

IUMRS-ICA 2008 Symposium, Sessions X and Y

Journal of Physics: Conference Series Volume 184

**Nagoya, Japan
9-13 December 2008**

ISBN: 978-1-61738-300-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

TABLE OF CONTENTS

SESSION X. APPLICATIONS OF SYNCHROTRON RADIATION AND NEUTRON BEAM TO SOFT MATTER SCIENCE

Structural Evolution Process of Isotactic Polypropylene in the Isothermal Crystallization from the Melt.....	1
<i>Kummetha Raghunatha Reddy, K. Tashiro, Takashi Sakurai, Noburu Yamaguchi, M. Hanesaka, S. Sasaki, H. Masunaga, M. Takata</i>	
Structural Evolution in the Isothermal Crystallization Process of the Molten Nylon 10/10 Traced by Time-resolved Infrared Spectral Measurements and Synchrotron SAXS/WAXD Measurements	5
<i>K. Tashiro, Asami Nishiyama, Sawako Tsuji, Tomoko Hashida, M. Hanesaka, Shinichi Takeda, Cao Weiyu, Kummetha Raghunatha Reddy, H. Masunaga, S. Sasaki, Kazuki Ito, M. Takata</i>	
First Detection of Lamella-Gyroid-Cylinder Phase Transition of Neat Polyethylene-Poly(ethylene Oxide) Diblock Copolymers on the Basis of Synchrotron WAXD/SAXS and Infrared/Raman Spectral Measurements.....	11
<i>Cao Weiyu, K. Tashiro, M. Hanesaka, Shinichi Takeda, H. Masunaga, S. Sasaki, M. Takata</i>	
Distribution of Glass Transition Temperature T_g in a Polymer Thin Film by Neutron Reflectivity.....	15
<i>K. Kawashima, R. Inoue, T. Kanaya, G. Matsuba, K. Nishida, M. Hino</i>	
Effect of Reflected Waves on the GISAXS Analysis of As-grown Capped Ge Nanodots.....	19
<i>H. Okuda, K. Kuno, S. Ochiai, N. Usami, K. Nakajima, O. Sakata, S. Sasaki, M. Takata</i>	
Dimensional and Hydrodynamic Properties of Amylose Tris(phenylcarbamate) in Various Solvents	25
<i>Ken Terao</i>	
Influence of α-methyl Group on Molecular Aggregation Structure and Surface Physicochemical Properties of Fluoroalkyl Side Chain Polymers	29
<i>K. Honda, H. Yamaguchi, O. Sakata, S. Sasaki, M. Takata, M. Morita, A. Takahara</i>	
Supramolecular Structures of Benzyl Amine Derivate/DNA Complexes Explored with Synchrotron Small Angle X-ray Scattering at SPring-8	33
<i>Mina Sakuragi, Shouta Kusuki, Emi Hamada, H. Masunaga, Hiroki Ogawa, Isamu Akiba, Kazuo Sakurai</i>	
Molecular Aggregation States of Poly{2-(perfluoroctyl)ethyl Acrylate} Polymer Brush Thin Film Analyzed by Grazing Incidence X-ray Diffraction	39
<i>H. Yamaguchi, K. Honda, M. Kobayashi, M. Morita, H. Masunaga, O. Sakata, S. Sasaki, M. Takata, A. Takahara</i>	
Characterization of Swollen Structure of High-density Polyelectrolyte Brushes in Salt Solution by Neutron Reflectivity.....	43
<i>M. Kobayashi, Yuki Terayama, M. Hino, Kazuhiko Ishihara, A. Takahara</i>	
Influence of Salt Concentration on Swelling States of Poly(sulfobetaine) Brush at Aqueous Solution Interface	47
<i>Yuki Terayama, Moriya Kikuchi, M. Kobayashi, M. Hino, A. Takahara</i>	
Combinatory Usage of X-ray and Neutron Diffraction Techniques for the Refined Structure Analysis of Polymer Crystals: from Hydrogen Atoms to Bonded Electron Density Distribution.....	51
<i>K. Tashiro, M. Hanesaka, Yoshinori Yoshizawa, Takashi Ohbara, Ryota Kuroki, Toshiaki Kitano, Takashi Nishu, S. Sasaki, M. Takata</i>	
Nanoporous Structures Tempered from Block Copolymer Morphologies	55
<i>Hideaki Yokoyama, Lei Li, Cedric Dutriez, Kenji Sugiyama</i>	
Correlated Changes in Meso- and Nano-scale Hierarchical Structure of Vinylidene Fluoride-trifluoroethylene Random Copolymers Investigated by Simultaneous Measurements of DSC and SAXS/WAXD Utilizing Synchrotron Radiation.....	60
<i>H. Masunaga, S. Sasaki, M. Takata, M. Hanesaka, K. Tashiro</i>	
Crystallization Behavior of Polyethylene on Silicon Wafers in Solution Casting Processes Traced by Time-resolved Measurements of Synchrotron Grazing-incidence Small-angle and Wide-angle X-ray Scattering.....	64
<i>S. Sasaki, H. Masunaga, K. Itou, K. Tashiro, H. Okuda, A. Takahara, M. Takata</i>	

SESSION Y. FRONTIER OF POLYMERIC NANO-SOFT-MATERIALS –PRECISION POLYMER SYNTHESIS, SELF-ASSEMBLING AND THEIR FUNCTIONALIZATION

Brittle, Ductile, Paste-like Behaviors and Distinct Necking of Double Network Gels with Enhanced Heterogeneity	70
<i>Yasunori Kawauchi, Yoshimi Tanaka, Hidemitsu Furukawa, Takayuki Kurokawa, Tasuku Nakajima, Yoshihito Osada, Jian Ping Gong</i>	
Living Anionic Polymerization of Styrenes Containing Adamantyl Skeletons.....	78
<i>Shingo Kobayashi, Hiroshi Kataoka, Takashi Ishizone</i>	
Static and Dynamic Light Scattering Studies on Dilute Polyrotaxane Solutions.....	84
<i>Tetsuya Kume, Jun Araki, Yasuhiro Sakai, Koichi Mayumi, Masatoshi Kidowaki, Hideaki Yokoyama, Kohzo Ito</i>	
Formation of Polystyrene/poly(Methyl Methacrylate) Heteroarm Star-like Nanogels from Complementarily Reactive Well-defined Diblock Copolymers.....	90
<i>Y. Amamoto, H. Otsuka, A. Takahara</i>	
Tear Energy and Strain-induced Crystallization of Natural Rubber/styrene-butadiene Rubber Blend	94
<i>F. Noguchi, K. Akabori, Y. Yamamoto, T. Kawazura, S. Kawahara</i>	
Coordination Ability of Poly(vinylene-arsine)s Towards Transition Metal Ions	98
<i>A. Nakahashi, M. Bravo, K. Naka, Y. Chujo</i>	
Thermal Deformation of Imprinted Twist Nematic Elastomers.....	104
<i>Y. Sawa, K. Urayama, T. Takigawa</i>	
Density Functional Simulations for Self-assembling Micellar Structures in Amphiphilic Block Copolymer Solutions	110
<i>Takashi Uneyama</i>	
Graftpolyrotaxane: Graft Polymer Possessing Movable Graft Chains on Cyclodextrins As the Polyrotaxane Wheels	114
<i>T. Takashima, K. Hinoue, N. Kihara, M. Hayashi, Y. Koyama, T. Takata</i>	
Metal-catalyzed Living Radical Polymerization and Radical Polyaddition for Precision Polymer Synthesis	120
<i>M. Mizutani, K. Satoh, M. Kamigaito</i>	
Residual Stress of Particulate Polymer Composites with Reduced Thermal Expansion	124
<i>T. Nishino, M. Kotera, Y. Sugiura</i>	
Field Emission Scanning Electron Microscopy Combined with Focused Ion Beam for Rubbery Material with Nano-matrix Structure	128
<i>K. Akabori, Yoshimasa Yamamoto, S. Kawahara, H. Jinnai, Hideo Nishioka</i>	
Chain and Miophase-separated Structures of Ultrathin Polyurethane Films	132
<i>Ken Kojio, Yusuke Uchiba, Yasunori Yamamoto, Suguru Motokicho, Mutsuhisa Furukawa</i>	
The Interface Dynamics of Bicontinuous Phase Separating Structure in a Polymer Blend	136
<i>Haruko Saito, Masahiro Yoshinaga, Takaaki Mihara, T. Nishi, H. Jinnai</i>	
Polymer Nanotechnology Applied to Polymeric Nano-soft-materials	140
<i>T. Nishi, S. Fujinami, K. Nakajima, H. Sugimori, M. Hatta, M. Weber, H. Jinnai</i>	
AFM Studies on Microtribology of Concentrated Polymer Brushes in Solvents	146
<i>Y. Tsujii, A. Nomura, K. Okayasu, W. Gao, K. Ohno, T. Fukuda</i>	
Nanoscopic Adhesion Test for Polymers by a Light-lever System.....	152
<i>Ifu Narayama, K. Akabori, Hiroshi Morita, Toshihiko Nagamura, Keiji Tanaka</i>	
Chain Dimension of Polystyrene-like Hyperbranched Polymers with Various Chain End Groups in THF	156
<i>Moriya Kikuchi, M. Kobayashi, Akihiro Tanaka, A. Takahara</i>	
Author Index	