

# **Materials Engineering and Sciences Division**

**Presentations at the 2008 AIChE Annual Meeting**

**Philadelphia, Pennsylvania  
16 - 21 November 2008**

**Volume 1 of 2**

**ISBN: 978-1-61567-223-3**

**Printed from e-media with permission by:**

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



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

Copyright© (422: ) by AIChE  
All rights reserved.

Printed by Curran Associates, Inc. (422; )

For permission requests, please contact AIChE  
at the address below.

AIChE  
3 Park Avenue  
New York, NY 10016-5991

Phone: (203) 702-7660  
Fax: (203) 775-5177

[www.aiche.org](http://www.aiche.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

<b>Shaped Films of Ionotropic Hydrogels Fabricated Using Templates of Patterned Paper</b> .....	1
<i>Malancha Gupta, Paul J. Bracher, George M. Whitesides</i>	
<b>Development of a Hydrolytically Degradable PEG Hydrogel with Tunable Degradability and Solute Release</b> .....	2
<i>Silviya L. Petrova, Jennie B. Leach</i>	
<b>Synthesis and Characterization of Magnetic Hydrogel Nanocomposites for Hyperthermia Applications</b> .....	3
<i>Samantha A. Meenach, J. Zach Hilt, Kimberly W. Anderson</i>	
<b>Non-Synthetic Polymer Biomodification Using Gold Nanoparticles</b> .....	4
<i>Craig D. Buckley, Kathleen A. Vermeersch, J. T. Westerfield, Jessica O. Winter</i>	
<b>In Vivo Evaluation of Amorphous Nano Tricalcium Phosphate in Flexible Composites and Injectable Bone Cements</b> .....	6
<i>Oliver D. Schneider, Tobias J. Brunner, Stefan Loher, Franz E. Weber, Brigitte von Rechenberg, Wendelin J. Stark</i>	
<b>Nanotextured Titanium for An Improved Bone-Implant Interface</b> .....	8
<i>Joshua R. Bush, Barada K. Nayak, Lakshmi S. Nair, Mool C. Gupta, Cato T. Laurencin</i>	
<b>Electrospun Mats Modified by Layer-by-Layer Assembly for Use as Proton Exchange Membranes</b> .....	11
<i>J. Nathan Ashcraft, Paula T. Hammond</i>	
<b>Dramatic Changes in Glass Transition Temperature and Physical Aging Via Covalent Attachment or Attractive Interactions Between Polymer and Nanofiller</b> .....	12
<i>Perla Rittigstein, John M. Torkelson</i>	
<b>Influence of Interfacial Reactivity and Viscoelastic Response on Adhesion</b> .....	13
<i>E. Jason Robinette, Andres Bujanda, Robert Jensen, Steven McKnight</i>	
<b>Developing Composites of Polymer Microgels and Titania Nanoparticles for Photocatalytic Degradation</b> .....	14
<i>Cecil Coutinho, Vinay K. Gupta</i>	
<b>Highly Magnetic Hydrogel Composites for Magnetic Actuators or Artificial Muscle Applications</b> .....	18
<i>Fabian M. Koehler, Roland Fuhrer, Evagelos K. Athanassiou, Wendelin J. Stark</i>	
<b>Metal-Support Interactions In High-Temperature Stabilized Nanocomposites</b> .....	19
<i>Rahul D. Solunke, Tengfei Liu, Götz Vesper</i>	
<b>Diffusion, Mass Uptake, and Free Volume Behavior of Polymer Thin and Ultra-Thin Films</b> .....	20
<i>Richard Lawson, Peter J. Ludovice, Clifford L. Henderson</i>	
<b>Modeling Surfactant and Drug Transport from P-Hema Hydrogels</b> .....	21
<i>Yash Kapoor, Anuj Chauhan</i>	
<b>Diffusion and Interfacial Behavior of PDMS-Water Systems</b> .....	22
<i>Ahmed E. Ismail, Gary S. Grest, David R. Heine, Mark J. Stevens, Mesfin Tsige</i>	
<b>Surface Infusion of Colorants and Nanoparticles into Processed Thermoplastics</b> .....	23
<i>Ronald C. Hedden, Daniel M. Lentz, Robert A. Pyles</i>	
<b>Investigation of the Dissolution Behavior of Waste Polymers In Biodiesel</b> .....	24
<i>Ying Zhang, Surya K. Mallapragada, Balaji Narasimhan</i>	
<b>Atomistic Simulation of the Diffusion of Small Gas Molecules in Polyisobutylene</b> .....	25
<i>Kavitha ChElakara Satyanarayana, Jens Abildskov, Rafiqul Gani, Georgia Tsolou, Vlasios Mavrantzas</i>	
<b>Thermoplastic Elastomers Containing Crystalline and Glassy Components from Single-Phase Melts</b> .....	26
<i>John P. Bishop, Richard A. Register</i>	
<b>Thin Film Morphologies of Rod-Coil Block Copolymer</b> .....	29
<i>Manas R. Shah, Venkat Ganesan</i>	
<b>Symmetric Diblock Copolymers In Nanopores: Self-Consistent Field Calculations</b> .....	30
<i>Dong Meng, Qiang Wang</i>	
<b>Tunable Nanophase Segregation of Gradient Copolymers: Ordering In Novel Materials with Sinusoidal Composition Profiles across Lamellar Nanodomains</b> .....	31
<i>Michelle Mok, Christopher J. Ellison, Wesley Burghardt, John M. Torkelson</i>	
<b>Novel Characterization of Critical Micelle Concentrations of Block and Gradient Copolymers In Homopolymer: Effects of Sequence Distribution, Composition and Molecular Weight</b> .....	32
<i>Robert W. Sandoval, Daniel Williams, Christopher Wong, Jungki Kim, Connie B. Roth, John M. Torkelson</i>	
<b>Well Ordered Polymer Melts from Low Molar Mass Surfactants upon Blending with Selectively Associating Additives</b> .....	33
<i>Vikram Daga, Vijay R. Tirumala, Curran Chandler, Alvin H. Romang, Eric Anderson, Eric K. Lin, James J. Watkins</i>	
<b>Crystalline Order In Nanoparticulate Thin Films by Continuous Convective Assembly</b> .....	34
<i>J. Alex Lee, Michael Tsapatsis</i>	
<b>Rapid Fabrication of Metal Organic Framework Thin Films Using Microwave-Induced Thermal Deposition</b> .....	35
<i>Yeonsick Yoo, Hae-Kwon Jeong</i>	

<b>Tuning the Wall Thickness, Pore Size, and Crystallinity of Mesoporous Titania Thin Films</b> .....	37
<i>Qingliu Wu, Stephen E. Rankin</i>	
<b>Synthesis of Highly C-Oriented AlPO<sub>4</sub>-5 Membranes</b> .....	38
<i>Enping Hu, Yi Li Winnie Huang, Zhiping Lai</i>	
<b>Preparation and Magnetic, Microwave Absorption Properties of Rare-Earth Doped Nano-Barium Ferrite Films</b> .....	39
<i>Ying Huang, Yuqing Li, Shuhua Qi, Yongfeng Yang</i>	
<b>Preparation of Rare-Earth Doped Nano-Strontium Ferrite Films</b> .....	40
<i>Yuqing Li, Ying Huang, Yongfeng Yang</i>	
<b>Past and Future of Modeling and Simulation for Plasma Processing</b> .....	41
<i>Demetre J. Economou</i>	
<b>Atomistic Simulations of Feature Scale Etch Profile Evolution</b> .....	42
<i>David B. Graves, Joseph J. Vegh</i>	
<b>Overcoming Patterning Challenges at the 32 Nm Nodes</b> .....	43
<i>Arpan Mahorowala</i>	
<b>From the Sawin Lab to NASA: Uses of Very Long Vacuum Tubes</b> .....	44
<i>Brett A. Cruden</i>	
<b>Highlights on Plasma-Surface Interactions – Honoring the Distinguished Career of Herbert H. Sawin</b> .....	45
<i>Jane P. Chang</i>	
<b>Targeted, Endosomal Polymer Delivery Vehicles for siRNA</b> .....	46
<i>Danielle S.W. Benoit, Craig L. Duval, Anthony J. Convertine, Allan S. Hoffman, Patrick S. Stayton</i>	
<b>Novel Graft Copolymers Enhance Cationic Lipid Mediated Delivery of Oligonucleotides</b> .....	47
<i>Lavanya Peddada, Nicole Harris, David Devore, Charles M. Roth</i>	
<b>Local Gene Delivery from Ecm Coated Poly (lactide co glycolide) Multiple Channel Bridges after Spinal Cord Injury</b> .....	48
<i>Laura De Laporte, Anna Yan, Lonnie D. Shea</i>	
<b>Target Cell Controlled and Spatially Arranged Gene Delivery from Fibrin Hydrogels</b> .....	49
<i>Pedro Lei, Roshan Padmashali, Stelios T. Andreadis</i>	
<b>DNA Delivery from Enzymatically Degradable Synthetic Hydrogels to Invading Cells Results In Sustained Transgene Expression</b> .....	50
<i>Yuguo Lei, Tatiana Segura</i>	
<b>Targeting of Polymer Gene Carriers Increases Uptake in Cells but Reduces DNA Release and Overall Expression Efficiency</b> .....	51
<i>Yen Cu, Michael J. Caplan, W. Mark Saltzman</i>	
<b>Intracellular Trafficking of Pentablock Copolymer/ DNA Polyplexes In Cultured Human Cancer and Normal Cells for Gene Delivery</b> .....	52
<i>Bingqi Zhang, Surya K. Mallapragada</i>	
<b>Novel pH-Triggered Nanoparticles for Gene Delivery Have High Transfection and Low Cytotoxicity</b> .....	53
<i>Jin-Oh You, Debra T. Auguste</i>	
<b>Environmentally-Benign Polymer/Silicate Nanocomposites for Biomedical and Packaging Applications</b> .....	54
<i>Ioannis Zuburtikudis, Kyriaki Tornikidou, Sotirios I. Marras, Elpiniki Panayiotidou, Georgia Christofidou</i>	
<b>Composite Resins for Military Applications</b> .....	55
<i>Ian M. McAninch, Steven E. Boyd, John J. La Scala</i>	
<b>Polymer Nanocomposite Fabrication for G-M-R Sensor Application</b> .....	56
<i>Zhanhu Guo, Amar B. Karki, Hongfei Lin, H. Thomas Hahn, David P. Young, Kimberly M. McGrath, Doug Carpenter, Kevin D. Maloney</i>	
<b>Layer-by-Layer (LBL) Assembled Highly Conductive, Transparent and Robust Thin Carbon Nanotube Films for Optoelectronics</b> .....	58
<i>Jian Zhu, Bong Sup Shim, Nicholas A. Kotov</i>	
<b>Enhanced Melt Processing of Conductive Polymer Composites for Use In Multilayer Coextrusion</b> .....	60
<i>Randy A. Mrozek, Phillip J. Cole, Joseph L. Lenhart</i>	
<b>Shear Rheology and Microstructure of a Concentrated Short Glass Fiber-Filled Polybutylene Terephthalate (PBT)</b> .....	61
<i>Aaron P. R. Eberle, Gregorio M. Velez, Dr. Donald G. Baird, Peter Wapperom</i>	
<b>Selective Membrane Separations for Ammonia</b> .....	62
<i>William A. Phillip, Liang ChEn, Eddie Martono, Marc A. Hillmyer, Edward L. Cussler</i>	
<b>Membranes for Olefin Paraffin Separations</b> .....	62
<i>Mita Das, William J. Koros, Stephen Wilson, Douglas Galloway, Lisa Knight, Chunqing Liu</i>	
<b>Water Permeability and Water/Salt Selectivity Tradeoff in Polymers for Desalination</b> .....	63
<i>Ho-Bum Park, Alyson C. Sagle, James E. McGrath, Benny D. Freeman</i>	
<b>An Examination of Structural Parameters Affecting the Dynamics of Penetrant Transport In Glassy Polymers</b> .....	64
<i>Adam K. Ekenseair, Richard A. Ketcham, Nicholas A. Peppas</i>	
<b>Non-Fickian Diffusion of Water In Nafion</b> .....	65
<i>Daniel T. Hallinan Jr., Maria Grazia De Angelis, Marco Giacinti Baschetti, Giulio C. Sarti, Yossef A. Elabd</i>	

<b>Enhancement of Barrier Properties of Poly(ethylene terephthalate) by Antiplasticization</b> .....	66
<i>Jong S. Lee, Robert Kriegel, William J. Koros</i>	
<b>Morphological Control of Structures Self-Assembled from Strongly Interacting Nanoparticles and Colloids</b> .....	67
<i>Eric Jankowski, Sharon C. Glotzer</i>	
<b>Modelling Surfactant Dynamics In a System Containig Coalescent Particles</b> .....	68
<i>James E. Magee, Flor R. Siperstein</i>	
<b>Molecular Simulation of the Formation of Ultrathin Silica Films from Teos (tetraethoxysilane) Using Kinetic Monte Carlo</b> .....	69
<i>J. M. Don MacElroy, Taslima Akter, Thomas C. McDermott, Damian A. Mooney</i>	
<b>One-Pot Synthesis of Functional Mesoporous Materials</b> .....	70
<i>Alessandro Patti, Allan D. Mackie, Flor R. Siperstein</i>	
<b>Stability Analysis of H<sub>2</sub> Clathrate Hydrates by Ab Initio Calculations</b> .....	71
<i>Jae W. Lee, Sangyong Lee, Prasad Yedlapalli</i>	
<b>Synthesis and 2-Dimensional Modeling of Self-Propagating High-Temperature Synthesis of La<sub>0.6</sub>Sr<sub>0.4</sub>MnO<sub>3</sub></b> .....	72
<i>Sidney Lin, Jiri Selig, Lauren Griffin</i>	
<b>Novel, Nanostructured, Immiscible a/b Polymer Blends Made by Conventional Melt Processing: Addition of a/c Gradient Copolymer as An Interfacial Compatibilizer</b> .....	93
<i>Robert W. Sandoval, Jungki Kim, John M. Torkelson</i>	
<b>On the Equivalence of Glass Transition Temperatures In Polymer Nanocomposites and Polymer Thin Films</b> .....	94
<i>Venkat Ganesan, Jamie Kropka, Victor Pryamitsyn</i>	
<b>High-Toughness, Hierarchically Structured Polyurethane Films from Exponential Lbl Assembly</b> .....	95
<i>Paul Podsiadlo, Eugene Kheng, Amit K. Kaushik, Harish Iyer, Hyoung-Sug Kim, Si-Tae Noh, Anthony M. Waas, Ellen M. Arruda, Nicholas Kotov</i>	
<b>Polythiophene-Gold Nanoparticle Hybrid Systems: Langmuir-Blodgett Assembly of Nano-Structured Films</b> .....	96
<i>Sundaramurthy Jayaraman, Ting Yu Liew, Prashun Gorai, MP Srinivasan</i>	
<b>Synthesis of Single Wall Carbon Nanotube-Polymer Composites by a Novel Two Steps Approach</b> .....	97
<i>Pu Zhang, David Henthorn</i>	
<b>Nanoscale Ordering of Polymers Adsorbed on Nanotubes</b> .....	98
<i>Simcha Srebnik, Inna Gurevitch, Stanislav Levchenko</i>	
<b>Plasma-Induced Structural Transitions In Materials</b> .....	106
<i>Eray S. Aydil, Michael Behr</i>	
<b>Herb Sawin and DuPont: 25 Years of Cooperative Research and Development</b> .....	107
<i>Michael Mocella</i>	
<b>Modeling Plasma-Surface Interactions and Their Role in Inducing Structural Transitions</b> .....	108
<i>Dimitrios Maroudas</i>	
<b>Reaction Mechanisms in Plasma Etching of High-K Materials</b> .....	109
<i>Jane P. Chang</i>	
<b>Reception to AIChE Area 8e Special Symposium</b> .....	110
<i>Jane P. Chang</i>	
<b>A Mechanistic Modeling Approach to the Design and Evaluation of Polymeric Drug Delivery Systems</b> .....	111
<i>Ashlee N. Ford, Daniel W. Pack, Richard D. Braatz</i>	
<b>Cell Uptake of Morphologically Distinct Polymer Micelles</b> .....	112
<i>Takamasa Harada, Karthikan Rajagopal, Dennis E. Discher</i>	
<b>Synthesis and Evaluation of Peptide-Functionalized Polymersomes for Targeted Drug Delivery to Colon Cancer Cells</b> .....	113
<i>Todd Pangburn, Frank S. Bates, Efrosini Kokkoli</i>	
<b>Fully Bioresorbable Polymeric Vesicles for Therapeutic Applications</b> .....	114
<i>Dalia H. Levine, P. Peter Ghoroghchian, Jaclyn Freudenberg, Geng Zhang, Guizhi Li, Kevin P. Davis, Frank Bates, Michael J. Therien, Ramachandran Murali, Daniel A. Hammer</i>	
<b>A Novel Linear Dendritic Amphiphilic Block Copolymer as a Viable Drug Delivery Carrier</b> .....	115
<i>Zhiyong Poon, Paula T. Hammond, Shujun Chen</i>	
<b>Polymer Nanoparticles That Overcome the Mucus Barrier and Their Efficacy In a Mouse Model of Human Lung Cancer</b> .....	116
<i>Benjamin C. Tang, Michelle R. Dawson, Samuel K. Lai, Ying-Ying Wang, Ming Yang, Jie Fu, D. Neil Watkins, Justin Hanes</i>	
<b>Dynamics of NOVEL Multifunctional, Intelligent Mucoadhesive Copolymers for Oral Protein Delivery</b> .....	117
<i>F. Michael Marks III, Anthony M. Lowman</i>	
<b>Interfacial Shear Strength Studies of Plasma-Treated Ultra-High Molecular Weight Polyethylene Fibers</b> .....	119
<i>Jacqueline H. Yim, Daphne Pappas, Denis Kissounko, Alexander Fridman, Giuseppe R. Palmese</i>	
<b>One-Pot Synthesis of Silver Nanoparticles Embedded In Siloxane Rubber Matrix</b> .....	120
<i>Anubha Goyal, Ashavani Kumar, Shaily Mahendra, Pedro Jose Alvarez, P.M. Ajayan</i>	
<b>Influence of Nanoparticles on the Local Mechanical Properties of Polymeric Materials</b> .....	121
<i>Robert A. Riggleman, Gregory N. Toepferwein, Juan J. de Pablo</i>	

<b>Physical and Chemical Properties of Polymer Impregnated Concrete on the Preparation Conditions</b> .....	122
<i>Won-Mook Lee, Chul Woo Lee, Du Hyun Ku, Jung Soon Park, Hun young Park, Priya Nair</i>	
<b>Long Glass Fiber Orientation In Thermoplastic Composites Using a Model That Accounts for the Flexibility of the Fibers</b> .....	128
<i>Kevin C. Ortman, Gregorio M. Velez, Aaron P. R. Eberle, Don Baird, Peter Wapperom</i>	
<b>Single Walled Carbon Nanotube Fluorescence Modulation In Response to Hydrogel Swelling</b> .....	129
<i>Paul W. Barone, René Ortiz, Jingqing Zhang, Michael S. Strano</i>	
<b>Effect of Block Copolymer Coated Nanoclay on Polystyrene Foams Under Supercritical Carbon Dioxide</b> .....	130
<i>Weibin Zha, Bin Zhu, Jintao Yang, L. James Lee</i>	
<b>Elastic Niches and Capillaries Tuned for 3D Matrix Control of Mesenchymal Stem Cell Differentiation</b> .....	137
<i>Matthew Raab, Karthikan Rajagopal, Florian Rehfeldt, Manu Tewari, Chi Wang, Dennis E. Discher</i>	
<b>Combinatorial Biomaterials as An Engineered Niche Platform for Inhibition of Stem Cell Transformation and Promotion of Stem Cell-Based Regeneration</b> .....	138
<i>Er Liu, Hiral Patel, Hak-Joon Sung, Joachim Kohn, Prabhas Moghe</i>	
<b>Tendon Tissue Engineering Using Mechanical Stimulation of Mesenchymal Stem Cells</b> .....	139
<i>Rita Abousleiman, Peter S. McFetridge, Vassilios I. Sikavitsas</i>	
<b>Directed Differentiation of Embryonic Stem Cells to Cardiomyocytes in a Bioreactor</b> .....	140
<i>Abhirath Parikh, Dong H. Jing, Daniel E. Kehoe, Emmanuel (Manolis) S. Tzanakakis</i>	
<b>Integrated Expansion and Differentiation of Embryonic Stem Cells In Fibrous Bed Bioreactors</b> .....	149
<i>Ning Liu, Shang-Tian Yang</i>	
<b>Effect of Organismal Aging on Bone Marrow Derived Smooth Muscle Progenitor Cells</b> .....	150
<i>Juhee Han, Jin Yu Liu, Daniel D. Swartz, Stelios T. Andreadis</i>	
<b>Evoking a Mature SMC Phenotype in Mouse Embryonic Progenitor Cells</b> .....	151
<i>Paul Qu, Dany Munoz-Pinto, Mariah Hahn</i>	
<b>Covalent Molecular Assembly of Conducting Polymers on Silicon</b> .....	152
<i>Sundaramurthy Jayaraman, MP Srinivasan</i>	
<b>Novel Nanocomposites Made from Polymer and as-Received, Unmodified Graphite: Effects of Graphite Level and Dispersion on Mechanical and Electrical Properties, Crystallization, and Thermal Stability</b> .....	153
<i>Katsuyuki Wakabayashi, Philip Brunner, Cynthia Pierre, Sheldon Hewlett, John M. Torkelson</i>	
<b>Synthesis and Characterization of Cubic Co<sub>3</sub>O<sub>4</sub> Nanocomposites</b> .....	154
<i>Dwayne Vickers, Tamara Floyd-Smith, Lynden Archer</i>	
<b>Functionalization Multi-Walled Carbon Nanotube and Its Bismaleimide Composites of Properties</b> .....	155
<i>Changwen Song, Hongxia Yan, Yi Zhang, Yusheng Tang</i>	
<b>Effect of Nanoclays on the Network Formation and Phase Separation in Epoxy/thermoplastic Hybrid Nanocomposites</b> .....	166
<i>Juan A. Martínez-Sánchez, Fabiola Sánchez-Cervantes, Rocío Ortega-Pérez, Wendy P. Mas-Ku, Alejandro Gonzalez-Alvarez, Martín Arellano</i>	
<b>Preparation of SiO<sub>2</sub>/CE/BMI Composite Using Microwave Curing</b> .....	167
<i>Jingfei Zhao, Hongxia Yan, Hao Wu, Rongchang Ning</i>	
<b>Novel Catalysts for Selective Oxidation of Lower Alkanes</b> .....	180
<i>Prakash Biswas, Jungwon Woo, Vadim V. Gulians</i>	
<b>Tailoring CO Bond Energies Via Compositional Tailoring in Bimetallic Nanocatalysts</b> .....	181
<i>Anmin Cao, Götz Vöser</i>	
<b>Surfactant-Templated Synthesis and Catalytic Properties of Ordered Nanoporous Titania Supports Loaded with Platinum Nanoparticles</b> .....	183
<i>Arijit Bose, Jayashri Sarkar, Christopher J. Brooks, Vijay T. John, G. Ramanath</i>	
<b>A Comparison of Mesopore Templating Methods for Ceria-Zirconia-Yttria Catalysts</b> .....	184
<i>Prince Anyaba, Paul T. Fanson, Monica Javornik, David Bruce</i>	
<b>Synthesis and Characterization of Novel Hierarchically Structured Aluminosilicate Catalysts</b> .....	194
<i>Sikander H. Hakim, Brent H. Shanks</i>	
<b>Synthesis of Hierarchical Pore Zsm-5 on Silica Gel and Its Catalytic Performance for FCC Reaction</b> .....	195
<i>Hui Feng, Xiaoyin Chen, Johannes W. Schwank</i>	
<b>Preparation of Magnetic Hollow Zsm-5/Ni Composite Spheres and Fibers</b> .....	196
<i>Lixiong Zhang, Jianfeng Yao, Xiaohua Lu</i>	
<b>Plasma Etching for Metal Gate Electrode Fabrication in Conventional and Sub-Threshold Transistor Integration</b> .....	197
<i>Steven A. Vitale, Jakub Kedzierski, Nisha ChEcka, Craig L. Keast</i>	
<b>Interface Preparation for High Mobility Substrates</b> .....	198
<i>Anthony J. Muscat</i>	
<b>Applying Lessons Learned from An Etching Lab: The Role of O Atoms In PECVD</b> .....	199
<i>Colin A. Wolden</i>	
<b>Polymer Nano-Texturing and Stochastic Nano-Patterning Using Plasma Processing</b> .....	200
<i>Evangelos Gogolides, Angeliki Tseripi, Nikos Vourdas, Maria Elena Vlachopoulou, Katerina Tsougeni, Dimitrios Kontziampas</i>	

<b>CMP Pad Surface Analysis and the Components of Pad Surface Texture</b> .....	205
<i>Andrew S. Lawing</i>	
<b>Benign Silica and Germania Synthesis: From Monodisperse Nanoparticles and Nanocrystals to Porous Inorganic Hollow Shells and Thin Films</b> .....	206
<i>Zhuopeng Wang, Mark A. Snyder, Tracy M. Davis, Michael Tsapatsis</i>	
<b>Nanoparticle Precursors and Phase Selectivity In Hydrothermal Synthesis of Zeolite Beta</b> .....	207
<i>Nathan D. Hould, Raul F. Lobo</i>	
<b>The Spectroscopic Signature Nitrogen-Substituted Zeolites</b> .....	208
<i>Karl D. Hammond, Fulya Dogan, Geoffrey A. Tompsett, Murad Gharibeh, Vishal Agarwal, W. Curtis Conner, Clare P. Grey, Scott M. Auerbach</i>	
<b>Facile Synthesis of Zeolite Mcm-22 Via a Two-Step Sol-Gel Route</b> .....	209
<i>Jun Wang, Yajing Wu, Xiaohua Lu</i>	
<b>Zeolite Crystallization in Crosslinked Chitosan Hydrogels: Crystal Size Control and Chitosan Removal</b> .....	210
<i>Dan Li, Huanting Wang</i>	
<b>Metal Oxide/Zeolite Core-Shell Nanostructures: Synthesis and Characterizations</b> .....	211
<i>Easir A. Khan, Enping Hu, Zhiping Lai</i>	
<b>Porous Glass Beads with a Core-Shell Structure: Preparation and Applications</b> .....	212
<i>Yiwen Sun, Yujun Wang, Yangcheng Lu, Guangsheng Luo</i>	
<b>Molecular Layer Deposition of Nanoscale Organic Films</b> .....	213
<i>Paul W. Loscutoff, Stacey F. Bent</i>	
<b>Ald Copper-Palladium Thin Films for Molecular Electronics</b> .....	214
<i>Irene Hsu, Brian G. Willis</i>	
<b>Lanthanum Stabilization of Ald-Grown Hafnia</b> .....	215
<i>John G. Ekerdt, Tuo Wang</i>	
<b>Atomic Layer Deposited Y2O3 Thin Films Using Novel Cyclopentadienyl-Type Yttrium Precursor</b> .....	216
<i>Christos G. Takoudis</i>	
<b>Surface Reaction Mechanism during the Atomic Layer Deposition of Titanium Dioxide from Titanium Tetraisopropoxide and Ozone</b> .....	217
<i>Sumit Agarwal, Vikrant R. Rai</i>	
<b>Effect of Yb3+ Co-Doping on the Luminescent Properties of Er3+ :Y2O3 Thin Films</b> .....	219
<i>John Hoang, Jane P. Chang</i>	
<b>Molecular Relaxation Behavior of Fatty Acid Based Vinyl Ester Resins</b> .....	220
<i>Steven E. Boyd</i>	
<b>Modification and Functionalization of Soybean Oil Resins for Dielectric Applications</b> .....	221
<i>Mingjiang Zhan, Richard P. Wool</i>	
<b>Bio-Based Composite Repair Resins Containing No Hazardous Air Pollutants</b> .....	222
<i>Kevin Andrews, John La Scala, Scott Bingham, James M. Sands, Giuseppe R. Palmese</i>	
<b>Rheological Analysis of Cellulose Nanocrystal Aqueous Suspensions and Phase Behavior</b> .....	223
<i>Esteban E. Ureña-Benavides, Christopher L. Kitchens</i>	
<b>Thermal and Mechanical Properties of Polylactide-Nanoporous Zeolite Composites</b> .....	224
<i>Isinay E. Yuzay, Rafael Auras, Susan Selke</i>	
<b>Surface Modification of Wood Flour by Acid Chloride Esterification: Characterization and Performance of High Density Polyethylene/ Wood Flour Composites</b> .....	225
<i>Yongcheng Zhang, Hossein Toghiani, Charles U. Pittman Jr., Yibin Anna Xue</i>	
<b>Polylysine Modified Hydrogel Coatings to Enhance the Neuro-Electrode Interface</b> .....	226
<i>Shreyas Rao, Michael Owens, Jessica O. Winter</i>	
<b>Matrix Dimensionality Alters Integrin Signaling and Neurite Outgrowth</b> .....	227
<i>Andreia S. Ribeiro, Erin Voss, Elizabeth M. Powell, Jennie B. Leach</i>	
<b>Reduction of Chondroitin Sulfate Proteoglycans to Increase Axonal Outgrowth In a Neuronal Co-Culture Model</b> .....	228
<i>Hannah M. Tuinstra, Amy C. Sebeson, Lonnie D. Shea</i>	
<b>Microparticle-Mediated Delivery of Interleukin-10 Plasmid DNA for the Treatment of Neuropathic Pain</b> .....	229
<i>Ryan Soderquist, Evan Sloane, Scott Johnson, Linda Watkins, Erin Milligan, Melissa Mahoney</i>	
<b>Development of Super-Low Fouling and Bacterial Resistant Surface Coatings</b> .....	230
<i>Mathew Bernards, Gang ChEng, Shaoyi Jiang</i>	
<b>Chemical Cross-Linking of Select Polyelectrolyte Nanofilms to Control Mechanical Properties for Use In Cell Contacting Applications</b> .....	231
<i>Jennifer A. Phelps, Paul R. Van Tassel</i>	
<b>Resorbable Polyurethane/bone Composites for Bone Tissue Engineering</b> .....	232
<i>Jerald Dumas, Scott A. Guelcher</i>	
<b>Polysaccharide-Based Tissue Adhesives for Closure of Surgical Wounds</b> .....	234
<i>Sujata K. Bhatia, Samuel D. Arthur, H. Keith ChEnault, Garret D. Figuly, Sharon L. Haynie, George K. Kodokian</i>	
<b>Controlled Axon Regeneration In the Spinal Cord</b> .....	237
<i>Jason Coleman, Anthony Lowman</i>	

<b>Towards the Rational Design of Biodegradable Controlled Release Vehicles</b> .....	238
<i>Sam N. Rothstein, William Federspiel, Steven Little</i>	
<b>Effects of Multi-Valent Ionic Interactions on Polyelectrolyte Brushes</b> .....	239
<i>Robert Farina, Matthew Tirrell</i>	
<b>Highly Conductive Ionic Liquid-Homopolymer Mixtures</b> .....	240
<i>Liang Gwee, David Salas-de la Cruz, Karen I. Winey, Yossef A. Elabd</i>	
<b>Solute Induced Phase Transitions In Nafion</b> .....	241
<i>Jay B. Benziger, Paul W. Majsztrik, Christine Ranney, Andrew B. Bocarsly</i>	
<b>Polymers Incorporating Pi-Conjugated Small Molecules: Processing Characteristics, Impact on Electronic Properties, and Resistance to Ionizing Radiation</b> .....	242
<i>Robert J. Klein, John L. Schroeder, Shannon M. Cole, Michael E. Belcher, Phillip J. Cole, Joseph L. Lenhart</i>	
<b>Characterization of the Temperature Dependent Chemical and Mechanical Properties of a Diels-Alder Based Crosslinked Polymeric Material</b> .....	243
<i>Brian Adzima, Christopher J. Kloxin, Timothy F. Scott, Christopher N. Bowman</i>	
<b>Highly Selective Enzymatic Ring-Opening Polymerization: Syntheses and Characterizations of Thermoplastic Di-Block Co-Polyesters Containing Poly[(R)-3-Hydroxybutyrate] and Poly(<math>\alpha</math>-Caprolactone) Blocks</b> .....	244
<i>Shiyao Dai, Zhi Li</i>	
<b>Mechanical Properties of Semicrystalline Multiblock Copolymers</b> .....	259
<i>Manas R. Shah, Venkat Ganesan</i>	
<b>In Vivo Delivery of siRNA Targeting Tnf-<math>\alpha</math> With Polyketal Nanoparticles</b> .....	260
<i>Sungmun Lee, Stephen Yang, Chen-Yu Kao, Niren Murthy</i>	
<b>Combinatorial Design of Multiantibody-Targeted Immunolipopolyplex Nanoparticles of Oligonucleotides for Leukemia Therapy</b> .....	261
<i>Yuan Yuan, Bo Yu, Chaofang Yue, Chen Guan Koh, Andrew Morss, Gregory Lafyatis, Michael Paulaitis, L. James Lee</i>	
<b>Utilizing pH-Responsiveness and Mixed-Amine Ratio to Create An Enabling Technology for Effective Gene Delivery</b> .....	262
<i>Louisa R. Carr, Shaoyi Jiang</i>	
<b>The Extracellular Matrix Environment Modulates Non-Viral Gene Transfer to Mouse Mesenchymal Stem Cells</b> .....	263
<i>Anandika Dhaliwal, Tatiana Segura</i>	
<b>Extracellular Matrix Protein Orientation by Adsorption on Self-Assembled Monolayers Controls Nonviral Gene Delivery</b> .....	264
<i>Beth A. Duensing, Angela K. Pannier</i>	
<b>In Vitro Gene Delivery with Non-Cytotoxic Cationic Oligopeptide Amphiphiles</b> .....	265
<i>Nikken Wiradharma, Yen Wah Tong, Yi Yan Yang</i>	
<b>Cationic Core/Shell Nanoparticles Self-Assembled from Cholesterol-Conjugated Oligopeptides as An Efficient Gene Delivery Vector</b> .....	266
<i>Fanny Tandiono, Xin Dong Guo, Chuan Guan Tan, Ding Yue Khor, Majad Khan, Yi Yan Yang</i>	
<b>Covalent Tethering of Plasmid DNA for Substrate-Mediated Gene Delivery</b> .....	267
<i>Kory M. Blocker, Kristi L. Kück, Millicent O. Sullivan</i>	
<b>Atomic Layer Deposition Surface Modified Porous Polymer for Tissue Engineering Applications</b> .....	268
<i>Xinhua Liang, Aaron D. Lynn, David M. King, Stephanie J. Bryant, Alan W. Weimer</i>	
<b>Antibacterial Silver-Containing Nanocomposites for Bone-Defect Repair</b> .....	269
<i>Oliver D. Schneider, Stefan Loher, Robert N. Grass, Tobias J. Brunner, Wendelin J. Stark</i>	
<b>In Situ Synthesis of Hydroxyapatite in Block Copolymer Hydrogels</b> .....	270
<i>David M. Griffin, Surita R. Bhatia</i>	
<b>Fiber Reinforced Hydrogels as a Synthetic Meniscus Replacement</b> .....	271
<i>Julianne L. Holloway, Giuseppe R. Palmese, Anthony M. Lowman</i>	
<b>Mechanical Performance and Microstructure of Biomimetic PEG-Agarose Interpenetrating Networks as Determined by Dynamic Mechanical Analysis and AFM</b> .....	273
<i>Joseph Lomakin, Michael Detamore, Stevin H. Gehrke</i>	
<b>Optimization of the Nanofibrous Structure of Non-Woven Mats of Electrospun Biodegradable Nanocomposites Using Response Surface Methodology</b> .....	274
<i>Athanasia Tsimpliaraki, Stratis Svinterikos, Sotirios I. Marras, Ioannis Zuburtikudis, Costas Panayiotou</i>	
<b>Microfluidic Hydrogel Cultures for Analysis of Oxygen-Dependent Angiogenic Signaling by Tumor Cells</b> .....	281
<i>Nak Won Choi, Daniel J. Brooks, Kang-Yeol Park, Lawrence J. Bonassar, Claudia Fischbach-Teschl, Abraham D. Stroock</i>	
<b>'marker of Self' Proteins on Synthetics - Exploiting the Body's Own System of Distinguishing Foreign from Self</b> .....	282
<i>Richard Tsai, Pia Rodriguez, Dennis E. Discher</i>	
<b>Microengineered Co-Culture Substrates: Investigating Cell-Cell Interactions Using Selectively Degradable Hydrogels</b> .....	283
<i>Andreia S. Ribeiro, Filipa Maia, Ozlem Yasar, Binil Starly, Jennie B. Leach</i>	
<b>Surface Functionalization for Selective Cell Attachment</b> .....	284
<i>Anka N. Veleva, Daniel Heath, Cam Patterson, Stuart L. Cooper</i>	



<b>Polymeric Biomaterial Tuned to the Adhesion of Human Blood Outgrowth Endothelial Cells</b> .....	285
<i>Daniel Heath, Anka N. Veleva, John J. Lannutti, Cam Patterson, Stuart L. Cooper</i>	
<b>Effect of Biomimetic Substrate Microtopography on Intestinal Epithelial Cell Behavior</b> .....	287
<i>Lin Wang, Shashi K. Murthy, Gilda A. Barabino, Rebecca L. Carrier</i>	
<b>Effect of Structural Variations In Porous Scaffolds on Cell Growth</b> .....	288
<i>Pooja Iyer, Sundararajan V. Madihally</i>	
<b>Compositional Tuning of Bimetallic Nanoparticles for Low Temperature Carbon Nanotube Growth</b> .....	289
<i>Wei-Hung Chiang, R. Mohan Sankaran</i>	
<b>Design of a High Throughput Microwave Plasma Reactor for Bulk Production of Metal Oxide Nanowires</b> .....	290
<i>Jeong H. Kim, Vivekanand Kumar, Mahendra K. Sunkara</i>	
<b>Modeling Plasma-Surface Interactions and Their Role In Inducing Structural Transitions In Materials</b> .....	291
<i>Dimitrios Maroudas</i>	
<b>3-Dimensional Monte Carlo Profile Simulation and Experimental Measurements of Surface Roughness Under Plasma Etching</b> .....	292
<i>Wei Guo, Hiroyo Kawai, Herbert H. Sawin</i>	
<b>Simulation of Profile Evolution In Shallow Trench Formation by Plasma Etching</b> .....	299
<i>John Hoang, Jane P. Chang</i>	
<b>Molecular Dynamics Simulations of Plasma-Surface Interactions: Nanoscale Feature Etching on a Silicon Substrate</b> .....	300
<i>Joseph J. Végh, David B. Graves</i>	
<b>Stochastic Differential Charging and Its Effects on Charging Damage and Feature Profile Evolution during Plasma Processing</b> .....	301
<i>Eunsu Paek, Gyeong S. Hwang</i>	
<b>Coupling Gas Phase and Surface Reaction Kinetics In C4F8 and SF6 Plasmas Used for Si and SiO2 Etching</b> .....	302
<i>George Kokkoris, Evangelos Gogolides, Andy Goodyear, Mike Cooke</i>	
<b>Yield Stress of Ethylene-Methacrylic Acid Copolymers and Ionomers</b> .....	304
<i>Robert C. Scogna, Richard A. Register</i>	
<b>Nanofilled and Nanoporous Epoxies: Processing Routes, Size-Scale Transitions, and Mechanical Properties</b> .....	307
<i>Robert J. Klein, John L. Schroeder, Joseph L. Lenhart</i>	
<b>Dynamics of Polymer Nanocomposites Under Stress</b> .....	308
<i>Robert A. Riggleman, Gregory N. Toepferwein, Juan J. de Pablo</i>	
<b>Multi-Length Scale Structure of Segmented PEG-Based Ionomers</b> .....	309
<i>Wenqin Wang, Shichen Dou, Gregory J. Tudryn, Ralph H. Colby, Karen I. Winey</i>	
<b>Effect of Polymer Mobility on Conductivity of Single-Ion Conductors</b> .....	313
<i>Kokonad Sinha, Janna K. Maranas</i>	
<b>Aggregation In Dilute Solutions of High Molar Mass Poly(ethylene) Oxide and Its Effect on Polymer Turbulent Drag Reduction</b> .....	314
<i>Abhishek M. Shetty, Michael J. Solomon</i>	
<b>A Study of Diffusion and Release in Porous Alumina</b> .....	315
<i>Bradley R. Gordon, Charles E. Lockett, Douglas S. English, Sheryl H. Ehrman, Daniel D. Lim</i>	
<b>Infusion of Fluids into Powder Beds</b> .....	316
<i>David B. Todd, Costas G. Gogos, Ming-Wan Young, Linjie Zhu, Bainian Qian, ChEn Wan</i>	
<b>Mechanically Robust Nanoparticle Stabilized Transparent Liquid Marbles</b> .....	327
<i>Prasad Bhosale, Mahesh V. Panchagnula, Holly A. Stretz</i>	
<b>Microfluidic Assembled Lipopolyplex for Antisense Oligonucleotide Delivery</b> .....	328
<i>ChEe Guan Koh, Xulang Zhang, L. James Lee</i>	
<b>TiO2 Hollow Nanofibers Templated by Electrospun Polyethylene Oxide (PEO) Aqueous Solutions</b> .....	329
<i>Shinsuke Nagamine, Yoshitaka Tanaka, Masahiro Ohshima</i>	
<b>Reconfigurable Microfluidics with Metallic Containers</b> .....	335
<i>Hongke Ye, Jung-Rae Park, David H. Gracias</i>	
<b>Cell Detachment from Porous Poly(L-Lactic Acid) Scaffolds Cultured Under Flow Perfusion for Bone Tissue Engineering</b> .....	336
<i>Samuel VanGordon, Roman S. Voronov, Dimitrios V. Papavassiliou, Vassilios I. Stikavitsas</i>	
<b>Comparing the Attachment and Growth of Bone Cells on Chitosan Bound by Two Silane Molecules to Titanium for Use In Joint Replacements</b> .....	337
<i>Holly J. Martin, Kirk H. Schulz, Joel D. Bumgardner</i>	
<b>Macroporous Cyclic Acetal Hydrogels for Orbital Floor Regeneration</b> .....	340
<i>Martha W. Betz, John F. Caccamese, Domenick P. Coletti, John J. Sauk, John P. Fisher</i>	
<b>The Effects of Material Properties of Hydrogels for Cartilage Tissue Engineering</b> .....	342
<i>Kara L. Spiller, Anthony Lowman</i>	
<b>Novel PDMS-PEO Hydrogels for Tissue Engineered Vascular Grafts</b> .....	343
<i>Allen Bullick, Mariah Hahn</i>	

<b>Biodurable Reticulated Elastomeric Matrix as Scaffolds for Tissue Engineering</b> .....	344
<i>Craig Friedman, Yong Song, Arindam Datta, Lawrence Lavelle, Rujul Majmundar</i>	
<b>Scaffolds Covalently Immobilized with VEGF and Angiopoietin-1 to Promote Angiogenesis in Engineered Cardiac Tissues</b> .....	347
<i>Lorraine L. Y. Chiu, Milica Radisic</i>	
<b>Making of a New Liver Using Decellularized Livers as Scaffolds</b> .....	353
<i>Basak E. Uygun, Alejandro Soto-Gutiérrez, Carley Shulman, Korkut Uygun, François Berthiaume, Martin Yarmush</i>	
<b>Smart Packaging: Localized Drug Delivery to Treat Ovarian Cancer</b> .....	354
<i>Eva Christabel Williams, Ryan Toomey, Norma Alcantar</i>	
<b>Anti-HER2/neu Liposomes for Triggered Content Release In Ovarian and Breast Cancer Cells</b> .....	355
<i>Shrirang Karve, Ali Alaouie, Stavroula Sofou</i>	
<b>An In Vivo Examination of the Vesosome, a Novel Multi-Compartment Drug Carrier</b> .....	356
<i>Benjamin J. Wong, Shelley Esakoff, Joseph A. Zasadzinski</i>	
<b>PR_B Peptide-Labeled Liposomes for Targeting Prostate Cancer Cells</b> .....	357
<i>Döne Demirgöz, Ashish Garg, Efrosini Kokkoli</i>	
<b>Release of Model Macromolecules from Self-Assembling Peptide Hydrogels</b> .....	358
<i>Monica C. Branco, Norman J. Wagner, Darrin J. Pochan, Joel P. Schneider</i>	
<b>Targetted Delivery of Doxorubicin into Human Liver Cancer Cells Encapsulated with D-Galactose-Peptide Amphiphile</b> .....	359
<i>Yen Wah Tong, Nikken Wiradharma, Shao Qiong Liu, Yi Yan Yang</i>	
<b>Implantable Hydrogel Beads Entrapping PLGA-Paclitaxel Microspheres: Exploring the Effects of near-Zero Order Drug Release for Intracranial ChEMotherapy</b> .....	360
<i>Sudhir H. Ranganath, Alvin Yang, Ying Ying Chan, Jinghan Huang, William B. Krantz, Chi-Hwa Wang</i>	
<b>An Analysis of the Deposition Mechanisms Involved during Self-Limiting Growth of Metal Oxides by Pulsed PECVD</b> .....	368
<i>Michael T. Seman, David N. Richards, Colin A. Wolden</i>	
<b>Kinetic Monte Carlo Simulations of Surface Growth during Plasma Deposition of Silicon Thin Films</b> .....	369
<i>Sumeet C. Pandey, Tejinder Singh, Dimitrios Maroudas</i>	
<b>Investigation of the Growth Mechanism during Plasma-Assisted Deposition of a-C:H</b> .....	370
<i>Bhavin N. Jariwala, Cristian V. Ciobanu, Sumit Agarwal</i>	
<b>Remote Atmospheric Pressure Plasma Activation of Polymers</b> .....	371
<i>Eleazar Gonzalez II, Michael Barankin, Peter C. Guschl, Robert F. Hicks</i>	
<b>Thin-Film Deposition on Nanoparticles and Nanowires In Low-Pressure Plasma</b> .....	372
<i>Anaram Shahravan, Themis Matsoukas</i>	
<b>Multiferroic BiFeO<sub>3</sub> Thin Films Deposited by MOCVD Method</b> .....	373
<i>Manish Singh, Yi Yang, Christos G. Takoudis</i>	
<b>Interesting Characteristics of a Vapor-Deposited Silica Thin Film</b> .....	374
<i>A. Anderson, W. Robert Ashurst</i>	
<b>Tunable Polymer Networks Based on Specific Hydrogen Bonding Motifs</b> .....	375
<i>Kamlesh P. Nair, Marcus Weck, Victor Breedveld</i>	
<b>Structure and Rheology of Fibrin Networks as Probed with Small Angle Scattering</b> .....	376
<i>Danilo C. Pozzo, Kathleen Weighandt</i>	
<b>Characterization of the Network Structure of Molecularly Imprinted Polymers by Determination of Kinetic Chain Length Distribution</b> .....	377
<i>Vishal D. Salian, Mark E. Byrne</i>	
<b>Structural Characterization of Protein-Imprinted Gels Using Lattice Monte Carlo Simulation</b> .....	378
<i>Simcha Srebnik, Liora Levi</i>	
<b>Influence of Network Structural Modifications on the Dynamic Relaxation Characteristics of Crosslinked Poly(ethylene oxide) Copolymer Membranes</b> .....	387
<i>Douglass S. Kalika, Jeffrey J. Richards, Victor A. Kusuma, Benny D. Freeman</i>	
<b>Mechanical Properties of the Poly (HEMA-co-NVP) Hydrogel: Molecular Dynamics Simulation Approach</b> .....	388
<i>Seung Soon Jang, Seung Geol Lee, Giuseppe Brunello, David Bucknall, Hannah Lee</i>	
<b>Fast Dynamics of Semiflexible Chain Networks of Self-Assembled Peptides</b> .....	389
<i>Monica C. Branco, Florian Nettekheim, Joel P. Schneider, Norman J. Wagner</i>	
<b>Viscoelastic Modeling of Porous Matrices Used In Tissue Engineering</b> .....	390
<i>Rahul D. Mirani, Sundararajan V. Madhally</i>	
<b>Enhancing the Biomechanical Properties of Chitosan Scaffolds for Tissue-Engineered Heart Valves</b> .....	391
<i>Mohammad Z. Albanna, Therese H. Bou-Akl, Henry L. Walters III, Howard W. T. Matthew</i>	
<b>Plasma Enhanced ChEmical Vapor Deposited Poly (2-hydroxyethyl methacrylate) for Fabricating a Degradable, Biocompatible Intestinal Tissue Culture Substrate</b> .....	394
<i>Courtney A. Pfluger, Rebecca L. Carrier, Daniel D. Burkey</i>	
<b>Designing 3D Photopolymer Gels to Regulate Biomechanical Cues</b> .....	396
<i>Garret Nicodemus, Idalis Villanueva, Stephanie J. Bryant</i>	

<b>Multifunctional Tissue Engineering Scaffolds Via Organic Sol-Gel Chemistry</b> .....	397
<i>Hugh Lippincott, Poonam Borgaonkar, Sachin Sharma, Ming Chen, Sankha Bhowmick, Daniel F. Schmidt</i>	
<b>A Fiber-Reinforced, Large Vessel Chitosan Scaffold for Pediatric Applications</b> .....	398
<i>Irina Robu, Henry L. Walters III, Howard W. T. Matthew</i>	
<b>Accelerated Dermis Promotes Neovascularization and Epidermal Regeneration: Implications for Wound Healing</b> .....	401
<i>Liana M. Lugo, Stelios T. Andreadis</i>	
<b>Characterizing the Effect of 3D Porous Structure on Flow Properties In Tissue Engineering Scaffolds</b> .....	402
<i>Benjamin J. Lawrence, Sundararajan Madhally</i>	
<b>Design and Assembly of Anisotropic Particles: The Shapes of Things to Come (With a Little Help from Computer Simulation)</b> .....	403
<i>Sharon C. Glotzer</i>	
<b>Computational Nanotribology - Understanding Lubrication at the Nanoscale Using Molecular Simulation</b> .....	404
<i>Peter T. Cummings, Yongsheng Leng, Hugh Docherty</i>	
<b>Plasma-Surface Interactions and the Control of Nanostructure</b> .....	405
<i>David B. Graves</i>	
<b>Synthetic Scaffolds for Tissue Engineering</b> .....	406
<i>Antonios G. Mikos</i>	
<b>The Road to Low-Cost and High-Efficiency Solar Cells Via Self-Assembled Nanomaterials</b> .....	407
<i>Hugh W. Hillhouse</i>	
<b>Dispersion of Semiconductor Nanoparticles In a Polymer Matrix: a Fluorescence Energy Transfer Study</b> .....	408
<i>Shyam V. Vaidya, M. Lane Gilchrist, Charles Maldarelli, Alexander Couzis</i>	
<b>Characterization of Biocompatible Polymer Composites</b> .....	409
<i>James J. Lee, Gerold A. Willing</i>	
<b>Hierarchical Polymer-Based Nanocomposites for Electro-Magnetic Interference (EMI) Shielding</b> .....	410
<i>J. J. Huang</i>	
<b>Carbon Fiber Based Multifunctional Energy Storage Structural Composites</b> .....	411
<i>Tony Pereira, Zhanhu Guo, Simon Nieh, H. Thomas Hahn</i>	
<b>Development of Remendable Polymers with Thermally Reversible Bonds</b> .....	412
<i>Amy M. Peterson, Giuseppe R. Palmese</i>	

## VOLUME 2

<b>Draw Ratio Enhancement in Non-Isothermal Melt Spinning</b> .....	415
<i>Balram Suman, Satish Kumar</i>	
<b>The Mechanics of Stable Electrospinning Polymer Jets and Consequences for Measurement of Polymer Extensional Viscosity</b> .....	416
<i>Matthew H. Helgeson, Kristie N. Grammatikos, Norman J. Wagner, Joseph Deitzel</i>	
<b>Nozzle-Less Fiber Nanospinning – a Rapid and Efficient Method for Fabrication of Micron Diameter Fibers</b> .....	417
<i>Stoyan K. Smoukov, Orlin Velev</i>	
<b>Structure and Rheology In a Model Non-Polar Clay Nanocomposite</b> .....	418
<i>Saswati Pujari, Wesley R. Burghardt, Marie-Claude Heuzey, Christophe Mobuchon, Pierre J. Carreau</i>	
<b>Rheological Characterization of Supercritical CO<sub>2</sub> Processed Polystyrene-Clay Nanocomposites</b> .....	419
<i>Robert Bellair, Mihai Manitiu, Steven E. Horsch, Esin Gulari, Rangaramanujam M. Kannan</i>	
<b>Interfacial Adhesion and Strain Hardening in Polymer Nanocomposites</b> .....	420
<i>Krishnamurthy Jayaraman, Tanmay J. Pathak</i>	
<b>Investigation of NMR Signal Loss during Hydrolytic Polycondensation of Organoalkoxysilanes</b> .....	421
<i>Jyothirmai Ambati, Stephen E. Rankin</i>	
<b>Kinetic Modeling of Single-Site Olefin Polymerization with Multi-Response Data: Even Models with Many Parameters Cannot Fit An Elephant</b> .....	422
<i>Krista A. Novstrup, Grigori A. Medvedev, Nicholas E. Travia, Corneliu Stanciu, Jeffery M. Switzer, Thomas A. Manz, W. Nicholas Delgass, Mahdi M. Abu-Omar, James M. Caruthers</i>	
<b>Kinetics of Carbon Accelerated Radical Polymerization (CARP)—the Role of Diffusional Limitations</b> .....	423
<i>Ruohua Xiong, Fouad Teymour, Hamid Arastoopour</i>	
<b>Well Defined Nanoparticles from Controlled Inverse Miniemulsion Polymerization</b> .....	425
<i>Gengqiang Qi, Christopher W Jones, F. Joseph Schork</i>	
<b>Mathematical Modeling of a Dispersive Suspension Polymerization</b> .....	426
<i>Carla Luciani, Yunju Jung, Joong Jin Han, Kyu Yong Choi</i>	
<b>Kinetic Study of the Factors Affecting the Compositional Gradient along Copolymer Chains</b> .....	427
<i>Lin Wang, Linda J. Broadbelt</i>	
<b>Reaction Analysis of “Living/controlled” Polymerization Techniques Used to Enhance Binding Characteristics of Highly Crosslinked Imprinted Polymer Networks</b> .....	428
<i>Asa D. Vaughan, Mark E. Byrne</i>	

<b>Simulation Studies on the Tensile Properties of Polymer Networks with Heterogeneous Microstructure</b> .....	429
<i>Bernardo M. Aguilera-Mercado, Claude Cohen, Fernando A. Escobedo</i>	
<b>Flexoelectric Networks from Bent-Core Nematic Liquid Crystal Polymers</b> .....	430
<i>Rafael Verduzco, Martin Chambers, Phillip F. Britt, Antal Jáklí, Samuel Sprunt, James T. Gleeson</i>	
<b>Stress-Strain Behavior of Smectic Main-Chain Elastomers</b> .....	431
<i>Ronald C. Hedden, Daniel M. Lentz, Harshad P. Patil</i>	
<b>Monte Carlo Simulation of Liquid Crystalline Elastomers</b> .....	432
<i>Brian T. Gettelfinger, Raj Shekar, Juan J. de Pablo</i>	
<b>Cavitation Rheology and Fracture Behavior of Polyacrylamide Hydrogels</b> .....	433
<i>Santanu Kundu, Alfred J. Crosby</i>	
<b>Well-Defined Polymeric Structures Based on Novel Degradable Cross-Linkers</b> .....	434
<i>Efrosyni Themistou, Costas S. Patrickios</i>	
<b>The Impact of Sol Molecular Weight on the Mechanical and Adhesive Properties of Polymer Gels</b> .....	435
<i>Randy A. Mrozek, Phillip J. Cole, Joseph L. Lenhart</i>	
<b>Fine-Tuning Notch Signaling to Promote Angiogenesis</b> .....	436
<i>Lan Cao, Praveen Arany, Yuan-Shuo Wang, David J. Mooney</i>	
<b>Induction of Angiogenesis In Tissue Engineered Scaffolds for Bone Repair: A Combined Gene Therapy-Cell Transplantation Approach</b> .....	437
<i>Ehsan Jabbarzadeh, Cato T. Laurencin</i>	
<b>Assessment of Biotin-Streptavidin Surface Stability In the Presence of Various Proteases for Controlled Release of DNA Polyplexes</b> .....	438
<i>Talar Tokatlian, Tatiana Segura</i>	
<b>Extracellular Matrix Composition Influence on Gene Delivery In Hydrogels</b> .....	439
<i>Jackie A. Shepard, Lonnie D. Shea</i>	
<b>Hydrogel Composite Materials for Long-Term Neurotrophin Delivery In Neural Prostheses</b> .....	440
<i>Ning Han, Jed Johnson, John J. Lanutti, Jessica O. Winter</i>	
<b>Release of Insulin Like Growth Factor-1/Green Fluorescent Protein Plasmids from PEG Coated Porous Eh Networks</b> .....	441
<i>Erin E. Falco, J. Scott Roth, John P. Fisher</i>	
<b>A Biodegradable, Immunoprotective, Dual Nanoporous Capsule for Cell-Based Therapies</b> .....	442
<i>Xulang Zhang, Hongyan He, Chi Yen, W.S. Winston Ho, L. James Lee</i>	
<b>Direct Relationship Between Enhanced Gene and Matrix Protein Expression by Osteoblasts Exposed to Bioactive Glass Ions</b> .....	453
<i>Venu G. Varanasi, Nicole Shabnam Barkhordar, Eduardo Saiz, Peter Loomer, Bernadette Ancheta, Nakako Uritani, Antoni Tomsia, Sally J. Marshall, Grayson W. Marshall</i>	
<b>The Design of Wettability of Antifouling Materials on the Basis of the Molecular Properties of Marine Fouling Bacteria</b> .....	456
<i>Bong-Jae Park, Travis Haines, Nehal I. Abu-Lail</i>	
<b>Fibrin-Infiltrated Small Intestine Submucosa as a Scaffold for Tissue Engineered Vessels Using Hair-Follicle Derived Smooth Muscle Progenitor Cells</b> .....	457
<i>Hao-Fan Peng, Jin Yu Liu, Juhee Han, Daniel D Swartz, Stelios T. Andreadis</i>	
<b>Cell-Level Selectivity from Engineered Placement of Binding Groups</b> .....	458
<i>Maria M. Santore, Jun Zhang, Surachate Kalasin, Vincent Rotello, Sudhanshu Srivastava</i>	
<b>Endogenous Growth Factor Gene Expression Profile of Bone Marrow Stromal Cells on 3D Porous Poly(Propylene Fumarate)/Hydroxyapatite Nanocomposites</b> .....	459
<i>Kyobum Kim, Minal Patel, David Dean, Antonios Mikos, John P. Fisher</i>	
<b>Effect of Glass-Forming Matrices on Phospholipid Bilayers during Biopreservation. A 31P NMR Line Shape Simulation Study</b> .....	460
<i>Pragati Jain, Sabyasachi Sen, Subhash Risbud</i>	
<b>Intracellular Uptake and Morphological Changes of Thermoresponsive and Degradable Nanogels</b> .....	462
<i>Gauri P. Misra, Mofya Diallo, Tao L. Lowe</i>	
<b>Graphene Stabilized Copper Nanoparticles as An Air-Stable Substitute for Silver and Gold In Low-Cost Ink-Jet Printable Electronics</b> .....	463
<i>Norman A. Luechinger, Evagelos K. Athanassiou, Wendelin J. Stark</i>	
<b>Spectroscopical Characterization of Thin Film Deposition Processes: Protective and Conversion Coatings</b> .....	464
<i>Jorge E. Gatica, Andrew R. Snell, Szabolcs Sofalvi, Wilfredo Morales Sr.</i>	
<b>Capping Ligand Effect on CdSe Quantum Dot Langmuir-Blodgett Monolayer Stability</b> .....	465
<i>Chander Radhakrishnan, Michael K. F. Lo, Miguel Garcia-Garibay, Harold G. Monbouquette</i>	
<b>Enhanced Field-Effect Mobility for Solution-Processable Organic Thin Film Transistors by Surface Modification with Organosilanes</b> .....	466
<i>Lin Jiang, Jie Zhang, Daniel R. Gamota, Christos G. Takoudis</i>	
<b>Optical Nanocomposite Thin Film Filter Undergoing Extreme Strains</b> .....	467
<i>Thad Druffel, Matt Lattis, Omar Buazza, Scott Farmer</i>	

<b>Hollow-Fiber-Based Adsorbent System for CO<sub>2</sub> Capture from Flue Gas</b> .....	475
<i>Ryan P. Lively, Ron R Chance, William J Koros, Harry W. Deckman, B. T. Kelley</i>	
<b>Repeated In Situ Crystallization: A Facile Route to Oriented Films of Metal-Organic Framework</b> .....	476
<i>Masaru Kubo, Watcharop Chaikittisilp, Tatsuya Okubo</i>	
<b>Response Studies of Microcapsules to pH, Ionic Strength and Osmotic Pressure</b> .....	477
<i>Shyam Kadali, Hitesh G. Bagaria, M. S. Wong</i>	
<b>Protein Adsorption on Biodegradable Polyanhydride Microspheres</b> .....	478
<i>Brenda R. Carrillo-Conde, Alicia Garza, James Anderegg, Balaji Narasimhan</i>	
<b>Injectable, In Situ Hardening Macromers for Bone Tissue Engineering</b> .....	479
<i>James D. Kretlow, Michael C. Hacker, Brandy B. Ma, Leda Klouda, Antonios G. Mikos</i>	
<b>Extensive Dark Cure from Controlled Polymerization Based on a Method Using Visible-Light Activated Initiator System</b> .....	480
<i>Dongkwan Kim, Jeffrey W. Stansbury</i>	
<b>Oligo(trolox) – Synthesis and Characterization of An Antioxidant Polymer Additive for the Suppression of Biomaterial Oxidative Stress</b> .....	487
<i>Paritosh Wattamwar, Thomas Dziubla</i>	
<b>Hydrophobically Modified Alginate (HMA) for Drug Delivery and Tissue Engineering</b> .....	488
<i>Soumitra Choudhary, Surita R. Bhatia</i>	
<b>Long-Term Resistance of Novel Zwitterionic Surfaces to Biofilm Formation</b> .....	489
<i>Gang ChEng, Guozhu Li, Shaoyi Jiang</i>	
<b>Transient Shear and Extensional Rheology and Nanostructure of Polymer Nanocomposites</b> .....	490
<i>Christopher Kagarise, Monon Mahboob, Koki Miyazono, Stephen E. Bechtel, Kurt W. Koelling</i>	
<b>Dynamics of Individual Chains In Linear Polyethylene Liquids Under Shear</b> .....	491
<i>Jun Mo Kim, David Keffer, Bamin Khomami, Brian Edwards</i>	
<b>High Resolution Shear Profile Measurements In Entangled Polymers</b> .....	492
<i>Keesha A. Hayes, Lynden A Archer, Mark R Buckley, Itai Cohen</i>	
<b>Computational Linear Rheology of Metallocene-Catalyzed High Density Polyethylene Predicted by Two Alternative Hierarchical Models</b> .....	493
<i>Xue ChEn, Ronald G. Larson</i>	
<b>Unraveling Entanglements and Polymer Rheology</b> .....	494
<i>Richard P. Wool</i>	
<b>Integrating Encapsulated Extensional Rheology and Step-Strain into the Methodology of the Multi-Mode Pom-Pom Model</b> .....	495
<i>Christopher D. McGrady, Christopher W. Seay, Donald G. Baird</i>	
<b>Effect of Functionalization and Processing Parameters on SWNT Polypropylene Nanocomposites</b> .....	496
<i>Vinod K. Radhakrishnan, Virginia A. Davis</i>	
<b>Excellent Dispersion and Improved Properties of Polymer/multiwall Carbon Nanotube Nanocomposites Made Via a Two-Step Process of Solid-State Shear Pulverization Followed by Melt Mixing</b> .....	497
<i>Jun'ichi Masuda, John M. Torkelson</i>	
<b>In-Situ Densification of Combustion Synthesized Nickel Aluminide-Carbon Nanotube Composites from Nanoreactants</b> .....	499
<i>Lori Groven, Jan A. Puszynski</i>	
<b>Using External Fields to Control the Location of Nanoparticles In Block Copolymers: Experiments and Simulations</b> .....	505
<i>Vibha Kalra, Jinwoo Lee, Sergio Mendez, Fernando Escobedo, Yong L. Joo</i>	
<b>Formation of Mullite by Rapid Expansion of High Pressure Suspensions of Alumina and Silica in Supercritical CO<sub>2</sub></b> .....	506
<i>Daniel To, Sameer Dalvi, Rajesh Davé, Sankaran Sundaresan</i>	
<b>Fabrication, Characterization and Microwave Properties of Polyurethane Nanocomposites Reinforced with Magnetic and Ferroelectric Nanoparticles</b> .....	507
<i>Zhanhu Guo, Sang-Eui Lee, Amar B. Karki, David P. Young, H. Thomas Hahn</i>	
<b>Prediction of Thermodynamic Compatibility Between Self Associating Poly(Ethylene Oxide)-B-Poly(e-Caprolactone) and Two Water Insoluble Drugs Using In Silico Methods</b> .....	510
<i>Sarthak K. Patel, Afsaneh Lavasanifar, Phillip Choi</i>	
<b>New Shapes for Drug Delivery: Persistent Circulation of Filomicelles Opens the Dosage Window for Tumor Shrinkage</b> .....	511
<i>Dennis E. Discher, Takamasa Harada, Shenshen Cai</i>	
<b>Application of Magnetic Hydrogel Nanocomposites as Remote Controlled Microfluidic Valves</b> .....	512
<i>Nitin S. Satarkar, Wenli Zhang, J. Zach Hilt, Richard Eitel</i>	
<b>"Living/controlled" Molecular Imprinting Polymerization Techniques to Enhance Drug Delivery Networks</b> .....	514
<i>Asa D. Vaughan, Mark E. Byrne</i>	
<b>Polyketals: A New Acid-Sensitive Biomaterial for Drug Delivery</b> .....	515
<i>Sungmun Lee, Stephen Yang, Michael Heffernan, Niren Murthy</i>	

<b>Local Intracranial Drug Delivery Using Biodegradable PLGA-Paclitaxel Micro/Nano-Fiber Implants to Treat Malignant Brain Tumors</b> .....	516
<i>Sudhir H. Ranganath, Chi-Hwa Wang</i>	
<b>Cytocompatibility Evaluation of Novel Thermoresponsive and Chemically Crosslinkable Macromers for Injectable, In Situ Forming Hydrogels</b> .....	524
<i>Leda Klouda, Michael C. Hacker, Laura H. Barg-Walkow, James D. Kretlow, Antonios G. Mikos</i>	
<b>Rapid Hydrolyzing Polyketal Copolymers for Treating Acute Inflammatory Diseases</b> .....	525
<i>ChEn-Yu Kao, Stephen Yang, Sungmun Lee, Niren Murthy</i>	
<b>Antimicrobial Performance of Novel Environmentally-Friendly Cationic Polymers</b> .....	526
<i>Gang ChEng, Shengfu ChEn, Shaoyi Jiang</i>	
<b>Preparation of Porous Poly(L-lactic acid) Honeycomb Monolith Structure by Unidirectional Freezing and Freeze-Drying</b> .....	527
<i>Jin-woong Kim, Kentaro Taki, Shinsuke Nagamine, Masahiro Ohshima</i>	
<b>The Structure and Mechanical Relaxation of Foams Made from Wheat Gluten</b> .....	535
<i>Thomas O.J. Blomfeldt, Mikael S. Hedenqvist, Eva Johansson</i>	
<b>Amphiphilic Polysaccharides Used for Quantum Dots Encapsulation</b> .....	536
<i>Ching-An Peng, Morris Hsu</i>	
<b>Development of Biodegradable Gluten-PLA Laminate Films</b> .....	537
<i>Sung-Woo Cho, Mikael S. Hedenqvist</i>	
<b>Poly(L-lactic acid) Toughening</b> .....	538
<i>Rahul M. Rasal, Siqiang Richard Zhu, Douglas E. Hirt</i>	
<b>Moisture Sorption in Poly lactide with Varying Molecular Weight and Varying Aliphatic Content</b> .....	539
<i>Vishesh M. Singh, Giuseppe R. Palmese, Richard A. Cairncross</i>	
<b>Biodegradability Study of Native Corn Thermoplastic Starch in Laboratory Scale: Influence of Plasticizer Concentration, Ageing, Sample Superficial Area and Soil Source</b> .....	540
<i>Diego E. Ballesteros, Julie P. Merchan, Isabel C. Jimenez, Jorge A. Medina, Felipe Salcedo, Oscar A. Alvarez</i>	
<b>Hydrolytic Degradation Studies of Renewable Copolymers</b> .....	541
<i>Mathew D. Rowe, Keisha B. Walters</i>	
<b>Copolymerization of Vegetable-Oil-Based Thermosetting Polymers with Chemically Modified Fatty Acid</b> .....	542
<i>Alejandrina Campanella, John La Scala, Richard P. Wool</i>	
<b>Egg Albumin as a Template for Bio-Materials</b> .....	544
<i>Naresh K. Budhavaram, Justin &amp; R Barone</i>	
<b>Polymer Dynamics in Single Wall Carbon Nanotube / Polystyrene Nanocomposites</b> .....	545
<i>Minfang Mu, Nigel Clarks, Russell J. Composto, Karen I. Winey</i>	
<b>Demonstration of Continuous Refractive Index Control of a Nanocomposite</b> .....	546
<i>Thad Druffel, Matt Lattis, Omar Buazza, Scott Farmer</i>	
<b>Electrical Conductivity in Polymer Nanocomposites Containing Metal Nanowires: Simulation and Experiment</b> .....	548
<i>Sadie I. White, Brian A. DiDonna, Lai-Ching Chou, Lea V. Nowack, Minfang Mu, Tom C. Lubensky, Karen I. Winey</i>	
<b>Morphology and Properties of Nanocomposites from Poly(ethylene-co-methacrylic acid) Ionomers</b> .....	549
<i>D. R. Paul, Li Cui, Rhutesh K. Shah, Youngjae Yoo</i>	
<b>A Comparison of Structures and Property Enhancements Associated with Poly(ethylene terephthalate) Nanocomposites Made with Clay or Graphite by Solid-State Shear Pulverization</b> .....	550
<i>Cynthia Pierre, Wei Qu, John M. Torkelson</i>	
<b>The Extent of Filler's Organo-Modification and the Resulting Morphology and Thermo-Mechanical Properties of Poly(<math>\mu</math>-caprolactone)/Clay Nanocomposites</b> .....	551
<i>Sotirios I. Marras, Ioannis Zuburtikudis, Kyriaki Tornikidou, Athanasia Tsimpliaraki, Elpiniki Panayiotidou, Georgia Christofidou</i>	
<b>Explanation for Benefits of Millisecond Annealing in Ultrashallow Junction Formation</b> .....	558
<i>Edmund G. Seebauer, Charlotte T. M. Kwok</i>	
<b>The Combined Role of Transport Phenomena and Interfacial Attachment Kinetics during Liquid Phase Epitaxy of Mercury Cadmium Telluride</b> .....	559
<i>Igal G. Rasin, Anne Ben Dov, Ilana Grimberg, Olga Klin, Eliezer Weiss, Simon Brandon</i>	
<b>First Principles Determination of Highly Mobile Dopant-Interstitial Complexes and Their Relative Contribution to Dopant Diffusion in Silicon</b> .....	560
<i>Kyoung E. Kweon, Gyeong S. Hwang</i>	
<b>Computational Insights into the (Complex) Aggregation Physics of Self-Interstitials</b> .....	561
<i>Sumeet Kapur, Talid Simno</i>	
<b>A Comprehensive Model for Coupled Oxide Precipitation and Point Defect Aggregation in Crystalline Silicon</b> .....	562
<i>Rubal Dua, Talid Simno</i>	
<b>Optically Stimulated Diffusion in Ultrashallow Junction Formation</b> .....	563
<i>Yevgeniy Kondratenko, Charlotte Kwok, Edmund G. Seebauer</i>	
<b>Morphological Stability Analysis of Planar Crystalline Solid Surfaces Under the Simultaneous Action of Electric Fields and Mechanical Stresses</b> .....	564
<i>Vivek Tomar, M. Rauf Gungor, Dimitrios Maroudas</i>	

<b>Comparing the Mechanical Properties of Chitosan Films Bound to Titanium Following Deposition, Neutralization, and Sterilization</b> .....	566
<i>Holly J. Martin, Kirk H. Schulz, Joel D. Bumgardner</i>	
<b>Antibiofouling Activity of Natural Phenolic Compounds against Gram Negative Bacteria</b> .....	569
<i>Dong-Shik Kim, Sumitkumar B. Jagani, Do-Young Yoon</i>	
<b>Cytocompatibility of Dextran-Based Tissue Sealants for Surgical Wound Closure</b> .....	571
<i>Sujata K. Bhatia, Samuel D. Arthur, H. Keith ChEnault, George K. Kodokian</i>	
<b>Enzymic Thin Film Coatings for Bioactive Materials</b> .....	574
<i>Songtao Wu, Xiaodong Tong, Archana Trivedi, Hongfei Jia, Minjuan Zhang, Masahiko Ishii, Ping Wang</i>	
<b>Investigating the Biosynthesis of a Tetracycline Analog with Antitumor Properties</b> .....	575
<i>Lauren B. Pickens, Yi Tang</i>	
<b>Elastin-Like Polypeptide-Polyelectrolyte Conjugates for Tissue Engineering</b> .....	576
<i>Jonathan Woolfolk, Amol V. Janorkar</i>	
<b>Evidence of Multimolecular Cooperative Charge Regulation In Weak Polyelectrolyte Brushes</b> .....	577
<i>Kevin N. Witte, Jaehyun Hur, Sangtae Kim, You-Yeon Won</i>	
<b>Ultra Low Fouling Zwitterionic Polymers with Biomimetic Adhesive Groups</b> .....	578
<i>Guozhu Li, Shaoyi Jiang</i>	
<b>Nanostructured Polystyrene Films: Graft Polymerization and Organic Sorption Behavior</b> .....	579
<i>Gregory T. Lewis, Yoram Cohen</i>	
<b>Solution Properties, Adsorption and Interfacial Layer Structure of Self-Organized Polystyrene-Polyisoprene Miktoarm Block Copolymers</b> .....	580
<i>Juan Pablo Hinestrosa, Masashi Osa, Kunlun Hong, Jimmy W. Mays, S. Michael Kilbey II</i>	
<b>Generating Surface Energy Gradients for Block Copolymer Thin Film Studies</b> .....	582
<i>Julie N. Lawson, Thomas H. Epps III</i>	
<b>Circularly Polarized Lasers from Solid Films Comprising Chiral Conjugated Oligomers Doped with Functionalized Oligofluorenes</b> .....	583
<i>Simon K.-H. Wei, Ksenia Dolgaleva, Svetlana Lukishova, Shaw H. ChEn, Robert W. Boyd</i>	
<b>Highly Controllable 3D Scaffolds with Inverted Colloidal Crystal Geometry as Hematopoietic Stem Cell Niches</b> .....	591
<i>Meghan J. Cuddihy, Jungwoo Lee, Nicholas Kotov</i>	
<b>Release Characteristics of Rhbmp-2 Conjugated to Self-Assembled Biodegradable Nanoparticles</b> .....	592
<i>Angel Mercado, Esmail Jabbari</i>	
<b>Mechanical Characterization of Electrospun Laminated Hydrogel/apatite Nanocomposite</b> .....	593
<i>Weijie Xu, Esmail Jabbari</i>	
<b>Exploring the Size and Composition of Polysaccharide-Based Polyelectrolyte Complex Nanoparticles at Different Charge Molar Ratios</b> .....	594
<i>Soheil Boddohi, Matt J. Kipper</i>	
<b>Nano Bioactive Glass. A High Potential Material for Root Canal Infection Treatment</b> .....	595
<i>Dirk Mohr, Miguel Gubler, Tobias J. Brunner, Matthias Zehnder, Thomas Imfeld, Tuomas Waltimo, Wendelin J. Stark</i>	
<b>Nanoporous Polyelectrolyte Multilayers: Biomimetic Surfaces for Corneal Epithelial Cells</b> .....	597
<i>Christina Hajicharalambous, Xiaoxia Sheng, William Hix, Magdalena Swierczewska, Michael F. Rubner, Padma Rajagopalan</i>	
<b>Surfactant-Assisted Electrospun Metal Nanoparticle-Polysaccharide Based Polymer Blend Nanofibers for Biomedical Applications</b> .....	598
<i>Carl D. Saquing, Joshua Manasco, Jovita M. Saquing, Christopher Bonino, Francis delos Reyes III, Saad A. Khan</i>	
<b>Multifunctional Biomedical Coatings Based on ChEmical Vapor Deposition Copolymerization</b> .....	599
<i>Yaseen Elkasabi, Mutsumi Yoshida, Himabindu Nandivada, Joerg Lahann</i>	
<b>Applications of Thin Films of pH-Responsive Hydrogels Synthesized by Initiated ChEmical Vapor Deposition</b> .....	600
<i>Wyatt E. Tenhaeff, Karen K. Gleason</i>	
<b>A Study of Dewetting during Solvent-Assisted Vapor Deposition of Polymer Films</b> .....	601
<i>Xichong ChEn, Mitchell Anthamatten</i>	
<b>Initiated ChEmical Vapor Deposition of Polymer Thin Film Hydrogels</b> .....	602
<i>Ranjita K. Bose, Kenneth K.S. Lau</i>	
<b>Film Thickness Dependence of Protein Adsorption from Blood Serum and Plasma Onto Poly(sulfobetaine) and Poly(carboxybetaine)-Grafted Surfaces</b> .....	603
<i>Wei Yang, Gang ChEng, Shaoyi Jiang</i>	
<b>Formulation Efforts to Improve the Performance of Military Coatings</b> .....	604
<i>Felicia Levine, John J. La Scala, John A. Escarsega</i>	
<b>Hydrophobic Coatings Using a Chamberless Atmospheric Pressure Plasma Process</b> .....	605
<i>Michael Barankin, Eleazar Gonzalez II, Li Gao, Robert F. Hicks</i>	
<b>Hemocompatibility Enhancement through the Integration of the Antigenic Disguise Protein Tp0483 on a Material Surface</b> .....	606
<i>Matthew T. Dickerson, Dr. Kimberly Anderson, Dr. Leonidas Bachas</i>	

<b>Examination of the Effects of PEG-Rich Matrices In Multi Drug Resistance-Associated Protein (MRP) and Multi Drug Resistance (MDR) Substrates Transport Utilizing the Caco-2 Cell Model</b> .....	607
<i>Nilmarie Santos-Roman, Janet Mendez-Vega, Dr. Madeline Torres-Lugo</i>	
<b>Hydrothermal Synthesis of Biocompatible CaTiO<sub>3</sub> Nanoparticles</b> .....	608
<i>SiewShee Lim, Michael Cloke, Kok Chiang Ng, Jun Jin, George Z. ChEn</i>	
<b>Liquid Crystal Based Protein Assays Developed in Microfluidic Channels</b> .....	611
<i>Chang-Ying Xue, Kun-Lin Yang</i>	
<b>Oxygen-Sensing Microparticles for Probing Cell Microenvironment</b> .....	612
<i>Miguel Acosta, Yordan Kostov, Jennie B. Leach</i>	
<b>Using Functionalized Gold Nanoparticles to Study Uptake and Intracellular Trafficking of Biochemicals Central to Osteonecrosis</b> .....	613
<i>Fedena Fanord, Korie Fairbairn, Harry Kim, Venkat Bhethanabotla, Vinay K. Gupta</i>	
<b>Two-Step Synthesis of Nanosize Hollow SiO<sub>2</sub> Particles for Multiplexing</b> .....	614
<i>Gerson R. Aguirre, Alexander Couzis, Charles Maldarelli, M. Lane Gilchrist</i>	
<b>Preparation of Bioanalytical Sensors by Incorporating Fluorophore In Patternable Poly(ethylene glycol) Diacrylate-Based Membranes</b> .....	615
<i>Zhan Gao, Chang-soo Kim, David B. Henthorn</i>	
<b>Acoustic Wave Propagation in a Hexagonal Surface Acoustic Wave Biosensor Based on LiTaO<sub>3</sub>: a Finite Element Study</b> .....	616
<i>Subramanian K.R.S. Sankaranarayanan, Stefan Cular, Venkat Bhethanabotla</i>	
<b>Medical Applications of Biosensors</b> .....	622
<i>P. Archer Davis, Ifejesu A. Eni-olorunda, Ajit Sadana</i>	
<b>Exfoliation of Layered Platelets and Intercalation of Polymer Chains: Effects of Molecular Weight and Quality of Polymer Solvent</b> .....	623
<i>Ras Pandey, Barry L. Farmer</i>	
<b>A Complete Multiscale Modeling Approach for Nanocomposites</b> .....	624
<i>Sabrina Pricl, Paola Posocco, Giulio Scocchi, Maurizio Fermeglia, Jan-Willem Handgraaf, Johannes Fraaije</i>	
<b>Dynamics of Solvated Chloride Inhibition by Nanoparticle Treated Concrete</b> .....	626
<i>Harish Venkateshaiah, Jinko Kanno, Richardson Nicholas, James Phillips, Kunal Kupwade-Patil, Henry E. Cardenas, Daniela S. Mainardi</i>	
<b>Off-Lattice Monte Carlo Based Nanopaint Design for Coating Scratch Resistance Improvement</b> .....	637
<i>Jie Xiao, Yinlun Huang</i>	
<b>Factors Affecting Nanoparticle Dispersion</b> .....	638
<i>Deepika R. Gollamandala, Ileana C. Carpen</i>	
<b>Frontal Flow Effects In 2-D Simulations of Orientation In High Aspect Ratio Particles Composites Made by Injection Molding</b> .....	639
<i>Gregorio M. Velez, Kevin O. Ortman, Aaron P. R. Eberle, Peter Wapperom, Dr. Donald G. Baird</i>	
<b>Molecular Dynamics Studies on the Dispersion of Silica Nanoparticles in Polyethylene Melt Using a Coarse-Grained Model</b> .....	640
<i>Yangyang Shen, Aleksey Vishnyakov, M. Silvina Tomassone</i>	
<b>Nanoparticle Formation by Amphiphilic Block Copolymer Directed Assembly: A Model Study Using Molecular/brownian Dynamics Simulations</b> .....	651
<i>Chungyin ChEng, Monica H. Lamm, R. O. Fox, R. Dennis Vigil</i>	
<b>Multi-Scale Modelling Efforts for Diblock Copolymers</b> .....	652
<i>Sharon Loverde, Vanessa Ortiz, Dennis E. Discher, Michael Klein</i>	
<b>Numerical Study of Polymer-Silica Nanocomposites :Molecular Weight Effect on Their Mechanical Properties</b> .....	653
<i>Thomas R. Roussel, Joshua Moore, Keith Gubbins</i>	
<b>A Multiscale Approach to Predicting Barrier Properties of Polymer Nanocomposites</b> .....	654
<i>Youthachack Landry Khounlavong, Venkat Ganesan, Victor Pryamitsyn</i>	
<b>A 3-D Approach to Model Diffusion in Randomly Distributed Nanocomposite</b> .....	655
<i>Matteo Minelli, Marco Giacinti Baschetti, Ferruccio Doghieri</i>	
<b>Molecular Simulation of Nanoscale Distribution and Mobility of Water and Dimethylmethylphosphonate in Sulfonated Polystyrene</b> .....	663
<i>Aleksey Vishnyakov, Alexander V. Neimark</i>	
<b>Characterization of Entangled Cross-Linked Poly(ethylene glycol) Hydrogels with Dangling Ends</b> .....	666
<i>Mahnaz Eskandari, Arsun Artel, Eric M. Brey, Ali Cinar</i>	
<b>Development of Double-Layer Hydrogels for Agricultural Applications</b> .....	667
<i>Sangjoon Kim, Arunan Nadarajah</i>	
<b>A Modular Approach to Organic Light-Emitting Materials with Tunable Charge Injection and Transport Properties</b> .....	668
<i>Andrew C. A. ChEn, Jason U. Wallace, Ching W. Tang, Shaw H. ChEn</i>	
<b>Coarse-Grained Simulation of DNA Dynamics in Sub-Persistence Length Nanochannels</b> .....	670
<i>Yeng-Long ChEn</i>	



<b>Flow-Induced Temperature Change and Anisotropic Heat Capacity of a Linear Short-Chain Polyethylene Liquid</b> .....	671
<i>Brian Edwards, Chunggi Baig</i>	
<b>Dynamic Relaxation Properties of Polymer Nanocomposites: Effect of Nanoparticles on the Glass-Rubber and Sub-Glass Transitions</b> .....	672
<i>Anthony C. Comer, Victor A. Kusuma, Benny D. Freeman, Douglass S. Kalika</i>	
<b>Unraveling Entanglements and Polymer Rheology: New Rules</b> .....	673
<i>Richard P. Wool</i>	
<b>Kinetic Modeling of Atom Transfer Radical Polymerization: Linking Control to Reaction Rates</b> .....	674
<i>Dagmar R. D'hooge, Marie-Françoise Reyniers, Guy B. Marin</i>	
<b>Open-Pore Polyurethane for Vacuum Insulated Panels</b> .....	679
<i>Jun Ji, Houde Han, Ankang Kan</i>	
<b>Fibrillar Morphology of Syndiotactic Polystyrene Synthesized Over Heterogeneous Metallocene Catalyst</b> .....	680
<i>Joong Jin Han, Sang Bok Lee, Kyu Yong Choi</i>	
<b>Modeling Viscoelasticity and Stress Generation In Solidifying Coatings</b> .....	681
<i>Daniel J. O'Neal, Alon V. McCormick</i>	
<b>Synthesis and Characterization of pH-Responsive P(MAA-co-EGMA) Hydrogel Microparticles for Intelligent Drug Delivery System</b> .....	682
<i>Bumsang Kim, Youngsik Lee, Juseung Yang, Eunmi Lee, Won Sun Ryoo, Sang Min Lee, Kyu Sik Kim</i>	
<b>Preparation of a Fine Porous Thin Film by Phase Separation Induced in the Course of Drying An Immiscible Polymer Blend Solution</b> .....	683
<i>Jae-Kyung Kim, Kentaro Taki, Shinsuke Nagamine, Masahiro Ohshima</i>	
<b>Preparation and Evaluation of Thermosensitive Microcapsules Using Double Tube Nozzle</b> .....	691
<i>Junichi Ida, Takuro Takahagi, Tatsushi Matsuyama, Hideo Yamamoto</i>	
<b>Interactions of Chloride and 3-Mercapto-1-Propanesulfonic Acid In Acidic Copper Sulfate Electrolyte</b> .....	694
<i>Hung-Ming ChEn, Satish J. Parulekar, Alan Zdzunek</i>	
<b>Synthesis and Characterization of Interfacially Modified Block Copolymers</b> .....	695
<i>Nripen Singh, Thomas H. Epps III</i>	
<b>Development of Ion Gels with Addition of Ionic Liquid</b> .....	696
<i>Jiao Guo, Kyonsuku Min</i>	
<b>Development of a Multi-Variate Statistical Non-Destructive Test for Measuring Aging In Materials</b> .....	697
<i>Derrick Rollins, Ai-Ling Teh, Krishna Rajan</i>	
<b>A Unifying Approach for Melt Rheology of Linear Polystyrene</b> .....	698
<i>Sung Hun Kim</i>	
<b>Macroscopic Inspection for Nanofiller Dispersion and Polymer Degradation: Fundamental Characterization in Polymer Nanocomposites</b> .....	699
<i>Paul J. Hubert, Joseph N. Kuterbach, Christopher E. Roman, Katsuyuki Wakabayashi</i>	
<b>Fabrication of Self-Supporting, Hierarchical 3D Nanocomposites with Multi-Scale Controllable Features</b> .....	700
<i>Christine M. Andres, Nicholas A. Kotov</i>	
<b>Stress-Induced Crystallization of Poly(Trimethylene Terephthalate) Fibers by Molecular Dynamic Simulations</b> .....	701
<i>Min-Kang Hsieh, Shiang-Tai Lin</i>	
<b>Physical ChEmical Properties of Phase Separated Polymersomes</b> .....	709
<i>Aiwei Tian, David A. Christian, Dennis E. Discher, Tobias Baumgart</i>	
<b>Kinetics of Thermal Decomposition of Expanded Polystyrene In Different Gaseous Environments</b> .....	710
<i>Pravin Kannan, Joseph J. Biernacki, Donald P. Visco, William Lambert</i>	
<b>Particle Dynamics and Adhesion In a Biomimetic System: Skipping, Rolling, and Arrest Governed by Spatially Varying Colloidal Interactions</b> .....	711
<i>Jeffrey M. Davis, Ranojoy D. Duffadar, Maria M. Santore</i>	
<b>Structural and Thermo-Mechanical Characteristics of High-Amylose Starch/bionolle Nanocomposite Blends</b> .....	712
<i>Sotirios I. Marras, Ioannis Zuburtikudis, Kyriaki Tornikidou, Athanasia Tsimpliaraki, Elpiniki Panayiotidou, Georgia Christofidou</i>	
<b>Oxygen Permeability of Novel Organic-Inorganic Hybrid Coatings</b> .....	713
<i>Mateo Minelli, Maria Grazia De Angelis, Ferruccio Doghieri, Michele Marini, Maurizio Toselli, Francesco Pilati</i>	
<b>Rigorous Dynamic Model of the High-Pressure Polymerization of Ethylene in Tubular Reactors Able to Predict the Full Molecular Weight Distribution</b> .....	722
<i>Mariano Asteasuain, Adriana Brandolin</i>	
<b>Probing Mechanical Function of Vertical Multi-Layered Systems by Enhancing the Adhesion at the Interface</b> .....	731
<i>Tiffani B. Abernathy, Ravi Ayyer, Eric Baer, Anne Hiltner, LaShanda Korley</i>	
<b>Synthesis of Structured Polymer Particles by Micro Dispersive Suspension Polymerization</b> .....	732
<i>Yunju Jung, Carla Luciani, Joong Jin Han, Kyu Yong Choi</i>	
<b>Synthesis, Characterization and Surface Properties of Fluorinated Methacrylic Polymers for the Protection and Conservation of Stone</b> .....	733
<i>Stella K. Papadopoulou, Chrysa Michailof, Ioannis Karapanagiotis, Ioannis Zuburtikudis, Costas Panayiotou</i>	
<b>Evolution of Interfacial Water Layers on a Highly Hydroxylated Silica Film: Implications for Cellular Interactions</b> .....	741
<i>A. Anderson, W. Robert Ashurst</i>	

<b>Maximizing or Eliminating the Effects of Nanoscale Confinement on the Glass Transition In Freely Standing, Supported, and Multilayer Polymer Films</b> .....	742
<i>Soyoung Kim, Connie B. Roth, John M. Torkelson</i>	
<b>Surface Polymerization of Iron Particles for Magnetorheological Elastomers (MREs) and Their Potential Application as Sensors</b> .....	744
<i>Alan Fuchs, Joko Sutrisno, Faramarz Gordaninejad, Mert Caglar, Xiaojie Wang, Yanming Liu</i>	
<b>Synthesis of Polypyrrole/azocalix[4]Arene Salts: Electrical Properties and Thermal Stability</b> .....	746
<i>Ayse Gul Yavuz, Aysegul Uygun, Songul Sen</i>	
<b>Imprint Lithography and Characterization of Photosensitive Polymers for Advanced Microelectronics Packaging</b> .....	747
<i>Sue Ann Bidstrup Allen, Venmathy Rajarathinam, Paul Kohl</i>	
<b>Effect of Asphaltene on Phase-Wetting and Internal Corrosion in Oil-Water Two Phase Flow</b> .....	748
<i>Pankaj Ajmera, Professor Srdjan Nestic</i>	
<b>Polyurethanes Based on Polyols from Castor Oil, Starch Granules and Starch-Derived Glycol and Glycerol Glycosides: Morphology, Synthesis, ChEmical, Mechanical, and Thermal Properties</b> .....	749
<i>Álvaro Ramírez Sr., Manuel F. Valero, Jorge E Pulido, Zhenhdong ChEng</i>	
<b>One-Part Geopolymer Mixes from Geothermal Silica and Sodium Aluminate</b> .....	756
<i>Ailar Hajimohammadi, John L. Provis, Jannie S. J. Van Deventer</i>	
<b>Development and Characterization of Copolymers from Renewable Resource Monomers</b> .....	765
<i>Mathew D. Rowe, Keisha B. Walters</i>	
<b>The Rheology, Degradation, and Processing of Renewable Resource Polymers</b> .....	766
<i>Graham H. Harrison, Jason D. Conrad</i>	
<b>One-Step Functionalization of Cellulosic Nanowhiskers Using Renewable Reagents</b> .....	767
<i>Birgit Braun, John R Dorgan</i>	
<b>Palm Oil Based Epoxides as Pvc Plasticizers: Synthesis, Characterization and Incorporation and Their Thermomechanical and ChEmical Properties</b> .....	768
<i>José Rodrigo Gómez-Díaz, Alejandro Boyaca, Luis Francisco Boada Eslava</i>	
<b>Environmentally Friendly ChEmical Synthesis and Catalysis for Improved Polyethylene Products</b> .....	769
<i>Savvas Vasileiadis, Zoe Ziaka</i>	
<b>Nafion-Based Anion Exchange Membranes for the Alkaline Fuel Cell</b> .....	772
<i>Holly Schaeffer, Yossef A. Elabd</i>	
<b>Wetting and Absorption of Water Drops on Nafion Films</b> .....	773
<i>Sharonmoyee Goswami, Shannon Klaus, Jay B. Benziger</i>	
<b>Microstructure Transitions of Lithium Salt Doped PS-B-PEO Copolymer</b> .....	774
<i>Wen-Shiue Young, Paul Brigandì, Thomas H. Epps III</i>	
<b>Diffusion of Water and Methanol In Nafion: In Situ Infrared Experiments and Multicomponent Models</b> .....	775
<i>James A. Throckmorton, Daniel T. Hallinan Jr., Yossef A. Elabd</i>	
<b>Novel Organometallic Low Energy Gap Materials and Synthetic Models of Carbon Monoxide Hydrogenase (CODH) In Biological System</b> .....	776
<i>Jibin Sun</i>	
<b>Inverse Opal Topology of TiO<sub>2</sub> Electrodes for Photoelectrochemical Cells</b> .....	777
<i>Sonia S. Mathew, Ilona Kretzschmar</i>	
<b>Synthesis and Reversible Wettability of Conducting Polyaniline Films Consisting of Helical Microfibers</b> .....	778
<i>Lianbin Xu, Yushan Yan, Jian-Feng ChEn</i>	
<b>Electrochemical Supercapacitors Based on Polymerizable Ionic Liquids</b> .....	779
<i>Surya Sekhar Moganthy, Joshua Close, Pubudu Goonetilleke, Sitaraman Krishnan, Ruth Baltus, Dipankar Roy</i>	
<b>Cyclic Acetal Hydroxyapatite Nanocomposites for Bone Tissue Engineering Applications</b> .....	780
<i>Minal Patel, John P. Fisher</i>	
<b>Synthesis and Characterization of Alpha-Helical Peptide-Based Anchors for Tether Supported Membranes</b> .....	781
<i>Lina Zhong, Raymond Tu, M. Lane Gilchrist</i>	
<b>Replication of Intestinal Basement Membrane Via ChEmical Vapor Deposited Silica Thin Films</b> .....	782
<i>Brian J. McMahon, Rebecca Carrier, Daniel Burkey</i>	
<b>Biomimetic Polymer Membranes Exhibiting Curvature-Dependent Adhesion</b> .....	783
<i>Maria M. Santore, Jin Nam</i>	
<b>Localized Drug Delivery System for the Treatment of Cancer</b> .....	784
<i>Marlyn Colon, Eva Christabel Williams, Ryan Toomey, Norma Alcantar</i>	
<b>A Two-Step Process for the Synthesis of Poly(L-lactic acid)</b> .....	785
<i>In Hak Baick, Yuesheng Ye, Kyu Yong Choi</i>	
<b>Structure and Stability of Electrospun PvdF/Chitosan Nanofiber</b> .....	786
<i>France Noelle B. Villaruel, Hern Kim</i>	
<b>Adhesive Properties and Thermodynamic Stability of Hpc:PEG Films</b> .....	787
<i>Marlena Brown, Paul Takhistov</i>	
<b>Development of Sustained Fluoride Releasing Elastomeric Rings for Orthodontic Applications</b> .....	788
<i>Shadeed M. Khan, Ozge Guney-Altay, Eser Tufekci</i>	

<b>Photo-Induced Locomotion of ChE-mo-Responsive Polymer Gels</b> .....	789
<i>Pratyush Dayal, Olga Kuksenok, Anna C. Balazs</i>	
<b>First-Principles Analysis and Monte Carlo Simulations of Surface Segregation In ZnSe1-xSx Nanostructures</b> .....	790
<i>Sumeet C. Pandey, Tejinder Singh, T. J. Mountziaris, Dimitrios Maroudas</i>	
<b>Hybrid Organic/Inorganic Solar Cells Featuring Microcontact-Printed Quantum Dot Films</b> .....	791
<i>Mathew J. Panzer, Alexi C. Arango, Tim P. Osedach, Scott M. Geyer, Mounji G. Bawendi, Vladimir Bulovic</i>	
<b>Electrochemical Impedance Spectroscopy of ZnO Nanowire and Nanoparticle Dye Sensitized Solar Cells</b> .....	792
<i>H. Majidi, J.B. Baxter</i>	
<b>Structure and Low Temperature Spectral Emissivity of Erbium Doped Metal Oxide Nanofibers for Application as Selective Emitters In Thermophotovoltaic Devices</b> .....	793
<i>Ruofeng Wang, E. A. Evans</i>	
<b>Controlling Microbial Adhesion and Biofilm Formation by Self-Assembled Monolayers of Alkanethiols Presenting Mannitol Group</b> .....	794
<i>Shuyu Hou, Erik A. Burton, Yan-Yeung Luk, Dacheng Ren</i>	
<b>Self-Assembly of Novel Hybrid Vesicles from Phospholipids/dendrimers/block Copolymers</b> .....	795
<i>Anthony J. Kim, Mark S. Kaucher, Dalia H. Levine, Virgil Percec, Daniel A. Hammer</i>	
<b>Tailoring of Self-Assembling Peptide Scaffolds with Biofunctional Epitopes</b> .....	796
<i>Ying Chau, Ying Luo, Qianqian Li, Alex C.Y. Cheung</i>	
<b>Self-Assembly and DNA Binding Properties of Bzip Peptide Amphiphiles</b> .....	797
<i>Rachel S. Marullo, Raymond Tu, Matthew Tirrell</i>	
<b>Self-Assembly of Comb-Rod Dendritic Block Copolymers</b> .....	798
<i>Shujun Chen, Paula T. Hammond</i>	
<b>Structure and Nanomechanics of Collagen Complexes for Novel Biomaterials</b> .....	799
<i>David V. Svintrazde, Vamsi K. Yadavalli, Ramana Pidaparti</i>	
<b>Synthesis and Swelling Response of Block and Random Copolymer Brushes Incorporating Thermo- and pH-Responsive Constituents</b> .....	800
<i>S. Michael Kilbey II, J. Alaina Floyd, Santosh B. Rahane</i>	
<b>Towards the Development of Biodegradable Sensors from Smart Hydrogels</b> .....	801
<i>Diana K. Snelling, Nicholas A. Peppas</i>	
<b>Prediction of Phase Behavior In Surface-Tethered Poly(N-isopropylacrylamide) Networks from Demixing Behavior of Linear Poly(NIPAAm) Solutions</b> .....	802
<i>Ajay Vidyasagar, Ryan Toomey</i>	
<b>“Smart” Surfaces of Polymer Brushes</b> .....	803
<i>Dong Meng, Qiang Wang</i>	
<b>Influence of Binding Strength on the Structure of Supramolecular Polymer-Surfactant Complexes</b> .....	804
<i>Chinedum Osuji, Manesh Gopinadhan, Evan Beach, Paul Anastas</i>	
<b>Studying the Influence of Structure on Hydrogel Behaviour: A Molecular Simulation Study of Poly(N-isopropyl acrylamide)</b> .....	805
<i>Sanket Deshmukh, Mateusz Landowski, Damian A. Mooney, J. M. D. Macelroy</i>	
<b>Development of Environmentally Responsive Hydrogel Systems Over Micro- and Nanodevices Via ATRP</b> .....	806
<i>Hariharasudhan D. Chirra, J. Zach Hilt</i>	
<b>Fabrication of Adhesive Structures Based on the Gecko</b> .....	807
<i>Noshir S. Pesika, Jacob N. Israelachvili</i>	
<b>Biomimetic Membrane Properties and the Morphology of Giant Hybrid Vesicles with Phospholipid/block Copolymer Coexistence</b> .....	808
<i>Jin Nam, Paul A. Beales, T. Kyle Vanderlick</i>	
<b>Lipid Raft Formation In Bilayer Membranes with Biomimetic Cytoskeletons</b> .....	809
<i>Noah Malmstadt</i>	
<b>Development of An Enzymatically Crosslinkable Biomimetic Collagen That Exhibits Collagen-Like Molecular Architecture with Improved Cellular Recognition</b> .....	811
<i>Yen Wah Tong, Shih Tak Khew</i>	
<b>Photopatternable Synthetic Materials with Biorecognition Abilities for Use In Analytical Microdevices</b> .....	812
<i>Yoyou Zheng, David B. Henthorn</i>	
<b>Incorporating Stimulus-Responsive Character into Filamentous Virus Assemblies</b> .....	813
<i>Harry Bermudez, Adam P. Hathorne</i>	
<b>Fabrication of Tubular Scaffolds from Silk Fibroin Using Biologically Inspired Gel Spinning Technique</b> .....	814
<i>Chris Cannizzaro, Michael Lovett, Gordana Vunjak-Novakovic, David Kaplan</i>	
<b>Acid Sensitive Polymers for Drug Delivery</b> .....	815
<i>Eric Bachelder, S. E. Paramonov, J Dashe, T. T. Beaudette, J. M. J. Frechet</i>	
<b>Reductively Degradable Polymeric Assemblies Constructed from Polyethyleneoxide-S-S-Polycaprolactone Diblock Copolymer for Applications In Drug Delivery</b> .....	816
<i>Karthikan Rajagopal, Dennis E. Discher</i>	

<b>Synthesis of Thermo-Responsive Polymeric Micelles of Pnipaam-B-Omma as a Drug Carrier for Loading and Controlled Release of Prednisolone</b> .....	817
<i>Dapeng Cao, Wei Li, Weixia Tu</i>	
<b>Surface Modification of Monodisperse Magnetic Nanoparticles with Fluorescent-Thermo-Responsive Polymeric Shells for Biomedical Applications</b> .....	818
<i>Adriana P. Herrera, Yashira Zallas, Carlos Rinaldi</i>	
<b>Plasma Polymerization of Thermo-responsive Poly(N-isopropyl acrylamide) for the Release of Multiple Cell Types</b> .....	819
<i>Heather E. Canavan, Jamie A. Reed, Adrienne E. Lucero, Steven Candelaria</i>	
<b>Creasing Instability of Stimuli-Responsive Polymer Gels</b> .....	820
<i>Jungwook Kim, Ryan C. Hayward</i>	
<b>Sorption Equilibria of CO<sub>2</sub> In Atactic Polystyrene by Molecular Simulation</b> .....	821
<i>Theodora Spyriouni, Georgios C. Boulougouris, Doros N. Theodorou</i>	
<b>Atomistic Simulation of Poly(dimethylsiloxane): Structure, Thermodynamic and Diffusion Properties to Gases and N-Alkanes</b> .....	823
<i>Ioannis G. Economou, Zoi A. Makrodimitri</i>	
<b>Heteropolymers with Adjustable Monomer Sequences (HAMS) as Compatibilizers for Homopolymer Blends</b> .....	824
<i>Ravish Malik, Carol K. Hall, Jan Genzer</i>	
<b>Athermal Contribution to the Excess Entropy in the Long Chain Limit</b> .....	825
<i>J. Richard Elliott, Neil H. Gray, Amir Vahid</i>	
<b>Polymer-CO<sub>2</sub> Interfaces In Equilibrium. A Density Functional Study</b> .....	826
<i>Manish Talreja, Isamu Kusaka, David L. Tomasko</i>	
<b>Modeling the Phase Behavior of Polydisperse Rodlike Molecules with Attractive Interactions</b> .....	827
<i>Micah J. Green, Nicholas G. Parra-Vasquez, Natnael Behabtu, Virginia A. Davis, Matteo Pasquali</i>	
<b>Compressible Lattice Model for CO<sub>2</sub>+ Cosolvent + Polymer Systems</b> .....	828
<i>Yanhui Yuan, Anupama Kasturirangan, Amyn S. Teja</i>	
<b>Extension of the Friction Theory to the Description of the Rheological Behavior of Polymer Systems</b> .....	829
<i>Sergio E. Quiñones-Cisneros, Juan P. Aguayo, Octavio Manero, Torben Laursen, Ulrich K. Deiters</i>	
<b>Author Index</b>	