

CONTENTS
Regular Papers

Plasma Surface Texturing of Single-Crystal Silicon Using Dielectric Barrier Discharge	595
Tatsuya Sakoda, Toshiyuki Hamada and Kunihiro Matsukuma	
Water Repellency of Water-Base-Pigment Inkjet Ink Containing Amphiphilic Copolymers	599
Juntira Komasatitaya, Shinya Takahashi and Tomoyuki Kasemura	
Adsorption of Organic Solvents' Vapors by Porous Carbon Materials Synthesized by Template Method	607
Hironobu Abiko and Yasushi Shinohara	

Symposium of Structure Control and Dynamic Functional Properties of Dimensionally-controlled Polymeric Materials

Preface	615
Evolution of Microphase-Separated Structures upon High Temperature Annealing in Block Copolymer Thin Films Studied by Transmission Electron Microtomography	617
Ken-ichi Niihara, Yukihiro Nishikawa, Toshio Nishi and Hiroshi Jinnai	
Fine-Control of Metal Ion Assembly in Novel Topological Poly(phenylazomethine)s	623
Masayoshi Higuchi and Kimihisa Yamamoto	
Effects of Saturation Pressure of CO₂ on Nanofoams nucleated from Block Copolymer Nanodomains	627
Hideaki Yokoyama, Lei Li, Taichi Nemoto and Kenji Sugiyama	
Site Specific Fabrication of Polystyrene Ultrathin Films onto the Patterned Organosilane Monolayer Surfaces by the Ink-Jet Method	631
Masamichi Morita, Shigekazu Yasutake, Hirotaka Ishizuka, Yousuke Sakai, Jun Fukai and Atsushi Takahara	
Surface Structure and Properties of (Oligourethane with Fluoroalkyl End Groups / Polyurethane) Blend Thin Films	635
Masafumi Horiuchi, Ken Kojio and Mutsuhisa Furukawa	
Fabrication and Spectroscopic Properties of Hybrid Nanoassemblies Consisting of Metal Nanoparticles and Polymer Nanosheets	639
Masaya Mitsuishi, Hiroyuki Tanaka and Tokuji Miyashita	
Film Thickness Dependence of Photoisomerization for Azobenzene Chromophores Tagged to Polystyrene with Various Molecular Weights	643
Yohei Tateishi, Keiji Tanaka and Toshihiko Nagamura	
Synthesis and Frictional Properties of Poly(2,3-dihydroxypropyl methacrylate) Brush Prepared by Surface Initiated Polymerization on Silicon Wafer	647
Motoyasu Kobayashi and Atsushi Takahara	
Photo-patternable Catalyst Surface for Electroless Deposition	651
Jae-Young Lee, Dehui Yin and Shin Horiuchi	
Construction and Photocurrent of Light-harvesting Core Complexes of Photosynthetic Bacteria in Lipid Bilayers	655
Morio Nagata, Yukari Nakamura, Emi Nishimura, Katsunori Nakagawa, Yoshiharu Suemori, Kouji Iida and Mamoru Nango	

2D Nanophase Separation in Monolayers of Triblock Copolymer Having Azobenzene Moiety	659
Sohei Kadota, Kenji Aoki, Shusaku Nagano and Takahiro Seki	
Ideal Spread Monolayer of Fully Hydrophobic Polysilane, Poly(methyloctylsilane), with the Assist of Liquid Crystal Monolayer	663
Shusaku Nagano and Takahiro Seki	
Ethanol Macroclusters Adsorbed on Glass Spheres in Ethanol/Cyclohexane Binary Liquids Studied by $^1\text{H-NMR}$ Spectroscopy	667
Yasuhiro Nakagawa, Satoshi Endo, Masashi Mizukami and Kazue Kurihara	
Fabrication of Silver Nanowires Based on DNA Stretched by the LB Method	671
Yuichi Hashimoto, Yasutaka Matsuo and Kuniharu Ijiro	
Bilayer Structure Fluctuation of Amphiphilic Compounds during Self-Assemble Polymerization in Two Dimensional Anisotropic Field	675
Takeshi Yamada, Tomoko Yoshii, Nobuya Ozawa, Youhei Kawabata, Tadashi Kato and Hirohisa Yoshida	
Assembly of Metal Nanoparticles in Multiscales and Multi-Dimensions in Polymer Films	679
Shin Horiuchi, Dehui Yin and Jae Young Lee	
Synthesis of Ceramic Particles by Micellization, Cross-Linking, and Pyrolysis of Carbosilane Block Copolymers	683
Kozo Matsumoto, Takashi Nishiya and Hideki Matsuoka	
Photofunctional Ultrathin Films Prepared by High-Density Graft Polymerization	687
Shinzaburo Ito, Junpei Kuno, Katsuhiro Yamashita, Masataka Ohoka, Hideo Ohkita, Yoshinobu Tsujii and Takeshi Fukuda	
Polyrotaxane-Film Formation Observed by Surface Plasmon Spectroscopy	691
Keiko Tawa, Norihito Kuboyama, Ahmed Saleh and Mutsuo Tanaka	
Thickness Control of Polycationic Single-Layer Adsorption Films by Mix Proportion of Poor Solvent to Good Solvent	695
Yuji Suzuki, Motonori Komura, Masaru Nakagawa and Tomokazu Iyoda	
Macromolecular Radical Crossover Reaction of Disulfide-Containing Polyester Triggered by Free-Radical Generators	699
Yasuharu Kobashi, Hideyuki Otsuka and Atsushi Takahara	
Solid Lubricant Properties of the Supramolecular Assembled Films of Fullerene C₆₀	703
Kenji Hisada, Kiyofumi Tanaka, Misato Miyake, Akihiro Inaba, Teruo Hori and Yuji Tokunaga	
Photoelectrochemical Properties of Nano-Structured Polymer Ultrathin Films on Conductive Substrates	707
Hideo Ohkita, Kuniaki Sakai and Shinzaburo Ito	
Theoretical Study of Conformation-dependent Spectroscopic Property of Helical Conjugated Polyisocyanide Derived from L-phenylalanine	711
Yuki I. Yamada and Tomokazu Iyoda	
Polymer Scrambling by Macromolecular Olefin Metathesis	715
Takatoshi Muta, Hideyuki Otsuka and Atsushi Takahara	
Dynamic Transformation of Polymer Structure by Radical Crossover Reaction	719
Yuji Higaki, Hideyuki Otsuka and Atsushi Takahara	
Preparation and Properties of Polymer Hybrids Containing Nanoparticles with Controlled Interfacial Structure	723
Ryosuke Matsuno, Hideyuki Otsuka and Atsushi Takahara	

Aggregation Structure and Functional Properties of (Inorganic Nanofiber/ Pepsin) Hybrid Hydrogel	727
Nozomi Inoue, Kazuya Yamamoto, Hideyuki Otsuka, Shin-Ichiro Wada and Atsushi Takahara	
Vectorial Electron Transport at a Long Distance by Helical Peptides	731
Tomoyuki Morita, Kazuya Kitagawa and Shunsaku Kimura	
Well-Controlled Nanobiointerface Generated from Phosphorylcholine Block Copolymers Brushes via a "Grafting From" Process	735
Ryoko Iwata, Yasuhiko Iwasaki, Kazunari Akiyoshi and Atsushi Takahara	
Spin Alignment of Orthogonal π-Radicals of Directly <i>meso-meso</i> Linked Porphyrin Dimer, Trimer, and Tetramer	739
Jotaro Nakazaki, Yutaka Senshu, Daiki Machida and Hiroshi Segawa	
Chiral BEDOT-based Copolymers Prepared by Chemical and Electrochemical Polymerization	743
Yong Soo Jeong, Hiromasa Goto, Shuji Iimura, Toshiyuki Asano and Kazuo Akagi	
 Symposium of Innovative Material Technologies Utilizing Ion Beam	
Preface	747
Fabrication of Cu₂O Nanoparticles in SiO₂ by Ion Implantation Combined with Low-Oxygen-Pressure Oxidation and Reduction in Ar-Gas	749
Hiroshi Amekura, Kenichiro Kono, Oleg A. Plaksin, Yoshihiko Takeda and Naoki Kishimoto	
Optical Responses of Negative-Copper-Ion Implanted Al₂O₃	753
Oleg A. Plaksin, Yoshihiko Takeda, Hiroshi Amekura, Kenichiro Kono, Naoki Umeda and Naoki Kishimoto	
Cu Nanoparticle Grating Fabricated by Negative Heavy-Ion Implantation	757
Haisong Wang, Oleg A. Plaksin, Jing Lu and Naoki Kishimoto	
Control of Step and Terrace Structures of LSMO Thin Films by IBS Deposition	761
Michi Ogata, Ajay K. Sarkar, Hidetaka Nakashima, Masahito Matsui, Yasushi Kurosaki, Md. Motin Seikh, Kazuhiro Endo, Hirofumi Yamasaki and Tamio Endo	
A Model of Large Droplet Behavior in Ablation Plasma Produced by Intense Pulsed Light Ion Beam	765
Hiroaki Shishido, Hideki Yanagi, Tsuneo Suzuki, Takashi Yunogami, Hisayuki Suematsu, Weihua Jiang and Kiyoshi Yatsui	
Preparation of Compositionally Gradient Ba-Sr-Al-O Thin Film by Ion-Beam Evaporation	769
Naoya Honda, Tsuneo Suzuki, Takashi Yunogami, Hisayuki Suematsu, Weihua Jiang and Kiyoshi Yatsui	
Surface Modification of Titanium-Based Alloy with Ti/C Compositinally Graded Film Deposited by Sputtering	773
Tsutomu Sonoda, Akira Watazu, Kiyotaka Katou, Takahiko Yamada and Tadashi Asahina	
Preparation of ITO Films with Smooth Surface and Low Resistivity Using Reactive Ion-Beam Sputtering	777
Satoshi Iwatsubo	
Microstructure and Mechanical Properties of Si-DLC Films Deposited by PBII with Bipolar Pulses	781
Junho Choi, Soji Miyagawa, Setsuo Nakao, Masami Ikeyama and Yoshiko Miyagawa	
Visible and UV Raman Spectra of Diamond-Like Carbon Films Prepared by a PBII System	785
Setsuo Nakao, Junho Choi, Soji Miyagawa, Yoshiko Miyagawa, Masami Ikeyama and Kazuo Tsugawa	
Blister Formation in Rutile TiO₂ (100) Thin Films by Helium Ion Implantation	789
Shunya Yamamoto, Shinji Nagata, Akinori Takayama and Masahito Yoshikawa	

Catalytic Effect of Cu Precipitates for the Growth of ZnO Rods	793
Akinori Takeyama, Shunya Yamamoto, Hiroshi Itoh and Masahito Yoshikawa	
A Comparison of Ions with Neutrals Emitted from Semiconductors Bombarded by MeV Si Ions	797
Yoshihiko Nakata, Satoshi Ninomiya, Takaaki Aoki, Hidetsugu Tsuchida, Jiro Matsuo and Akio Itoh	
Fatigue Property of Stainless Steel by Ion Implantation	801
Kiichiro Kono, Masashi Nemoto, Haruo Ishikawa, Qing Wang, Shizuka Nakano and Hisato Ogiso	
The 3-D Nano-Manipulator Fabrication by FIB-CVD	805
Reo Kometani, Takayuki Hoshino, Kazuhiro Kanda, Yuichi Haruyama and Shinji Matsui	
Ion Beam Modification of Avidin Coated SiO₂ Substrate for Protein Micropatterning	809
Kazumasa Sato, Yuji Segawa, Ken-ichi Yamakoshi, Yoshiaki Suzuki and Tasuku Yotoriyama	

*Symposium of Diversity of Materials where Soft, Nano, and Multicomponent Meet
– An interdisciplinary approach to innovation in soft materials –*

Preface	813
Regulation of Quorum Sensing in <i>Serratia marcescens</i> by Adsorption of N-Acylhomoserine Lactones of Cyclodextrin Immobilized Gel	815
Norihiko Kato, Tomohiro Morohoshi, Hitomi Matsumoto, Toru Tanaka and Tsukasa Ikeda	
Estimation of Gel Point in the Sol-Gel Transition : A molecular model for the network formation of Diglycidyle Ether of Bisphenol A and Propylene Glycol Diamino Ether	819
Yutaka Tanaka	
Utilization of Gels for the Environment Purification	823
Kazuhiro Hara, Misako Yoshigai and Tetsuaki Nishida	
Uptake of Signal Molecules for Gram-Negative Bacterial Cell-Cell Communication on Polymer Gels ...	827
Norihiko Kato, Hitomi Matsumoto, Tomoyo Nozawa, Tomohiro Morohoshi and Tsukasa Ikeda	
Freezing Effects of PEG-Modified Poly(N-isopropylacrylamide) Gel on Deswelling Acceleration	831
Norihiko Kato, Wakaaki Murai, Tomohiro Morohoshi and Tsukasa Ikeda	
Design of Biocompatible Hydrogels with Attention to Structure of Water Surrounding Polar Groups in Polymer Chains	835
Toshinori Morisaku, Takayuki Ikebara, Junji Watanabe, Madoka Takai and Kazuhiro Ishihara	
nm-Scale Assembly of Phospholipid and Detergent Mixture	839
Kenji Kubota, Tomohiko Sato, Hidemi Kawai, Yoshihiko Inaoka and Kaori Wakamatsu	
Mechanical Behavior of NIPA Gels in Low Water Content below Freezing Point	843
Atsushi Nakamura, Kazuhiro Hara and Nobuyasu Hiramatsu	
Investigation on Nano-Structure of Nafion Film with Metal Ion	847
Yoshinori Akai, Masaaki Sugiyama, Keiji Ito, Kazuhiro Mori and Toshiharu Fukunaga	
Structural Change in Polymer Chains of Sodium Gellan Gums Studied by Circular Dichroism	851
Etsuyo Ogawa, Rheo Takahashi, Hirofumi Yajima and Katsuyoshi Nishinari	
Application of Small-Angle X-ray Scattering Utilizing X-ray Anomalous Dispersion to Nano-Structure Analysis	855
Masaaki Sugiyama, Yuji Soejima, Kazuhiro Hara, Fumie Takei, Keiji Itoh, Kazuhiro Mori and Toshiharu Fukunaga	

Structural Effect for Fe-doping in LaGa_{1-x}Fe_xO_{3-δ}	859
Kazuhiro Mori, Toshiharu Fukunaga, Koji Shibata, Keiji Itoh, Kenji Iwase, Masao Yonemura and Masaaki Sugiyama	
 <i>Symposium of Recent Advances in Computational Materials Science</i>	
Preface	863
Computer Simulation of Grain Growth in Three Dimensions by Phase Field and Monte Carlo Methods	865
Yoshihiro Suwa and Yoshiyuki Saito	
Simulation of the Growth of Cu Critical Nucleus in Fe-Cu Alloys	869
Takatoshi Nagano and Masato Enomoto	
Full-potential KKR Calculations for Point-defect Interaction Energies in Al, Based on the Generalized-gradient Approximation: two-body and many-body interactions	873
F. Nakamura, T. Hoshino, S. Tanaka, K. Hirose, S. Hirosawa and T. Sato	
Full-potential KKR Calculations for Point Defect in Al, Based on the Generalized-gradient Approximation: chemical interaction and lattice distortion	877
T. Hoshino, M. Asato, N. Fujita and N. Papanikolaou	
Phonon Dispersion Curves and Structural Stability for CuZr Alloys using a New Modified Embedded Atom Method Potential	881
Keiko Nakatani, Rodney J. Clifton and Mike I. Baskes	
Glass Transition within Cluster Variation Method	885
Tetsuo Mohri	
First-Principles Study on Dielectric Response of Amorphous Al₂O₃	889
Hiroyoshi Momida, Takenori Yamamoto, Tomoyuki Hamada, Yoshiteru Takagi, Tsuyoshi Uda and Takahisa Ohno	
First-Principles Study of Hg under High-Pressure	893
Kazuaki Kobayashi, Masao Arai and Kenichi Takemura	
Electronic Structure Calculations of Various Graphite Sheets	897
Shuji Obata	
First Principles Calculations for the New Ferrimagnet Sr₈CaRe₃Cu₄O₂₄	901
Xiangang Wan, Masanori Kohno and Xiao Hu	
Molecular-dynamics Study for the Effects of Stacking Fault Tetrahedron on the Shear Resistance of Cu Crystals	905
Katsuyuki Kusunoki	
Atomistic Studies on High-Temperature Elasticity and Auxetic Behavior in SiO₂ Polymorphs	909
Hajime Kimizuka, Shigenobu Ogata and Yoji Shibutani	
Molecular Orbital Study of Interfacial Strength between Silica Cluster and Polyimide Surface	913
Akinori Fujinami, Shigenobu Ogata, Yoji Shibutani, Kenichi Yamamoto and Manabu Kakino	