji Ogino ..... 5297

**T. Hashimoto, presiding**

10:25 2S04 Preparation of self-healing organic-inorganic hybrid thin films with cross-linked by thiol-ene reaction

Kimihiko Matsukawa,Kazuya Nishio,Koji Mitamura,Noboru Nishioka,Seiji Watase,Hiroshi Fujita,Takeshi Fukuda ..... 5299

10:50 2S05 Design of Reworkable Dual-Curing System using an Acid Anhydride Moiety with Photopolymerizable Unit

Masanori Adachi,Haruyuki Okamura,Masamitsu Shirai ..... 5301

11:15 2S06 Surface Properties of Transparent Epoxy Resin Modified with Copolymer with Fluorinated Long Branches

Mitsukazu Ochi,Natsuko Ichikawa,Ryou Shiota,Miyuki Harada,Masanao Hara,Hiroshi Uchida ..... 5303

11:40 2S07 Synthesis of Networked Polymers Based on Polyaddition of myo-Inositol-Derivatives and Diisocyanates

Atsushi Sudo,Shuheii Okise,Shusuke Okamoto ..... 5305

**M. Ochi, presiding**

12:55 2S08 Functionality Control of Native Lignins by the Combination of Self- and Cross Condensations

Koudai Murai,Masamitsu Funaoka ..... 5307

13:20 2S09 Properties of epoxy resin hardened by steam exploded lignin

Hiroyuki Kagawa,Yoshiaki Okabe,Chizuru Sasaki,Yoshitoshi Nakamura ..... 5309

**Biopolymers and Biorelated Polymers**

**M. Maeda, presiding**

13:45 2S10 Selective imaging of RISC uptaking an anti-sense strand by use of siRNA involving a dye pair

Anna Ito,Hiromu Kashida,Yukiko Kamiya,Hiroyuki Asanuma ..... 4337

14:10 2S11 Molecular design of pH-responsive siRNA-grafted polymer and the application as PIC-based siRNA delivery

Hiroyasu Takemoto,Kanjiro Miyata,Nobuhiro Nishiyama,Kazunori Kataoka ..... 4339

14:35 2S12 Extraction of DNA-functionalized-semiconductor nanoparticles using reverse micelles

Tomoharu Kato,Yuhei Fujimoto,Ayane Shimomura,Tatsuo Maruyama ... 4341

**T. Okihara, presiding**

15:00 2S13 Development of functional oligonucleotides targeting microRNA

Asako Yamayoshi,Yohei Matsuyama,Akio Kobori,Akira Murakami .... 4343

15:25 2S14 Development of Tunnel-Current Measurements For Identification of Biopolymers

Takahito Ohshiro,Masateru Taniguchi,Tomoji Kawai ..... 4345

15:50 2S15 Formation of supramolecular aggregate of CD-grafted chitosan and insulin

Hironori Izawa,Yuki Daimon,Kohsaku Kawakami,Hideki Sakai,Masahiko Abe,Jonathan Hill,Katsuhiko Ariga ..... 4347

**M. Minoda, presiding**

16:15 2S16 Development of a tissue adhesive using chitin derivatives

Haruki Shimizu,Yoshiki Ito,Hironori Izawa,Shinsuke Ifuku,Minoru Morimoto,Hiroyuki Saimoto ..... 4349

16:40	2S17	Preparation of regioselective chitosan derivatives via "click chemistry" <u>Chisato Matsumoto</u> , Masahiro Wada, Hironori Izawa, Shinsuke Ifuku, Minoru Morimoto, Hiroyuki Saimoto.....	4351
17:05	2S18	Gelation of Chitin with Calcium Bromide Dihydrate/Methanol Solution and Conversion into Porous Materials <u>Rie Tajiri</u> , Aki Mihata, Kazuya Yamamoto, Jun-ichi Kadokawa.....	4353

## Friday, September 13

### Biopolymers and Biorelated Polymers

#### M. Morimoto, presiding

9:10	3S01	Function and Properties of complex between phosphorylated polysaccharides and surfactants <u>Takumi Okihara</u> , Shogo Kamenoue, Yasuhiro Yoshida, Naoko Namba, Shogo Takashiba, Noriyuki Nagaoka .....	4355
9:35	3S02	Preparation of Cellulose/Xanthan Gum Composite Films and Hydrogels through Ion Gels <u>Miwa Setoyama</u> , Kazuya Yamamoto, Jun-ichi Kadokawa .....	4357
10:00	3S03	Sulfation of Calcium Alginate Beads by Solution Plasma Processing <u>Yoshie Aoki</u> , Anyarat Watthanaphanit, Nagahiro Saito .....	4359
10:25	3S04	Successive Glycosylations Catalyzed by Thermostable Phosphorylase <u>Sachie Okawabata</u> , Riko Shimohigoshi, Yasutaka Tkemoto, Kazuya Yamamoto, Jun-ichi Kadokawa.....	4361

#### H. Izawa, presiding

10:50	3S05	Effect of alkyl chain length and degree of substitution on thermal and mechanical properties of Euglena plastics (long chain alkyl group introduced beta-1,3-glucan derivatives) <u>Motonari Shibakami</u> , Gen Tsubouchi, Masahiro Hayashi .....	4363
11:15	3S06	Synthesis of block-type glycopolymers by a combination of RAFT and living cationic polymerization <u>Misa Yamamoto</u> , Jin Motoyanagi, Masahiko Minoda .....	4365
11:40	3S07	Precision Polymerization of Thioglycoside-linked Glycopolymers without Using Protecting-group <u>Genri Inoue</u> , Tomonari Tanaka .....	4367

#### R. Sadamoto, presiding

12:55	3S08	Selective Oligosaccharide Sensing with Porphyrin-modified Curdlans in Aqueous Media <u>Mayuko Sasaki</u> , Gaku Fukuhara, Tadashi Mori, Yoshihisa Inoue.....	4369
13:20	3S09	Chiroptical properties of highly 1,6-glucose-branched $\beta$ -1,3-glucan studied by modification and complexation with chromophores <u>Koichi Tamano</u> , Gaku Fukuhara, Mie Iwamoto, Toshio Suzuki, Yoshihisa Inoue, Hiroshi Uyama .....	4371
13:45	3S10	Single molecule measurements of polysaccharides <u>Makoto Takemasa</u> , Masahiro Fujita, Mizuo Maeda .....	4373
14:10	3S11	Functionalization of Glucan Dendrimer for Bio-application <u>Shigeo Takeda</u> , Akiko Kubo, Shin-ichi Sawada, Kazunari Akiyoshi .....	4375

#### K. Hozumi, presiding

14:35	3S12	O-antigen selective labeling of Escherichia coli <u>Chizu Morisaki</u> , Yusuke Uemura, Reiko Sadamoto.....	4377
15:00	3S13	High functionalization of adipose-derived stem cell on PEG modified micropattern surface	

15:25	3S14	Yuka Kikuchi, Shuji Takahashi, <u>Keitaro Yoshimoto</u> ..... 4379 Design of an inactivated virus immobilized film for the construction of a biomimetic viral surface
		<u>Takaharu Okada</u> , Koichiro Uto, Mitsuhiro Ebara, Takao Aoyagi ..... 4381

<b>Room T</b>
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**Wednesday, September 11**

**Biopolymers and Biorelated Polymers**

**M. Oka, presiding**

10:00	1T03	Molecular Design of Polythioglycine Satoshi Uzawa, <u>Yuji Sasanuma</u> ..... 4383
10:25	1T04	Generation of higher-order structure of polypeptides by dynamic exchange of their side-chain thioester groups in water <u>Hisanori Shibasaki</u> , Akio Takahashi, Toshiyuki Oyama ..... 4385

**Y. Sasanuma, presiding**

10:50	1T05	Theoretical conformation analysis of periodic polypeptides composed of Pro, Gly and Ala residues using molecular dynamics simulations Koji Inai, Yoshiaki Hirano, <u>Masahito Oka</u> ..... 4387
11:15	1T06	What is the molecular weight of natural spider silk ? <u>Shigeyoshi Osaki</u> , Takashi Matsuhira ..... 4389
11:40	1T07	The molecular weight of spider silk was much larger than the previous ones <u>Takashi Matsuhira</u> , Shigeyoshi Osaki ..... 4391

**Y. Nakazawa, presiding**

12:55	1T08	Production of silk proteins containing unnatural amino acids by transgenic silkworms <u>Hidetoshi Teramoto</u> , Katsura Kojima ..... 4393
13:20	1T09	Calcium carbonate synthesis with a multifunctional $\beta$ -sheet peptide inspired by biomineralization <u>Kazuki Murai</u> , Masahiro Higuchi, Takatoshi Kinoshita, Kenji Nagata, Katsuya Kato ..... 4395
13:45	1T10	A Novel Approach for Protein Crystallization by Semi-Solid Hydrogels <u>Shigeru Sugiyama</u> , Noriko Shimizu, Gen Sazaki, Mika Hirose, Yoshinori Takahashi, Mihoko Maruyama, Hiroyoshi Matsumura, Hiroaki Adachi, Kazufumi Takano, Satoshi Murakami, Tsuyoshi Inoue, Yusuke Mori, ..... 4397
14:10	1T11	Construction of solid materials immobilizing enzymes by in vivo crystal engineering <u>Hashiru Negishi</u> , Satoshi Abe, Hajime Mori, Takafumi Ueno ..... 4399

**T. Muraoka, presiding**

14:35	1T12	Effect of compartment size on the directed evolution of $\beta$ -glucuronidase <u>Takehiro Nishikawa</u> , Takeshi Sunami, Tomoaki Matsuura, Testuya Yomo ... 4401
15:00	1T13	Development of an enzyme-responsive supramolecular gelator having cytotoxicity selective to cancer cells <u>Akiko Tanaka</u> , Yuki Fukuoka, Takafumi Honjo, Daisuke Koda, Masahiro Goto, Tatsuo Maruyama ..... 4403

15:25	1T14	Reconstitution of photosynthetic antenna/pigment complexes using recombinant light-harvesting membrane polypeptides bearing hydrophilic domains <u>Shunsuke Sakai</u> , Tomoyasu Noji, Toshihisa Mizuno, Masaharu Kondo, Toshiki Tanaka, Takehisa Dewa, Mamoru Nango .....	4405
<b>S. Abe, presiding</b>			
15:50	1T15	Development of proteoliposomes using cell-free protein synthesis system <u>Minato Akiyama</u> , Shun Shikura, Shin-ichi Sawada, Yoshihiro Sasaki, Kazunari Akiyoshi .....	4407
16:15	1T16	Development of Functional Membrane-Embedded Molecules <u>Takahiro Muraoka</u> , Takahiro Endo, Kazuhito Tabata, Hiroyuki Noji, Kazushi Kinbara .....	4409
16:40	1T17	Structure-Activity Relationship between Mn-porphyrin/Polyampholyte Complexes and Catalase Activity <u>Riku Kubota</u> , Shoichiro Asayama, Hiroyoshi Kawakami .....	4411
<b>T. Maruyama, presiding</b>			
17:05	1T18	Dynamic transformations of sulfobetain block copolymer <u>Nobuyuki Morimoto</u> , Kanna Muramatsu, Tetsuichi Wazawa, Makoto Suzuki .....	4413
17:30	1T19	New calcium sensors toward real-time measurement of biological events <u>Fumitaka Ishiwari</u> , Hanako Hasebe, Takao Someya, Takanori Fukushima .....	4415
17:55	1T20	Preparation and characterization of a collagen fibril-GAG complex gel <u>Kwangwoo Nam</u> , Tsuyoshi Kimura, Akio Kishida .....	4417

## Thursday, September 12

### Biopolymers and Biorelated Polymers

#### A. Kikuchi, presiding

9:10	2T01	Development and bioactivity evaluation of mesoporous silica nanoparticle-loaded PICsomes designed for adsorption of low molecular-weight drugs <u>Akinori Goto</u> , Yasutaka Anraku, Akihiro Kishimura, Kazunori Kataoka ...	4419
9:35	2T02	Functionalization of polyion complex (PIC) vesicle through chemical modification of its PIC-layer <u>So Kakiyama</u> , Yasutaka Anraku, Akihiro Kishimura, Kazunori Kataoka...	4421
10:00	2T03	Construction of polyplex micelle retaining protective layer on the core surface: Formation of thermoresponsive hydrophobic layer and its effect on stability <u>Shigehito Osawa</u> , Shigehiro Hiki, Kensuke Osada, Takehiko Ishii, Kazunori Kataoka .....	4423
10:25	2T04	Control of hierarchical structures of collagen gels with multi-channel structures <u>Kazuya Furusawa</u> , Yohei Hanazaki, Jun-ichi Masumoto, Hiromi Machino, Akimasa Fukui, Naoki Sasaki .....	4425

#### T. Kida, presiding

10:50	2T05	Cell differentiation therapy by the novel biodegradable nanoparticles to control epigenetics modification <u>Yutaro Asaba</u> , Shoichiro Asayama, Kazuhiko	
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11:15	2T06	Nakabayashi,Hiroyoshi Kawakami ..... 4427 Characterization of PIC type gene carrier composed of [2-armed-PEG]-block-PAsp(DET) copolymer and pDNA <u>Taisuke Endo</u> ,Takehiko Ishii,Kensuke Osada,Keiji Itaka,Kazunori Kataoka ..... 4429	4427
11:40	2T07	Development of polyion complexes incorporating single siRNA molecule by fine-tuning of block copolymers <u>Kotaro Hayashi</u> ,Hiroyuki Chaya,Sumiyo Watanabe,Kanjiro Miyata,Shigeto Fukushima,Kensuke Osada,Nobuhiro Nishiyama,Kazunori Kataoka ..... 4431	4431
<b>H. Kawakami, presiding</b>			
12:55	2T08	Electrospun Zeolite Composite Fibers for the Adsorption of Uremic Toxins <u>Koki Namekawa</u> ,Makoto Tokoro,Mitsuhiro Ebara,Takao Aoyagi ..... 4433	4433
13:20	2T09	A Phenylboronate Gel for Controlled Insulin Delivery <u>Akira Matsumoto</u> ,Hiroko Xmatsumoto,Takehiko Ishii,Kazunori Kataoka,Takahiro Suganami,Miyako Tanaka,Yoshihiro Ogawa,Yuji Miyahara ..... 4435	4435
13:45	2T10	Preparation of thermoresponsive polystyrene monolithic capillaries for separation behavior of bioactive compounds <u>Takuya Koriyama</u> ,Kazumi Sakamoto,Taka-aki Asoh,Akihiko Kikuchi.... 4437	4437
14:10	2T11	Functionalization of organic nanotube for drug delivery <u>Wuxiao Ding</u> ,Mitsutoshi Masuda,Naohiro Kameta..... 4439	4439
<b>A. Matsumoto, presiding</b>			
14:35	2T12	Construction of intracellular CO releasing proteins <u>Kenta Fujita</u> ,Hiroshi Inaba,Nusrat Sanghamitra,Satoshi Abe,Susumu Kitagawa,Takafumi Ueno ..... 4441	4441
15:00	2T13	Preparation and characterization of hybrid vector formed from nanofiber polyplex and lipofectamine <u>Ryuta Aono</u> ,Kenta Nomura,Eiji Yuba,Atsushi Harada,Kenji Kono..... 4443	4443
15:25	2T14	Preparation of temperature-responsive molecular assemblies using oligoethylene glycol-attached polyamidoamine dendron lipids <u>Yuji Hirai</u> ,Eiji Yuba,Atushi Harada,Kenji Kono ..... 4445	4445
15:50	2T15	Development of PLGA-PEG-PLGA/clay nanocomposite hydrogels exhibiting temperature-responsive sol-gel transition as local delivery carriers for protein drugs <u>Hiromasa Minami</u> ,Tomoki Maeda,Makoto Miyazaki,Naho Oyama,Kazunori Toma,Atsushi Hotta,Koji Nagahama..... 4447	4447
<b>K. Kono, presiding</b>			
16:15	2T16	Fabrication of high-density collagen fibril matrix gels by renaturation of triple-helix collagen from gelatin <u>Shunji Yunoki</u> ,Yoshimi Ohyabu,Hirosuke Hatayama ..... 4449	4449
16:40	2T17	Evaluation of uncleaved gelatin as a potential carrier for cell transportation <u>Hirosuke Hatayama</u> ,Yoshimi Ohyabu,Shunji Yunoki ..... 4451	4451
17:05	2T18	Development of nanogel-cross-linked microspheres by emulsion technique <u>Yoshiro Tahara</u> ,Masashi Tsuda,Sada-atsu Mukai,Shin-ichi Sawada,Kazunari Akiyoshi..... 4453	4453

**Friday, September 13**



## Biopolymers and Biorelated Polymers

### H. Uyama, presiding

9:10	3T01	Design and function of new polysaccharide-based nanogels with click reaction <u>Toshihiko Okadera</u> , Tomoki Nishimura, Shin-ichi Sawada, Kazunari Akiyoshi.....	4455
9:35	3T02	Development of silk fibroin based wound dressing for skin regeneration <u>Kasumi Kitayama</u> , Yasumoto Nakazawa, Atsunori Baba, Shigeto Matsushita, Takuro Kanekura, Tetsuo Asakura .....	4457
10:00	3T03	Components assembly through electrophoretic hydrogel adhesion to construct three dimensional materials <u>Taka-aki Asoh</u> , Akihiko Kikuchi .....	4459
10:25	3T04	Regulation of cell attachment using polymer substrates with different intermediate water contents <u>Takashi Hoshiba</u> , Kazuhiro Sato, Masaru Tanaka .....	4461

### M. Gemmei, presiding

10:50	3T05	Development of multifunctional cell separating system using thermoresponsive copolymer brush surfaces <u>Yuri Hatakeyama</u> , Kenichi Nagase, Tatsuya Shimizu, Naoya Takeda, Teruo Okano.....	4463
11:15	3T06	Control of cell adhesion and detachment on temperature-responsive block copolymer Langmuir-Schaefer substrates <u>Morito Sakuma</u> , Yoshikazu Kumashiro, Masamichi Nakayama, Nobuyuki Tanaka, Kazuo Umemura, Masayuki Yamato, Teruo Okano .....	4465
11:40	3T07	New facile method for preparing temperature-resopnsive cell culture surfaces using a thioxantone based photoinitiator immobilized polystyrene surface <u>Kazuhiro Fukumori</u> , Yoshikatsu Akiyama, Kazuyoshi Itoga, Masayuki Yamato, Teruo Okano.....	4467

### A. Kishida, presiding

12:55	3T08	Simultaneous control of diameter and ligand density on platinum-incorporated polymeric micelles and their antitumor efficacy against glioblastoma <u>Naoki Yamada</u> , Yutaka Miura, Jooyeon Ahn, Horacio Cabral, Nobuhiro Nishiyama, Kazunori Kataoka .....	4469
13:20	3T09	Evaluation of Gene Transfection Activity and Intracellular Trafficking of Polyamine-Lipid Conjugates <u>Yugo Urita</u> , Yosuke Okita, Kosuke Shimizu, Tomohiro Asai, Naoto Oku, Mamoru Nango, Takehisa Dewa .....	4471
13:45	3T10	Development of the small-diameter vascular grafts based on silk fibroin <u>Yasumoto Nakazawa</u> , Derya Aytemiz, Youko Fujita, Yoshihide Takagi, Makoto Haga, Satoshi Yamamoto, Hiroyuki Okamoto, Yusuke Kobayashi, Toshiharu Fukayama, Ryo Tanaka, Tetsuo Asakura .....	4473
14:10	3T11	Inhibition of Angiogenesis by Antioxidant Micelles <u>Masaki Moriyama</u> , Stephanie Metzger, Martin Ehrbar, Eiko Mochizuki, Andre J. Van Der Vlies, Hiroshi Uyama, Urara Hasegawa ..	4475

### K. Fukumori, presiding

14:35	3T12	Development of Drug-Navigated Clearance System for metabolic	
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		abnormality <u>Atsushi Mahara</u> , Kousuke Atari, Yuichi Ohya, Tetsuji Yamaoka.....	4477
15:00	3T13	Fabrication of Perfusable 3D-Blood Capillary Models by Cell-Accumulation Technique and Their Application for Permeability Assays	
15:25	3T14	<u>Daichi Hikimoto</u> , Akihiro Nishiguchi, Michiya Matsusaki, Mitsuru Akashi....	4479
		Construction of 3D-Tumor Invasion and Metastasis Models with Blood- and Lymph-Capillary Networks by Cell-Accumulation Technique	
		<u>Akihiro Nishiguchi</u> , Michiya Matsusaki, Mitsuru Akashi .....	4481

<b>Room U</b>
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**Wednesday, September 11**

**Hierarchical Dynamics of Biopolymers**

10:15	1US0	Introductory Remarks <u>Yoshiko Miura</u> .....	4633
		<b>T. Oya, presiding</b>	
10:25	1U04	Molecular design of membrane-targeting antimicrobial agents and their action mechanism <u>Kazuma Yasuhara</u> , Koyo Kusud, Manami Tsukamoto, Jun-ichi Kikuchi....	4634
10:50	1U05	Control of dynamics of lipid nanotubes by using external field <u>Yoshihiro Sasaki</u> , Shin-Ichi Sawada, Kazunari Akiyoshi.....	4636
11:15	1U06	Dynamic and Functions of Layer- by-Layer Nanofilms Prepared on Cell Membrane <u>Takashi Yoshikai</u> , Michiya Matsusaki, Tomofumi Uto, Mitsuru Akashi ....	4638
11:40	1U07	Control of function of lipid bilayer by polycation-peptide complex <u>Hirota Kinoshita</u> , Naohiko Shimada, Atsushi Maruyama .....	4640
		<b>Y. Hoshino, presiding</b>	
12:55	1U08	Dynamics of protein molecules in aqueous solution investigated by neutron spin echo <u>Hitoshi Endo</u> , Atsushi Matsumoto, Hironari Kamikubo, Mikio Kataoka....	4642
13:20	1U09	Molecular mapping of the interface bearing glycolipid-raft using the tip modified with verotoxin <u>Toshiaki Mori</u> , Shohei Koizumi, Yumi Tsuyuki .....	4644
13:45	1U10	One-pot Synthesis of IPN-Type Injectable Hydrogel from Self-assembled peptide and Polysaccharide <u>Daisuke Matsukuma</u> , Masako Nagamura, Chihiro Takahashi, Hidenori Otsuka .....	4646
		<b>Y. Miura, presiding</b>	
14:10	1U11IL	High-speed AFM for directly visualizing biomolecular dynamics <u>Toshio Ando</u> .....	4648
		<b>T. Mori, presiding</b>	
15:00	1U13	Application of Structured PEGs for Manipulation of Proteins <u>Kazushi Kinbara</u> .....	4651
15:25	1U14	Protein Adsorption on the Surfaces Modified by Polyglycerol Dendrimers, Dendrons, and Poly(ethylene glycol)s <u>Tooru Ooya</u> , Yoshiki Miachi, Kentaro Okada, Toshifumi Takeuchi .....	4653

15:50	1U15	Development of biosensor for visualizing its conformational change of protein and its application for live cell <u>Satoshi Arai</u> ,Tetsuya Kitaguchi ..... 4655	4655
16:15	1U16	Design and construction of a novel biocompatible scaffold scavenging reactive oxygen species <u>Yutaka Ikeda</u> ,Hiromu Ito,Yukio Nagasaki..... 4657	4657
<b>K. Kinbara, presiding</b>			
16:40	1U17	Preparation and functions of temperature-responsive molecular assemblies using polyamidoamine dendron lipids <u>Kenji Kono</u> ,Yuji Hirai,Yuhei Yamamoto,Eiji Yuba,Atsushi Harada ..... 4659	4659
17:05	1U18	The unique dynamic behavior and function of polyion complex (PIC) vesicles <u>Yasutaka Anraku</u> ,Akihiro Kishimura,Kazunori Kataoka ..... 4661	4661
17:30	1U19	Dynamics of Physical Properties of Polysaccharide Composite Films in Aqueous Solutions <u>Mineo Hashizume</u> ,Masafumi Ohashi,Tomoko Numata,Yu Murata,Kazutoshi Iijima ..... 4663	4663
17:55	1U20	Preparation of temperature-dependent elastin-mimetic dendrimers and the application to the photothermal therapy <u>Chie Kojima</u> ,Kotaro Irie,Daichi Fukushima ..... 4665	4665

## Thursday, September 12

### Hierarchical Dynamics of Biopolymers

#### N. Yui, presiding

9:10	2U01	Affinity purification of the peptide-binding liner polymer <u>Yusuke Wada</u> ,Hejoo Lee,Yu Hoshino,Yoshiko Miura..... 4667	4667
9:35	2U02	Time-dependent sol transition of hydrogels by cellulose nanofibers <u>Hiroki Fukuta</u> ,Toshiki Sawada,Takeshi Serizawa ..... 4669	4669
10:00	2U03	Enzymes-encapsulated virus-like particles (VLPs) as a nanoreactor <u>Naotoshi Sugimura</u> ,Kenichi Niikura,Kyoji Hagiwara,Hideyuki Mitomo,Takeharu Nagai,Hirofumi Sawa,Kuniharu Ijiro ..... 4671	4671
10:25	2U04	Design of selective cell separation surfaces based on water structure and dynamics of biopolymers <u>Masaru Tanaka</u> ,Shingo Kobayashi,Takashi Hoshiba,Kazuki Fukushima... 4673	4673

#### M. Tanaka, presiding

10:50	2U05	Inducing fast cellular response on the RGD-binding dynamic polyrotaxane surfaces <u>Nobuhiko Yui</u> ,Ji-hun Seo,Sachiro Kakinoki,Yuuki Inoue,Tetsuji Yamaoka,Kazuhiko Ishihara ..... 4675	4675
11:15	2U06	Preparation of tissue development-mimicking matrices and their application for regulation of stem cells differentiation <u>Guoping Chen</u> ,Rong Cai,Takashi Hoshiba,Naoki Kawazoe..... 4677	4677
11:40	2U07	Cell Adhesion Control on Polymeric Scaffolds with a Pattern of Mechanical Instability <u>Hiroki Komori</u> ,Hisao Matsuno,Yohei Kinoshita,Satoshi Fujimura,Keiji Tanaka ..... 4679	4679

#### K. Numata, presiding

12:55	2U08	Construction of cyclodextrin/rotaxane using ethylene glycol-DNA di-block oligomer <u>Mana Ishino</u> ,Takuya Sonoda,Akinori Kuzuya,Yuichi Ohya ..... 4681	4681
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13:20	2U09	The preparation of cell-penetrating peptide nano-fiber through dynamic equilibrium process and its application for the treatment of Alzheimer diseases <u>Nobuhiko Tsuchiya</u> , Sayaka Kumo, Naoki Tanaka ..... 4683	4683
13:45	2U10	Photo-fabrication of the peptide-based supramolecular hydrogel by two-photon excitation <u>Tatsuyuki Yoshii</u> , Masato Ikeda, Itaru Hamachi ..... 4685	4685
<b>Y. Miura, presiding</b>			
14:10	2U11IL	Membrane dynamics and Cellular Signal Transduction <u>Masahiro Takagi</u> ..... 4687	4687
<b>H. Matsuno, presiding</b>			
15:00	2U13	Design of highly sensitive linear probe having high stability with target DNA <u>Rie Niwa</u> , Mariko Akahane, Hiromu Kashida, Hiroyuki Asanuma ..... 4690	4690
15:25	2U14	Peptide-Mediated Delivery of Genes to the Mitochondria in Plant Cells <u>Jo-ann Chuah</u> , Keiji Numata ..... 4692	4692
15:50	2U15	Structure and Gene Transfer Activity of Polyamine-DNA Complex <u>Takehisa Dewa</u> , Yugo Urita, Yosuke Okita, Kosuke Shimizu, Tomohiro Asai, Naoto Oku, Mamoru Nango ..... 4694	4694
<b>I. Hamachi, presiding</b>			
16:15	2U16	Flow-stretching single-molecular observation of polycation/DNA interactions Gen Kai, Kouhei Yamasaki, Naotaka Sonda, Naohiko Shimada, Satoru Kidoaki, Masatoshi Maeshiro, Masaya Miyazaki, <u>Atsushi Maruyama</u> ..... 4696	4696
16:40	2U17	DNA Brush Layers: Terminal Dynamics and Surface Properties <u>Naoki Kanayama</u> , Tohru Takarada, Masahiro Fujita, Mizuo Maeda ..... 4698	4698
17:05	2U18	Synthesis and Interaction Behavior of Peptide Ribonucleic Acid (PRNA)-PNA-DNA Chimeras and Application to Expression Control of Genetic Information Ryohei Uematsu, Tatsuya Mizutani, Junpei Ariyoshi, Yasuyuki Araki, Seiji Sakamoto, Asako Yamayoshi, Akira Murakami, Hiromu Kashida, Hiroyuki Asanuma, <u>Takehiko Wada</u> ..... 4700	4700

## Friday, September 13

### Hierarchical Dynamics of Biopolymers

<b>K. Matsumura, presiding</b>			
9:10	3U01	Effects of synthesis condition on proton-imprinting effect used for synthesis of nano gels <u>Ryohei Ohashi</u> , Yu Hoshino, Yoshiko Miura ..... 4702	4702
9:35	3U02	Conformational Change and Responsive Behavior of Stimuli-Responsive Polypeptide Hydrogels That Recognize Target Molecules <u>Kazuya Matsumoto</u> , Akifumi Kawamura, Tadashi Uragami, Takashi Miyata ..... 4704	4704
10:00	3U03	Formation of Dynamic Molecular Recognition Sites in Hydrogels by Molecular Imprinting and Their Stimuli-responsive Protein-Recognition <u>Yoshiaki Kuriu</u> , Akifumi Kawamura, Tadashi Uragami, Takashi Miyata ... 4706	4706
<b>T. Miyata, presiding</b>			

10:25	3U04	Regulated interaction of biomolecules with thermoresponsive soft interfaces <u>Akihiko Kikuchi</u> ,Taka-aki Asoh..... 4708	4708
10:50	3U05	Mechanistic study on pDNA folding process into rod or globule structures within polyplex micelles -Kinetic based analysis on their structural formation processes- <u>Kaori Machitani</u> ,Kensuke Osada,Theofilus Tockary,Qixian Chen,Anjaneyulu Dirisala,Kazunori Kataoka ..... 4710	4710
11:15	3U06	Microtubular teardrop patterning and the growth process <u>Kosuke Okeyoshi</u> ,Ryuzo Kawamura,Ryo Yoshida,Yoshihito Osada.... 4712	4712
11:40	3U07	NMR study on silk structure in the hydrated state and water dynamics for application of silk to biomaterials <u>Koutarou Isobe</u> ,Haruka Shimokawatoko,Yu Suzuki,Boutis Gregory,Tetsuo Asakura ..... 4714	4714
<b>T. Wada, presiding</b>			
12:55	3U08	Observation of conformational changes of RNA strands by using a quartz crystal microbalance based on an admittance analysis <u>Hiroyuki Furusawa</u> ,Yumiko Haruhara,Aya Yoshida,Yoshio Okahata..... 4716	4716
13:20	3U09	Amphiphilic nanoparticles bearing ester functionality and its effect on the cellular uptake Kenya Kobayashi, <u>Kenichi Niikura</u> ,Chie Takeuchi,Shuko Takahara, Kyoji Hagiwara,Yoshihiro Ito,Yoshihito Osada,Kuniharu Ijro..... 4718	4718
13:45	3U10	cell surface modification of endocytic receptor enables efficient antigen protein delivery <u>Cuicui Li</u> ,Kyohei Tobinaga,Takeshi Mori,Yoshiki Katayama..... 4720	4720
14:10	3U11	Preparation and Characterization of DNA-conjugated Polymer Micelle <u>Masahiro Fujita</u> ,Mizuo Maeda ..... 4722	4722
<b>H. Furusawa, presiding</b>			
14:35	3U12	Formation and Function of hierarchical nano particles by naturally occurring ionic polysaccharide <u>Toshinori Sato</u> ,Kenji Hagiwara,Keisuke Koizumi,Takahiro Arai ..... 4724	4724
15:00	3U13	Supramolecular Enantiodifferentiating Photocyclodimerization of 2-Anthracenecarboxylate with Proteins and Protein-Polymer Hybrids as Chiral Reaction Medias-2 Sakie Minato,Noboru Okugi,Yasuyuki Araki,Seiji Sakamoto,Jinya Katamachi,Yutaka Ikeda,Masaki Nishijima,Yukio Nagasaki,Yoshihisa Inoue, <u>Takehiko Wada</u> ..... 4726	4726
15:25	3U14	Cell diagnostic on ligand-immobilized surface of cell rolling microchip <u>Atsushi Mahara</u> ,Hao Chen,Carlos Agudelo,Kazuhiko Ishihara,Tetsuji Yamaoka ..... 4728	4728

<b>Room V</b>
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**Wednesday, September 11**

**Development and Function of Nano Bioorganization**

9:50	1VSO	Introductory Remarks <u>Naoki Tanaka</u> ..... 4730	4730
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<b>T. Sawada, presiding</b>			
10:00	1V03	Investigation of dissolution mechanism and control of in vivo protein crystals <u>Satoshi Abe</u> , Hajime Mori, Takafumi Ueno ..... 4731	4731
10:25	1V04	Creation of Dress-up Viral Capsids <u>Kazunori Matsuura</u> , Takahide Honjo, Saki Yamada, Shoko Nishikawa ..... 4733	4733
<b>K. Matsuura, presiding</b>			
10:50	1V05	Design and construction of mesoscale organization by filamentous viruses <u>Toshiki Sawada</u> , Huanhuan Chen, Naoto Shirakawa, Takeshi Serizawa ..... 4735	4735
11:15	1V06	NMR Study of the TiO <sub>2</sub> Binding Peptide Introduced in Silk <u>Yu Suzuki</u> , Kiyotaka Shiba, Tetsuo Asakura ..... 4737	4737
11:40	1V07	Structure-Function relationship of Supramolecular Assembly of the Photosynthetic Antenna Complexes in Lipid Membranes <u>Takehisa Dewa</u> , Ayumi Sumino, Tomoyasu Noji, Mamoru Nango ..... 4739	4739
<b>K. Akiyoshi, presiding</b>			
12:55	1V08IL	Fabrication of Nano-structured Materials based on Self-organization of Peptide-mimetics <u>Nobuyuki Higashi</u> ..... 4741	4741
13:45	1V10	Relationship between membrane fusion activity and membrane structures of amphiphilic helical polypeptides <u>Cheol Joo Kim</u> , Motoki Ueda, Shunsaku Kimura ..... 4744	4744
<b>M. Ueda, presiding</b>			
14:10	1V11	Spontaneous construction of nano-scaled fiber arrays by two-dimensional self-assembly of amphiphilic peptides at the solid/water interface <u>Masayoshi Tanaka</u> , Takatoshi Kinoshita ..... 4746	4746
14:35	1V12	Systematic studies on the formation of beta-sheet from Fmoc-substituted charged oligopeptides <u>Toru Nakayama</u> , Akira Kaneko, Taro Sakuraba, Kentaro Tashiro, Yohei Yamamoto ..... 4748	4748
15:00	1V13	Synthesis and gelation property of barnacle underwater adhesive protein mimetic <u>Jin Nishida</u> , Yuji Higaki, Atsushi Takahara ..... 4750	4750
<b>Y. Hirano, presiding</b>			
15:25	1V14	Proteinase K-catalyzed synthesis of branched oligo(L-Phenylalanine) <u>Jose Manuel Ageitos</u> , Keiji Numata ..... 4752	4752
15:50	1V15	Controlled release of medicine from supramolecular hydrogel based on L-lysine-based hydrogelators <u>Ryosuke Ebina</u> , Masahiro Suzuki, Kenji Hanabusa ..... 4754	4754
16:15	1V16	Control of 3D-Cellular Organizations by Nano- or Micro-film Coatings on Cell Surfaces <u>Michiya Matsusaki</u> , Mitsuru Akashi ..... 4756	4756
<b>T. Dewa, presiding</b>			
16:40	1V17	Fabrication of Hybrid Scaffolds Consisting of Self-Assembling Elastin-Like Polypeptide and Gelatin <u>Ayae Sugawara-narutaki</u> , Duc H. T. Le, Shintaro Oshiro, Tatsuya Okubo .... 4758	4758
17:05	1V18	Design of self-assembling peptides for tissue engineering scaffold <u>Yoshiaki Hirano</u> , Hiroshi Hatano, Masahito Oka ..... 4760	4760

17:30	1V19	Correlation between protein-binding kinetics of nanogel particles and their chaperone-like function <u>Masahiko Nakamoto</u> , Yu Hoshino, Yoshiko Miura ..... 4762
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**Thursday, September 12**

**Development and Function of Nano Bioorganization**

**T. Morii, presiding**

10:00	2V03	Effect of cationic graft copolymers having ureido groups on DNA strand exchange reaction <u>Naohiko Shimada</u> , Wei Song, Atsushi Maruyama ..... 4764
10:25	2V04	Design of a completely artificial oligonucleotide as a super-sensitive fluorescent probe composed of only serinol scaffold <u>Keiji Murayama</u> , Yoshihiro Tanaka, Hiromu Kashida, Hiroyuki Asanuma .... 4766

**H. Asanuma, presiding**

10:50	2V05	An affinity between dectin-1 and beta 1,3 glucan/nucleic acid complex <u>Shohei Nagao</u> , Shinichi Mochizuki, Hiroto Izumi, Kimitoshi Kawano, Kazuo Sakurai ..... 4768
11:15	2V06	Efficient Preparation of Disc-like DNA Nanostructures based on DNA Sudare Design <u>Masafumi Kaino</u> , Shinya Minamida, Mirai Hashizume, Akinori Kuzuya, Yuichi Ohya ..... 4770
11:40	2V07	Arranging enzymes and receptors with nanometer-scale precision on molecular switchboards <u>Takashi Morij</u> ..... 4772

**A. Maruyama, presiding**

12:55	2V08	Development of polyplex micelles for systemic gene therapy of intractable tumors -Stealthiness and targeting moiety for pancreatic cancer <u>Kensuke Osada</u> , Qixian Chen, Theofilus Tockary, Satoshi Uchida, Keiji Itaka, Kazunori Kataoka ..... 4774
13:20	2V09	Biodegradable nanogels composed of oligo(lactide)-grafted polysaccharides collapsing under reductive condition for drug delivery by controlling intracellular traffics <u>Akihiro Takahashi</u> , Akinori Kuzuya, Yuichi Ohya ..... 4776

**T. Waku, presiding**

13:45	2V10	Regulation of liposome functions by polyion complex formation Atsushi Hirohama, Naohiko Shimada, <u>Atsushi Maruyama</u> ..... 4778
14:10	2V11	Dynamic Behavior in liposomes Induced by the Uptake of [70]Fullerene <u>Atsushi Ikeda</u> , Tomohiro Hida, Manami Tsukamoto, Kazuma Yasuhara, Jun-ichi Kikuchi ..... 4780

**K. Sakurai, presiding**

14:35	2V12	Direct observation of binding and decomposition behavior of chitin film catalyzed by chitinase Keisuke Shishido, Yuko Nakagawa, <u>Toshiaki Mori</u> ..... 4782
15:00	2V13	Construction of model composition of glycolipid cluster that induces amyloid-beta aggregation <u>Teruhiko Matsubara</u> , Ryoto Fukuda, Takahiro Kojima, Naoki Yamamoto, Katsuhiko Yanagisawa, Toshinori Sato ..... 4784

**T. Sato, presiding**

15:25	2V14	Preparation of nano-carrier which is fused with cholesterol modified polysaccharide and beta-1,3-Gulucan <u>Yoshiya Maegawa</u> ,Shinichi Mochizuki,Yusuke Sanada,Kazunari Akiyoshi,Kazuo Sakurai.....	4786
15:50	2V15	Amylose Engineering: Enzymatic Synthesis of Novel Hybrid Saccharide Materials and its biomedical applications <u>Tomoki Nishimura</u> ,Masahiro Takara,Sada-atsu Mukai,Shin-Ichi Sawada,Kazunari Akiyoshi.....	4788
<b>A. Harada, presiding</b>			
16:15	2V16	Biomolecular-binding and biomolecular-nonbinding surfaces using dendric polymer as platform <u>Hirokazu Seto</u> ,Yuki Koujima,Yu Hoshino,Yoshiko Miura.....	4790
16:40	2V17	Organocatalytic ring-opening transesterification polymerization via hydrogen bonding activation in developing functional biomaterials <u>Kazuki Fukushima</u> ,Yuto Inoue,Takayuki Ota,Kohei Kishi,Shunsuke Sato,Kodai Matsuzaki,Masaru Tanaka .....	4792

## Friday, September 13

### Development and Function of Nano Bioorganization

#### T. Wada, presiding

9:10	3V01	Morphological Control of Polyplexes by Crowding Effect of Multi-arm PEG <u>Atsushi Harada</u> ,Ryuta Aono,Eiji Yuba,Kenji Kono .....	4794
9:35	3V02	Preparation of organic-inorganic hybrid material with chiral properties using cellulose derivative <u>Yuki Tsukasaki</u> ,Tomoki Ogoshi,Tada-aki Yamagishi,Akihiko Takada ..	4796
10:00	3V03	Dynamic control of the array structure of gold nanoparticles through expansion and shrinkage of the hydrogel <u>Kenta Horie</u> ,Hideyuki Mitomo,Guoqing Wang,Yasutaka Matsuo, Kenichi Niikura,Takeharu Tani,Masayuki Naya,Kuniharu Ijiro .....	4798

#### K. Ijiro, presiding

10:25	3V04	Dispersing Carbon Nanotubes by Phospholipids Yu-uki Sato, <u>Masahito Sano</u> .....	4800
10:50	3V05	Preparation of pH-responsive vesicles using polyamidoamine dendron lipids and control of intracellular delivery <u>Kenji Kono</u> ,Yoshikatsu Sugahara,Eiji Yuba,Atsushi Harada.....	4802

#### K. Kono, presiding

11:15	3V06	Development of the time-resolved circular dichroism spectroscopy measurement system with high sensitivity for structure change detection of biomolecules - Analysis of the interaction Dynamics of dsDNA - Cationic Porphyrin Complex - Makoto Murakami,Yasuyuki Araki,Tadashi Mori,Tomoo Miyahara,Masayuki Hasegawa,Katsuji Hasegawa,Hiroshi Nakatsuji,Yoshihisa Inoue, <u>Takehiko Wada</u> .....	4804
11:40	3V07	dectin-1 targeting oligonucleotide delivery to cure immune disorder <u>Kazuo Sakurai</u> ,Shinichi Mochizuki .....	4806



**Room W**

**Wednesday, September 11**

**Biomedical Polymers for Future Medicine**

9:50	1WSO	Introductory Remarks <u>Yasuhiko Iwasaki</u> , Shoichiro Asayama .....	4808
<b>S. Asayama, presiding</b>			
10:00	1W03	Systemically injectable three-layered polymeric micelle for light-induced gene transfection <u>Takahiro Nomoto</u> , Shigeto Fukushima, Michiaki Kumagai, Kaori Machitani, Yu Matsumoto, Makoto Oba, Kanjiro Miyata, Kensuke Osada, Nobuhiro Nishiyama, Kazunori Kataoka .....	4809
10:25	1W04	Development of cytoplasmic drug delivery system using peptide nanospheres which drastically change surface structures at intracellular reduction condition <u>Masahiro Matsumoto</u> , Michiya Matsusaki, Mitsuru Akashi .....	4811
10:50	1W05	Formulation of hybrid exosome for DDS <u>Shin-ichi Sawada</u> , Jun-ichi Yasuoka, Yuko Sato, Kazunari Akiyoshi....	4813
<b>Y. Iwasaki, presiding</b>			
11:15	1W06	Initial cellular responses at artificial adsorbed protein layer <u>Yuuki Inoue</u> , Yuya Onodera, Kazuhiko Ishihara .....	4815
11:40	1W07	Sandwich culture of mesenchymal stem cells with biofunctional hydrogels <u>Hiroyuki Toda</u> , Masaya Yamamoto, Yasuhiko Tabata .....	4817
<b>K. Kono, presiding</b>			
12:55	1W08	Hydrophobically modified linear PEI-peptide conjugate showing enhanced cellular uptake and transgene regulation for a clear-cut response to cancer signaling <u>Chan Woo Kim</u> , Takeshi Mori, Akihiro Kishimura, Yoshiki Katayama...	4819
13:20	1W09	Evaluation of Phenylboronate-Functionalized Polymeric Micelle for Intracellular ATP-Triggered Release of siRNA <u>Mitsuru Naito</u> , Takehiko Ishii, Akira Matsumoto, Kanjiro Miyata, Yuji Miyahara, Kazunori Kataoka .....	4821
13:45	1W10	Synthesis and pharmacokinetic property of polyion complex vesicles with tunable size and ligand amount on their surface <u>Wataru Kawamura</u> , Yasutaka Anraku, Akihiro Kishimura, Yutaka Miura, Kazunori Kataoka .....	4823
<b>T. Mori, presiding</b>			
14:10	1W11	A novel cancer vaccine using CpG-DNA/SPG complex <u>Shinichi Mochizuki</u> , Hiromi Morishita, Kazuo Sakurai .....	4825
14:35	1W12	Preparation of antigen delivery system based on pH-sensitive polymers and their function for induction of antitumor immunity <u>Eiji Yuba</u> , Yuhei Kanda, Ayaka Yamaguchi, Kikuya Sugiura, Hiroshi Hayashi, Atsushi Harada, Kenji Kono .....	4827
15:00	1W13	Gold Nanoparticles as a Vaccine Platform: The shape and size Dependency of Immunological Responses <u>Kenichi Niikura</u> , Tatsuya Matsunaga, Tadaki Suzuki, Shintaro Kobayashi, Hiroki Yamaguchi, Yasuko Orba, Akira	

		Kawaguchi,Hideki Hasegawa,Kiichi Kajino,Takafumi Ninomiya,Hirofumi Sawa,Kuniharu Ijro, .....	4829
		<b>M. Tanaka, presiding</b>	
15:25	1W14	Specific protein recognition on molecular-integrated surface constructed with photoreactive phospholipid polymer <u>Kyoko Fukazawa</u> ,Kazuhiko Ishihara .....	4831
15:50	1W15	Clarification of action mechanism of chimeric protein immobilized to materials and application of protein-immobilized biomaterial to regenerative medicine <u>Tadashi Nakaji-hirabayashi</u> ,Kurumi Fujimoto,Saki Furukawa,Hiroimi Kitano,Yuuki Inoue,Kazuhiko Ishihara .....	4833
16:15	1W16	Synthesis of Photo-responsive Polymer Films with Micropatternable Surfaces and Their Applications as Smart Biomaterials <u>Tomoyuki Kida</u> ,Akifumi Kawamura,Tadashi Uragami,Takashi Miyata...	4835
		<b>T. Miyata, presiding</b>	
16:40	1W17	Development of cell delivery system directed by micropatterned polymeric nanosheets <u>Toshinori Fujie</u> ,Yoshihiro Mori,Shuntaro Ito,Nobuhiro Nagai,Matsuhiko Nishizawa,Toshiaki Abe,Ali Khademhosseini,Hirokazu Kaji.....	4837
17:05	1W18	Improvements in function and handling of temperature-responsive biodegradable injectable polymers <u>Yasuyuki Yoshida</u> ,Akihiro Takahashi,Akinori Kuzuya,Yuichi Ohya ...	4839
17:30	1W19	Enhancement of cell sheet fabrication and maintenance of cell sheet function using heparin-functionalized thermoresponsive cell culture surface <u>Jun Kobayashi</u> ,Yoshinori Arisaka,Kazuo Ohashi,Kohei Tatsumi,Kyungsook Kim,Yoshikatsu Akiyama,Masayuki Yamato,Teruo Okano .....	4841
17:55	1W20	Preparation of thermosensitive cell culture surface using hyperbranched polymer and application to bioengineering <u>Yu Sudo</u> ,Yuta Nabae,Teruaki Hayakawa,Masa-aki Kakimoto .....	4843

## Thursday, September 12

### Biomedical Polymers for Future Medicine

		<b>T. Mori, presiding</b>	
9:10	2W01	Synthesis and characterization of Eu-bearing star polymer that enables simultaneous detection of cancer and X-ray sensitizing therapy <u>Tsuyoshi Ando</u> ,Kusumaatmaja Ahmad,Kayo Terada,Mime Kobayashi,Shiho Hirohara,Masao Tanihara .....	4845
9:35	2W02	Design of binding growth factors with bioorthogonal chemistry and evolutionary molecular engineering <u>Seiichi Tada</u> ,Takashi Kitajima,Yoshihiro Ito .....	4847
10:00	2W03	PEGylated nanocarriers for DDS generate PEG-related antibodies and the antibodies affect pharmacokinetics of the carriers <u>Koichi Shiraishi</u> ,Kumi Kawano,Yoshie Maitani,Taiki Aoshi,Ken Ishii,Masayuki Yokoyama .....	4849
10:25	2W04	Design of TiO <sub>2</sub> Nanoparticles-incorporated Polyion Complex Micelles for Sonodynamic Therapy <u>Atsushi Harada</u> ,Satoshi Yamamoto,Masafumi Ono,Eiji Yuba,Kenji	

		Kono.....	4851
		<b>K. Sumaru, presiding</b>	
10:50	2W05	Architectural Factors of Dendritic, Cyclic and Linear Polyglycerols on Transdermal Drug Adsorption <u>Tooru Ooya</u> , Kentaro Okada, Toshifumi Takeuchi, Masahiro Hamada, Noriyuki Nakajima .....	4853
11:15	2W06	Hydrophilized Interface by Dynamic Molecular Motion of Polymer Chains for Wound Dressing <u>Junji Watanabe</u> , Akira Furukawa .....	4855
11:40	2W07	Potential of medical polymer thin films 'Nano-Adhesive Plasters' as an innovative material for future medicine <u>Shinji Takeoka</u> , Akihiro Saito.....	4857
		<b>A. Harada, presiding</b>	
12:55	2W08	Development of cardiac repair patch from mixed Bombyx mori silk fibroin and polyurethane <u>Toshiki Saotome</u> , Yasumoto Nakazawa, Mari Sugimoto, Kouta Sakura, Toshihide Tsukatani, Shintaro Nemoto, Tetsuo Asakura.....	4859
13:20	2W09	Real-time single particle analysis of fluorescent nanothermometers reveals the temperature dependent activity and activity dependent thermogenesis in single HeLa cell <u>Madoka Suzuki</u> , Satoshi Arai, Atsushi Murata, Kotaro Oyama, Masao Takabayashi, Yoshiaki Takei, Shin'ichi Ishiwata, Shinji Takeoka .....	4861
13:45	2W10	Cationic comb-type copolymer boosting DNAzyme catalyzed RNA cleavage reaction <u>Jueyuan Gao</u> , Atsushi Maruyama, Naohiko Shimada.....	4863
		<b>A. Maruyama, presiding</b>	
14:10	2W11	Anti-oxidative Stress and Redox Polymer Therapeutics <u>Yukio Nagasaki</u> .....	4865
14:35	2W12	Drug development for bladder cancer based on BCG-component incorporating nanoparticle Hideyoshi Harashima, <u>Takashi Nakamura</u> , Hideyuki Akaza, Ikuya Yano .....	4867
15:00	2W13	SPECT imaging of solid tumors by In-labeled A3B-type lactosome as theranostic agent <u>Motoki Ueda</u> , Kaori Togashi, Eiichi Ozeki, Shunsaku Kimura .....	4869
		<b>Y. Ohya, presiding</b>	
15:25	2W14	Selective hydrolyzation of denatured proteins by cellulose nanofibers <u>Hiromichi Okura</u> , Mizuho Yamaguchi, Toshiki Sawada, Takeshi Serizawa .....	4871
15:50	2W15	Preparation of UCST-type hydrogels <u>Naohiko Shimada</u> , Atsushi Maruyama .....	4873
16:15	2W16	Biodegradable multiblock copolymers for the recovery of cardiac function <u>Shota Somekawa</u> , Atsushi Mahara, Yoshiharu Kimura, Tetsuji Yamaoka.....	4875
		<b>Y. Iwasaki, presiding</b>	
16:40	2W17IL	Design and function of bio-nanotransporter <u>Kazunari Akiyoshi</u> .....	4877

**Friday, September 13**

**Biomedical Polymers for Future Medicine**

**K. Miyata, presiding**

- 9:10 3W01 In vivo Gene Delivery System by use of Alkylated-imidazolium-terminal PEG for Unimolecular Modification of plasmid DNA  
Atsushi Nohara, Shoichiro Asayama, Yoichi Negishi, Hiroyoshi Kawakami..... 4880
- 9:35 3W02 Effect of polymer architecture on the complex formation with DNA through intercalation  
Hirofumi Fujikura, Riichi Takahashi, Daisuke Matsukuma, Hidenori Otsuka ..... 4882
- 10:00 3W03 Evaluation of Polysaccharide Composite Films as Drug Delivery Carriers  
Yu Murata, Kazutoshi Iijima, Mineo Hashizume..... 4884
- 10:25 3W04 Preparation and characterization of core-corona type of polymeric nanoparticles by free radical ring opening polymerization  
Takahito Nakajima, Taka-aki Asoh, Akihiko Kikuchi..... 4886

**T. Yamaoka, presiding**

- 10:50 3W05 Shape-Persistent Calix[4]arene Micelle Bearing Choline Phosphate: Study of the Structure and Interaction with a Biomembrane Model  
Shota Fujii, Kazuo Sakurai, Atsushi Takahara..... 4888
- 11:15 3W06 Fabrication of Biodegradable Polymer Nanosheets with Various Size and Their Biomedical Applications  
Yosuke Okamura, Thorsten Lang, Shinji Takeoka..... 4890
- 11:40 3W07 Preparation and application of polymer nanosheets containing phosphorylcholine group  
Yu Nagase, Yosuke Okamura, Kohei Asao, Kohei Morita, Wariya Sirithep ... 4892

**M. Matsusaki, presiding**

- 12:55 3W08 Feeder-free dissociated culture of iPS cells on the laminin-fixed elasticity-tunable gelatinous gels  
Ayaka Utsumi, Tatsuya Okuda, Hiroshi Endo, Tomo Koike, Koji Eto, Satoru Kidoaki ..... 4894
- 13:20 3W09 Processing of human iPS colonies by light on PAG-polymer-functionalized culture substrates  
Kimio Sumaru, Kana Morishita, Toshiyuki Takagi, Taku Satoh, Shigenori Ozaki, Ken'ichi Kagawa, Yusuke Yoda, Toshiyuki Kanamori..... 4896
- 13:45 3W10 Coacervate showing suppression functions of platelet adhesion  
Motomi Sugiyama, Kazuhisa Naka, Junji Yanagisawa, Takashi Aoki.... 4898
- 14:10 3W11 High chain density coatings by star polymers on artificial organ materials resistant to platelet and bacteria adhesion  
Masayasu Totani, Tsuyoshi Ando, Chuanwu Xi, Kayo Terada, Mime Kobayashi, Kenichi Kuroda, Masao Tanihara..... 4900

**J. Kobayashi, presiding**

- 14:35 3W12 Development of cell-injectable scaffolds by controlling the sol-gel transition and chain-extension of polylactide-b-poly(ethylene glycol)  
Yui Hsu, Kazunari Masutani, Tetsuji Yamaoka, Yoshiharu Kimura..... 4902
- 15:00 3W13 Platforms for Whole Blood Peptide Testing: Facilitated Depletion of Inhibitory Contaminant Proteins and Unexpected Application of Them  
Yukiko Tenokuchi, Hiroyuki Kabata..... 4904

15:25	3W14	Side-chain modified biodegradable polycarbonates for application in cell selective scaffolds <u>Kazuki Fukushima</u> , Yuto Inoue, Masaru Tanaka ..... 4906
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<b>Room X</b>
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**Wednesday, September 11**

**A New Era in Research and Development of Bioplastics**

9:50	1XSO	Introductory Remarks <u>Ken-ichi Kasuya</u> ..... 4994
		<b>H. Abe, presiding</b>
10:00	1X03	Biodegradability and chemical synthesis of polyester containing oxabicyclic moiety derived from fufural <u>Yuya Tachibana</u> , Masayuki Yamahata, Saori Kimura, Ken-ichi Kasuya.... 4995
10:25	1X04	Synthesis of Novel Bio-Based Polymer by Ring-Opening Radical Polymerization of Pinocarvone Derived from Naturally-Occurring $\alpha$ -Pinene <u>Hisanari Miyaji</u> , Kotaro Satoh, Masami Kamigaito..... 4997
10:50	1X05	Polarimetry-controlled fluorescence in LC polymers from bio-based aromatic amino acid <u>Kai Kan</u> , Seiji Tateyama, Tatsuo Kaneko ..... 4999
		<b>I. Taniguchi, presiding</b>
11:15	1X06	Synthesis of bio-based polyester using biomass monomer derived from vanillin <u>Koichiro Tachibana</u> , Hideki Abe ..... 5001
11:40	1X07	Development of bio-based acrylic resins from bio-based polyesters by chemical recycle <u>Yasumasa Takenaka</u> , Hideki Abe ..... 5003
12:55	1X08	Improvement of Biomass Plastics Properties by Branched Poly(lactic acid) <u>Hiroshi Uyama</u> , Nao Hosoda, Yoshimi Haza, Shumpei Nishio, Eun-hye Lee, Takashi Tsujimoto ..... 5005
13:20	1X09	Morphology of Poly(lactic acid) Stereocomplex/Silica Hybrid Films <u>Yuki Ohsawa</u> , Kenta Uchida, Yuichiro Koide, Hiroki Ikake, Masako Takada, Yoshio Muroga, Kimio Kurita, Shigeru Shimizu ..... 5007
		<b>Y. Tachibana, presiding</b>
13:45	1X10	Effect of Cast-solvent on the Morphology of Mixtures of Stereoisomeric Poly(lactic acid)s <u>Yuichiro Koide</u> , Yuki Ohsawa, Tomoyo Ogishima, Hiroki Ikake, Yoshio Muroga, Kimio Kurita, Shigeru Shimizu ..... 5009
14:10	1X11	Stereocomplexation in the Electro-spun PLLA/PDLA Blend Nano Fibers <u>Masaki Yamamoto</u> , Goro Nishikawa, Amalina Muhammad Afifi, Hideki Yamane ..... 5011
14:35	1X12	Synthesis and characterization of multi-stereoblock polylactides having urethane bonds <u>Kazunari Masutani</u> , Chan Woo Lee, Yoshiharu Kimura..... 5013
15:00	1X13	Stereocomplexation and topology-induced property tuning with

		photocleavable cyclic polylactides <u>Naoto Sugai</u> ,Takuya Yamamoto,Yasuyuki Tezuka,Shigeo Asai .....	5015
		<b>H. Uyama, presiding</b>	
15:25	1X14	Cell Adhesion on Polymer/Inorganic Nano-composite Thin Films <u>Arisa Yamamoto</u> ,Hisao Matsuno,Keiji Tanaka .....	5017
15:50	1X15	New stage of commercial viability of biomassplastic <u>Kazue Ueda</u> .....	5019
16:15	1X16	Application of Bio-based Polyamide LEXTER to CF RTP <u>Nobuhiko Matsumoto</u> ,Kosuke Otsuka,Jun Mitadera .....	5021
		<b>H. Marubayashi, presiding</b>	
16:40	1X17	Morphology Controlled PP/PA11 "Salami" Structure <u>Jumpei Kawada</u> ,Makoto Mouri,Osamu Watanabe,Arimitsu Usuki,Masayuki Kitou,Toshiyuki Ario,Chihan Lee,Osamu Kitou .....	5023
17:05	1X18	Computer Simulation of PP/PA11 "Salami" Morphology <u>Taku Ozawa</u> ,Satoru Yamamoto,Jumpei Kawada,Osamu Watanabe,Arimitsu Usuki,Masayuki Kitou,Toshiyuki Ario,Chihan Lee,Osamu Kitou .....	5025
17:30	1X19	Solid-state Polymerization of Bio-based Polyamide MXD10 <u>Kosuke Otsuka</u> ,Nobuhiko Matsumoto,Jun Mitadera .....	5027
17:55	1X20	Degradable baroplastics -Effect of applied pressure and temperature on processability- <u>Ikuo Taniguchi</u> .....	5029

## Thursday, September 12

### A New Era in Research and Development of Bioplastics

		<b>T. Tsuge, presiding</b>	
9:10	2X01	Production of green chemicals and bioplastic raw materials from non-food biomass <u>Masayuki Inui</u> .....	5031
9:35	2X02	Production of vinyl monomers from biomass by microbial process <u>Yuji Aso</u> ,Shusuke Okamoto,Yasutomo Tanaka,Taejun Chin,Ken Hiratsuka,Hitomi Ohara .....	5033
10:00	2X03	Variety expansion from lactate-based polymer based on the microbial polymerization system <u>Seiichi Taguchi</u> ,Ken'ichiro Matsumoto .....	5035
		<b>Y. Aso, presiding</b>	
10:25	2X04	Ultrahigh-molecular-weight polyhydroxyalkanoate production and biosynthetic mechanism in genetically engineered <i>Escherichia coli</i> <u>Ayaka Hiroe</u> ,Takeharu Tsuge .....	5037
10:50	2X05	Structures and environmental biodegradability of several aliphatic polyesters <u>Takuro Baba</u> ,Fumihiro Muroi,Yuya Tachibana,Ken-ichi Kasuya .....	5039
11:15	2X06	Degradation of aliphatic-aromatic copolyester by mesophilic bacteria <u>Fumihiro Muroi</u> ,Yuya Tachibana,Ken-ichi Kasuya,Nariaki Ishii,Kouji Yazawa,Yoshio Inoue.....	5041
11:40	2X07	Biodegradation of copolyesteramides containing 2-pyrrolidone <u>Atsuyoshi Nakayama</u> ,Norioki Kawasaki,Naoko Yamano,Kouichi Uegaki,Mika Tadokoro,Shunsuke Yuba.....	5043
		<b>S. Taguchi, presiding</b>	
12:55	2X08	Curdlan Ester Derivatives: Syntheses, Properties, and Solid-State	

		Structure <u>Hironori Marubayashi</u> , Kazuyori Yukinaka, Yukiko Rogers, Akio Takemura, Tadahisa Iwata, Takaaki Hikima, Masaki Takata.....	5045
13:20	2X09	High strength transparent film prepared from chitin nanoibers <u>Shinsuke Ifuku</u> , Akiko Ikuta, Hironori Izawa, Minoru Morimoto, Hiroyuki Saimoto .....	5047
13:45	2X10	Properties and Melt Spinnability of Bacterial Co-Polyester Filled with Organically Treated Nanoclay <u>Takaki Fujita</u> , Santa Momii, Shinichi Yagi, Hideki Yamane, Noriyuki Suzuki .....	5049

### Science and Technology Toward the Recycling of Polymer as the Organic Resources

#### Y. Andou, presiding

14:25	2XSO	Introductory Remarks <u>Nobuhiro Kihara</u> .....	5051
14:35	2X12	Inner structure and Mechanical Properties of Recycled Polypropylene <u>Aya Tominaga</u> , Hiroshi Sekiguchi, Ryoko Nakano, Shigeru Yao, Eiichi Takatori .....	5052
15:00	2X13	Radical Polymerizations of Styrene Dimer and Styrene Trimer, as Thermal Degradation Products of Polystyrene, for Chemical Recycling: Copolymerization with Maleic Anhydride <u>Takahiro Kimura</u> , Michio Urushisaki, Toshikazu Sakaguchi, Tamotsu Hashimoto, Takashi Sawaguchi, Daisuke Sasaki.....	5054
15:25	2X14	Polymer scrambling reactions of olefin-containing polymers by cross-metathesis reaction and modification of natural rubber <u>Tomoyuki Ohishi</u> , Kaori Suyama, Keiichi Imato, Seiichi Kawahara, Atsushi Takahara, Hideyuki Otsuka.....	5056
15:50	2X15	Preparation of Gel Electrolyte using Cellulose Derivative with Acryloyl Groups <u>Toru Hoshi</u> , Kenta Sato, Kazuma Okura, Toshiki Hagiwara, Takashi Sawaguchi, Shoichiro Yano.....	5058

#### T. Hoshi, presiding

16:15	2X16	Development of polymer composite using oil palm fiber <u>Yoshito Ando</u> , Kazutoshi Kunimoto, Haruo Nishida, Yoshihito Shirai, Noor Ida Amalina Ahamad Nordin, Hidayah Ariffin, Ali Hassan Mohd ...	5060
16:40	2X17	Active species on depolymerization of flame-resisting poly(L-lactic acid) composites for their chemical recycling <u>Haruo Nishida</u> , Takayuki Tsukegi .....	5062
17:05	2X18	Fabrication of Bio-ethanol from Cellulosic Waste Fiber <u>Tadashi Uragami</u> , Koichi Takinami, Katsuyoshi Sako, Kazuo Tanabe, Shigeyuki Nakano, Yukio Higashiyama.....	5064

### Friday, September 13

### Science and Technology Toward the Recycling of Polymer as the Organic Resources

#### S. Hirose, presiding

9:10	3X01	A New Development of Alcoholysis of PET <u>Kazutoshi Ikenaga</u> , Yusuke Ito, Ryoto Ogawa, Ryuto Kodama, Syo Umeki.....	5066
9:35	3X02	Oxidatively degradable epoxy resin	

		<u>Nobuhiro Kihara</u> .....	5068
10:00	3X03	Synthesis of Recyclable Carbon Fiber-Reinforced Plastics with Degradable Epoxy Resins Containing Acetal Linkages <u>Ayaka Yamaguchi</u> , Michio Urushisaki, Toshikazu Sakaguchi, Tamotsu Hashimoto, Kazumasa Kawabe, Keiichi Kondo, Hirohumi Iyo .....	5070
		<b>K. Ikenaga, presiding</b>	
10:25	3X04	Precision Synthesis and Sequence Control of Chemically Recyclable Stimuli-Responsive Polymers with Acid Degradable Main Chain <u>Suzuka Matsumoto</u> , Yukari Oda, Arihiro Kanazawa, Shokyoku Kanaoka, Sadahito Aoshima .....	5072
10:50	3X05	Design and characterization of cross-linked polymer having thermoplasticity originated from a radical crossover reaction <u>Keita Akamine</u> , Yuji Higaki, Tomoyuki Ohishi, Atsushi Takahara, Hideyuki Otsuka .....	5074
11:15	3X06	Properties of epoxy resins hardened by various woody lignins <u>Yoshiaki Okabe</u> , Hiroyuki Kagawa, Chizuru Sasaki, Yoshitoshi Nakamura .....	5076
11:40	3X07	Synthesis and Thermal Properties of Epoxy Resins with Unsaturated Ester Chains Derived from Ligninsulfonate Salts <u>Shigeo Hirose</u> .....	5078
		<b>H. Nakatani, presiding</b>	
12:55	3X08	Self-Organized Materials Composed of PDC, Lignin-Biodegradation Intermediate <u>Kazuhiro Shikinaka</u> , Keisuke Kaneda, Yoshihiro Katayama, Eiji Masai, Masaya Nakamura, Yuichiro Otsuka, Seiji Ohara, Kiyotaka Shigehara .....	5080
13:20	3X09	Multistep structural control of native lignins ~ Functionality control and application of lignophenols by selective acylation ~ <u>Koudai Murai</u> , Mitsuru Aoyagi, Masamitsu Funaoka .....	5082
13:45	3X10	Effect of End Modification on the Thermal Stability of Poly(Lactic Acid) <u>Yuushou Nakayama</u> , Naoki Matsubara, Ryo Tanaka, Zhengguo Cai, Takeshi Shiono, Hiroyuki Shirahama .....	5084
		<b>Y. Nakayama, presiding</b>	
14:10	3X11	Fabrication of All Bio-based Composite from Poly(hydroxyalkanoate) and Cellulose <u>Nao Hosoda</u> , Takashi Tsujimoto, Hiroshi Uyama .....	5086
14:35	3X12	Development of a cost-reducing system by rationalizing the pre-processing for a chemical recycling system for containers and packaging plastics waste <u>Takashi Yamawaki</u> , Yoshimi Ozaki, Masayuki Ooyama .....	5088
15:00	3X13	Syndiotactic polypropylene/microfibrous cellulose composites: Development of a dispersion method and its tensile properties Masato Hamadate, Ryouzaku Satou, Kensuke Miyazaki, <u>Hisayuki Nakatani</u> .....	5090
15:25	3X14	Photodegradation of polypropylene by a TiO <sub>2</sub> / poly(ethylene oxide) / Methyl linoleate paint photocatalyst system <u>Kensuke Miyazaki</u> , Takayuki Arai, Minoru Terano, Hisayuki Nakatani .....	5092



<b>Room Y</b>
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**Wednesday, September 11**

**Water and Polymer Interface Against Soil/ Water/ Air Pollution**

9:50	1YSO	Introductory Remarks <u>Yasuhisa Adachi</u> , Mitsuru Satoh.....	5094
<b>A. Kawaguchi, presiding</b>			
10:00	1Y03	Chiral separation with chitin nanofiber membranes: Multi-stage cascade resolution <u>Kenta Shiomi</u> , Masakazu Yoshikawa.....	5095
10:25	1Y04	Agarose membrane for vapor permeation -separation of bioethanol- <u>Yukiko Fujita</u> , Masakazu Yoshikawa.....	5097
10:50	1Y05	Development of Forward Osmosis Polyamide Membranes for Energy Recovery <u>Motohiro Aiba</u> , Hidetoshi Matsumoto, Tomoya Higashihara, Mitsuru Ueda, Takahiro Tokuyama, Hiroki Tomioka .....	5099
<b>R. Shindo, presiding</b>			
11:15	1Y06	Oxidation of Methyl Orange with Hydrogen Peroxide catalyzed by Complex Formed Between Cu(II) ions and Polymer Consisting of N-Isopropylacrylamide and N-Vinylimidazole <u>Kazuyoshi Ogawa</u> .....	5101
11:40	1Y07	Highly efficient catalytic properties of Pd loaded monolithic porous ion exchanger <u>Koji Yamanaka</u> , Daisaku Yano, Hiroshi Inoue .....	5103
<b>M. Satoh, presiding</b>			
12:55	1Y08IL	Biomimetic water droplet manipulation on superhydrophobic hybrid polymer microstructures <u>Daisuke Ishii</u> .....	5105
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#### **Polymer Chemistry: Synthesis and Reactions**

#### **Y. Oishi, presiding**

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**Functional Polymers and Polymer Functions**

**S. Seki, presiding**

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**S. Hotta, presiding**

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16:15	1ESB16	Metallo-Supramolecular Polymer Gels for Stretchable Electrochromic Device Application <u>Jian Zhang</u> , Takashi Sato, Chih-wei Hu, Masayoshi Higuchi.....	3605
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**Thursday, September 12**

**Functional Polymers and Polymer Functions**

**T. Sakai, presiding**

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**K. Kataoka, presiding**

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**T. Nishino, presiding**

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### Polymer Physics: Structure and Properties

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