

Materials Engineering and Sciences Division 2013

**Core Programming Area at the 2013 AIChE Annual Meeting:
Global Challenges for Engineering a Sustainable Future**

**San Francisco, California, USA
3 – 8 November 2013**

ISBN: 978-1-63439-046-0

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© (2013) by AIChE
All rights reserved.

Printed by Curran Associates, Inc. (2014)

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

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
Web: www.proceedings.com

TABLE OF CONTENTS

(40a) Functional Ion Gels: Block Polymer/Ionic Liquid Composites for Advanced Applications	1
<i>Timothy P. Lodge</i>	
(40b) Manipulating Polymers With Light Activated Chemistries for Patterning Films and Manufacturing Fibers	2
<i>Christopher J. Ellison</i>	
(40c) Tunable and Responsive Polymer Nanocomposites Inspired By Nature	3
<i>Lashanda T. J. Korley</i>	
(40d) Transport of Ions and Penetrants Through Structured Polymeric Matrices: Interplay of Structure and Dynamics of Polymers	4
<i>Venkat Ganesan</i>	
(42a) Electrospun Nanofibrous Scaffolds for the Promotion of Scar-Free Corneal Wound Healing	5
<i>Amy Fu, Julia Kornfield</i>	
(42b) Perfusion-Decellularized Pancreas As a Scaffold for Pancreatic Tissue and Whole-Organ Engineering	6
<i>Saik Kia Goh, Suzanne Bertera, Stephen Badylak, Ipsita Banerjee</i>	
(42c) Neural Pathfinding On Photopolymerized Micropatterns With Varied Mechanical Properties	7
<i>Brad Tuft, Linjing Xu, Lichun Zhang, Scott White, Marlan Hansen, C. Allan Guymon</i>	
(42d) Spontaneous Mineralization of Hydrophobic Hydrogels for Craniofacial Bone Tissue Regeneration	8
<i>Adam K. Ekenseair, Stephanie N. Tzouanas, Tiffany N. Vo, Patrick P. Spicer, Brendan M. Watson, Paschalia M. Mountziaris, F. Kurtis Kasper, Antonios G. Mikos</i>	
(42e) Simultaneous Delivery of SDF-1α and BMP2 Using Enzymatically Degradable Hydrogels for Improved Osteogenesis	9
<i>Julianne L. Holloway, Brendan P. Purcell, Jason A. Burdick</i>	
(42f) Construction of Human Respiratory Platform for Lung Organ In Vitro Study	10
<i>Jen-Huang Huang, Andrew M. Goumas, Ayesha Arefin, Rashi Iyer</i>	
(42g) Recombinant Collagen Variants for the Production of Tunable Hydrogel Scaffolds	11
<i>Richard A. Que, Ali Mohraz, Nancy A. Da Silva, Szu-Wen Wang</i>	
(42h) Engineering Microcapillaries Using Chitosan-Gelatin Injectable Hydrogel Formulations	12
<i>Kumar Singarapu, Sundararajan V. Madhally</i>	
(43a) Proteolytic Degradation of Hyaluronic Acid Hydrogels for Controlled Growth Factor Delivery	13
<i>Julianne L. Holloway, Jason A. Burdick</i>	
(43b) Nanoparticle Design for Vaccine Delivery	14
<i>Catherine A. Fromen, Reid A. Roberts, Sarah N. Mueller, Gregory R. Robbins, Tammy W. Shen, Shaomin M. Tian, J. Christopher Luft, Jenny Py Ting, Joseph M. Desimone</i>	
(43c) Solution Assemblies of Novel Amphiphilic Block Copolymers for Drug Delivery	15
<i>Matthew D. Green, Elizabeth G. Kelley, Ryan P. Murphy, Thomas H. Epps, Millicent O. Sullivan</i>	
(43d) Stereoregularity Inhibits Complex Coacervation of Polypeptides	16
<i>Sarah L. Perry, Lorraine Leon, Matthew J. Kade, Katie Megley, Dimitrios Priftis, Derek Wong, Khatcher O. Margossian, Matthew Tirrell</i>	
(43e) Nanostructured Biomaterials for Healing Chronic Wounds	17
<i>Benjamin D. Almquist, Paula T. Hammond</i>	
(43f) Biomaterial Scaffolds for Local Immunomodulation	18
<i>R. Michael Gower, Samira M. Azarin, Christine F. Ricci, Ryan M. Boehler, Xiaomin Zhang, Lonnie D. Shea</i>	
(43g) Integrated Antimicrobial and Nonfouling Properties of Zwitterionic Polymers and Their Derivatives	19
<i>Luo Mi, Shaoyi Jiang</i>	
(81a) A Lattice Model of Silica Polymerization	20
<i>Mohammad Navaid Khan, Scott M. Auerbach, Peter A. Monson</i>	
(81b) Computational Mechanics of Aerogels and Aggregation-Based Nanocomposite Materials	21
<i>Lev D. Gelb, Carlos A. Ferreira-Rangel</i>	
(81c) Fabrication of Nanoporous Silicon Oxycarbide Materials Using Layered Double Hydroxide As a Sacrificial Template	22
<i>Xiaojie Yan, Wangxue Deng, Motaz Khawaji, Theodore Tsotsis, Muhammad Sahimi</i>	
(81d) Worm-Like Micelle Assisted Synthesis of Iron Oxide Nanorods	23
<i>Suvajeet Dutttagupta, Rochish Thaokar, Anurag Mehra</i>	
(81e) Preparation of Mesoporous Materials: Approaching to Industrial Viability	24
<i>Esther Santamaria, Alicia Maestro, Montserrat Porras, Jose M. Gutierrez, Carmen Gonzalez</i>	
(81f) Engineering the Architectural Diversity of Heterogeneous Metallic Nanocrystals	26
<i>Yue Yu, Qingbo Zhang, Jianping Xie, Jim Yang Lee</i>	
(106a) Self-Assembly of Nanoparticle Surfactants Harnessing Polymer Steric Interactions	27
<i>Kjersta Larson-Smith, Michael Lombardo, Danilo Pozzo</i>	
(106b) Tuning Block Copolymer Solution Assemblies Through Manipulation of Interfacial Interactions	28
<i>Thomas H. Epps, Elizabeth G. Kelley, Ryan P. Murphy, Matthew D. Green, Millicent O. Sullivan</i>	
(106c) Polymer Batteries and Capacitors: Challenges and Opportunities	29
<i>Jodie Lutkenhaus</i>	
(106d) Smart, Reconfigurable Polymer Networks	30
<i>Christopher N. Bowman, Christopher J. Kloxin, Devatha P. Nair</i>	

(108a) High Temperature Biocatalyst Immobilization On Nanofibrous Supports By Reactive Electrospinning	31
<i>Christina Tang, Robert M. Kelly, Saad A. Khan</i>	
(108b) A Defined, Scalable 3D Culture System for Producing Human Pluripotent Stem Cells and Their Progeny	32
<i>Yuguo Lei, David Schaffer</i>	
(108c) High Aspect Ratio Hydrogel Microwell Arrays As a Novel Platform for the In Situ Cloning of Rare Cells	33
<i>Daniel Heath, A. Mohamed Sharif, Chee Ping Ng, Paula Hammond, Linda G. Griffith, Mary B. Chan-Park</i>	
(108d) The Direct Osteolytic Potential of MCF-7 and MDA-MB-231 Breast Cancer Cells in An in Vitro Bone Environment	35
<i>J. Dumas, Chibueze Ihenacho, Manu Platt</i>	
(108e) Modular Hydrogels Based On Click Chemistry for 3D Stem Cell Encapsulation and Transplantation	37
<i>Badriprasad Ananthanarayanan, Tandis Vazin, Anthony Conway, Jung Ming Lin, Douglas Kelkhoff, David V. Schaffer, Sanjay Kumar</i>	
(108f) Affinity-Based Thermoset Biodegradable Polymer	38
<i>Jeffrey M. Halpern, Melissa Keech, Allison Weinstock, Robert T. Mathers, Horst A. Von Recum</i>	
(108g) Development of An in Vivo Metastasis Sensor Using Biomaterial Scaffolds	39
<i>Samira M. Azarin, R. Michael Gower, Brian A. Aguado, Ji Yi, Jacqueline S. Jeruss, Vadim Backman, Lonnie D. Shea</i>	
(805h) Polydopamine-Coated PCL Shape Memory Polymer Foams for Bone Regeneration	40
<i>Dany J. Munoz-Pinto, Andrea C. Jimenez-Vergara, Dawei Zhang, Melissa Grunlan, Mariah S. Hahn</i>	
(109a) Invited Speaker: Design of Synthetic Materials for Spatial, Temporal, and Active Control Over Nucleic Acid Delivery: Surface-Mediated and Redox-Based Approaches	42
<i>David M. Lynn</i>	
(109b) Well-Defined Cationic Poly lactides As Biodegradable Vector for Effective Delivery of Plasmid DNA	43
<i>Chih-Kuang Chen, Charles H. Jones, Ming Jiang, Lei Fang, Blaine A. Pfeiffer, Chong Cheng</i>	
(109c) A Photo-Degradable Gene Delivery System for Enhanced Gene Transcription	44
<i>Hoyoung Lee, Stephen F. Konieczny, You-Yeon Won</i>	
(109d) Combinatorial Synthesis and Cheminformatics Modeling of Antibiotics-Based Polymers for Transgene Expression	45
<i>Thrimoorthy Potta, Zhuo Zhen, Taraka Sai Pavan Grandhi, Matthew Christensen, James Ramos, Curt M. Breneman, Kaushal Rege</i>	
(109e) Invited Speaker: Combinatorial Development of Nucleic Acid Delivery Materials	46
<i>Daniel G. Anderson</i>	
(109f) Dual-Ligand Peptide-Targeted Liposomal Gene Delivery for Cancer Therapy	47
<i>Rachel Levine, Timothy R. Pearce, Maroof Adil, Efrosini Kokkoli</i>	
(109g) Photocleavable Polyplexes As Dynamic Carriers for Controlled Nucleic Acid Delivery	48
<i>Abbygail A. Palmer, Matthew D. Green, Chad T. Greco, Raghunath Roy, Thomas H. Epps, Millicent O. Sullivan</i>	
(109h) Efficiency of siRNA Delivery By Lipid Nanoparticles Is Limited By Endocytic Recycling	49
<i>Gaurav Sahay</i>	
(136a) Synthesis and Characterization of Zwitterionic Dextran	50
<i>Gang Cheng</i>	
(136b) Comprehensive Utilization of Rice Husks	51
<i>Haoran Chen, Adam J. Oliphant, Kaitlynn A. Lee, Jarett C. Martin, Luyi Sun</i>	
(136c) Use of a Plant-Based Natural Biomaterial in Flocculation-Separation and in Absorption Systems for Removing Organic Contaminants in Water	52
<i>Daniela M. L. Stebbins, Audrey Buttice, Fei Guo, Jorge Lara, Norma Alcantar</i>	
(136d) Cholesterol-Peptide Hybrids to Form Liposome-Like Vesicles for Gene Delivery	53
<i>Gang Cheng</i>	
(136e) Industrial Example Of Selective Herbal Material Usage On Cotton Fabrics For Antibacterial Activity	54
<i>Cem Gunesoglu, Mehmet Orhan, Irem Tatli, Sinem Gunesoglu, Gulizar Mantar</i>	
(170a) Invited Talk: Diffusion in Entangled Rod-Coil Block Copolymers	55
<i>Bradley D. Olsen, Muzhou Wang, Ksenia Timachova</i>	
(170b) Water Sorption and Diffusion in Glassy Polymers: Nonequilibrium Thermodynamics and States of Water	56
<i>Eric M. Davis, Yossef A. Elabd</i>	
(170c) Helium and Hydrogen Diffusion and Sorption in Polymers for Membrane Applications	57
<i>Zachary P. Smith, Rajkiran R. Tiwari, Kristofer L. Gleason, David F. Sanders, Benny D. Freeman, Donald R. Paul</i>	
(170d) Modeling Of Diffusion Processes—Implementation Of Infinite Series Solutions	58
<i>Steven K. Burgess, Robert Kriegel, William J. Koros</i>	
(170e) Modeling the Kinetic of Sorption of Alcohols in Glassy Matrimid 5218 Using a Non Equilibrium Theory for Glassy Polymers (NET-GP) Approach	59
<i>Giovanni Cocchi, Marco Giacinti Baschetti, Maria Grazia De Angelis, Ferruccio Doghieri, Giulio Sarti</i>	
(170f) Theoretical Study of Nanostructured Alkaline Exchange Membrane Phase Behavior and Transport Property	61
<i>Shifan Mao, Andrew Spakowitz, Elyse Coletta, Steve He, Curtis W. Frank, Michael Toney</i>	
(191a) Engineering of Multilayered Nanoparticles Structures for Stretchable Conductors With Self-Organized Conductive Pathways	62
<i>Yoonseob Kim, Jian Zhu, Bongjun Yeom, Matthew Di Prima, Xianli Su, Jin Gyu Kim, Seung Jo Yoo, Ctirad Uher, Nicholas A. Kotov</i>	
(191b) Formation of High-Aspect Ratio Helical Nanorods Via Peptide Driven Self-Assembly of Fullerodendrimers	63
<i>Andrew J. Hilmer, Steven Shimizu, Thomas P. McNicholas, Michael S. Strano</i>	
(191c) Engineering Localized Surface Plasmon Resonances in Si Nanowires	64
<i>Li-Wei Chou, Michael A. Filler</i>	

(191d) Impurities in Semiconductor Nanostructures	65
<i>Vincent C. Holmberg, Ayaskanta Sahu, David J. Norris, Brian A. Korgel</i>	
(191e) Dense Semiconductor Nanowire Arrays Grown Directly On Graphene	66
<i>John Alper, Albert Gutes, Carlo Carraro, Roya Maboudian</i>	
(191f) Inorganic Organic Ligand Exchange On the Surface of Zinc Sulfide Nanocrystals	67
<i>Qudus Lawal, Steven Herron, Stacey F. Bent</i>	
(191g) Leveraging Molecular and Quantum Confinement in Arrayed Nanostructures for Energy Technologies	68
<i>Leigh A. Crosser, Katherine T. Nicol, Gregory E. Chester, Dustin J. Zastrow, Nicholas R. Schwartz, Justin C. Wong, Justin O. Chew, Kirk J. Ziegler, Justin J. Hill, Ryan Reeves</i>	
(191h) Development and Application of Tin/Indium (Sn/In) Nanoparticles As Low Melting Temperature Nanosolder Materials	69
<i>Yang Shu, Karunaharan Rajathurai, Fan Gao, Qingzhou Cui, Zhiyong Gu</i>	
(193a) Nanostructured Optoelectronics: Using New Energy States and High-Energy Photons	70
<i>Vivek Singh, Samuel Goodman, Prashant Nagpal</i>	
(193b) Plasma Synthesis of Metal-Sulfide Nanocrystals	71
<i>Elijah Thimsen, Uwe R. Kortshagen, Eray S. Aydil</i>	
(193c) Layer-By-Layer/M13 Virus Assembled Porous Photoanodes for Efficient Electron Collection in Dye-Sensitized Solar Cells	72
<i>Po-Yen Chen, Angela M. Belcher, Paula T. Hammond</i>	
(193d) Interface Engineering in Solid-State Quantum Dot-Sensitized Solar Cells: Strategies to Improve Charge Collection	74
<i>Katherine E. Roelofs, Thomas P. Brennan, Troy Q. Yang, Stacey F. Bent</i>	
(193e) Virus-Templated Three-Dimensional Photoanodes for Dye-Sensitized Solar Cells With Efficient Electron Collection and Plasmon-Enhanced Light Absorption	76
<i>Po-Yen Chen, Paula T. Hammond, Angela M. Belcher</i>	
(193f) Effect of Oxygen Flow Rate On the Properties of RF-Sputtered SnO₂ Protective Layer and the Performance of DSSC	78
<i>Hsin-Chun Lu, Ya-Hui Chen</i>	
(193g) Improved Performance of Polymer Solar Cells By Silica Nanoparticles	79
<i>Hao Shen, Michael E. Mackay</i>	
(206a) Targeting Proteins to Curvature Patterned Receptor Lipids	80
<i>Marjorie L. Longo</i>	
(206b) Protein Engineering-Enabled Single Molecule Resolution of Protein Structure At Biomaterial Interfaces	81
<i>Sean McLoughlin, Mark J. Kastantin, Daniel K. Schwartz, Joel L. Kaar</i>	
(206c) Adsorption of Serum Proteins Onto Carbohydrate-Functionalized Polyanhydride Nanoparticles Influences Dendritic Cell Activation and Uptake	82
<i>Jonathan Goodman, Julia Vela-Ramirez, Brenda Carrillo-Conde, Rajarshi Roychoudhary, Paola Boggiatto, Nicola Pohl, Michael J. Wannemuehler, Balaji Narasimhan</i>	
(206d) Functionalization of Block Copolymers With Pathogen-Mimicking Sugars for Vaccine Carriers	83
<i>Justin R. Adams, Manibarsha Goswami, Nicola Pohl, Surya K. Mallapragada</i>	
(206e) Pegylated PAMAM Dendrimer Nanocarriers: A Microscopic View From Atomistic Computer Simulations	84
<i>Lin Yang, Vladimir Cabral, Sandro R. P. Da Rocha</i>	
(206f) Preparation and Low Fouling Property of Amphiphilic Fluorinated Block Copolymers (PEGMA-co-MMA)-b-PC6SMA	85
<i>Guangfa Zhang, Qinghua Zhang, Xiaoli Zhan</i>	
(206g) Vapor-Based Synthesis to Prepare Tri-Functional Coatings	87
<i>Hsien-Yeh Chen, Meng-Yu Tsai, Chiao-Tzu Su, Ting-Ju Lin</i>	
(217cw) Biodegradable Polyester Nanocomposites: Phase Miscibility and Properties	88
<i>Vikas Mittal, Khalid Al Zaabi</i>	
(217f) Preparation of Covalently Colored Polymer Latex Based On a New Polymerizable Anthraquinone Dye	89
<i>Botian Li, Jishuai Wang, Fanhe Kong, Chengyou Kan</i>	
(217e) The Role of Mass Transfer in CO₂ - Oil Recovery	90
<i>Truynh Quoc My Duy Tran, Parthasakha Neogi, Baojun Bai</i>	
(217cn) Stable Suspension of Mixed Iron Oxide/Manganese Oxide Nanoparticles in Aqueous Surfactant Solutions and Their Use for Mixer Studies in Liquids Feeds	91
<i>Nikolay Barashkov, Tamara Sakhno, David Eisenberg, Irina Irgibaeva, Sandugash Yergeshbayeva, Tamara Novikova</i>	
(217co) Oxidative Surface Phenomena of Eutectic Gallium Indium	92
<i>Collin Eaker, Michael D. Dickey, David Phipps</i>	
(217da) Crystallographic Changes in Lead Zirconate Titanate Due to High Neutron Radiation Exposure	93
<i>Alexandra J. Henriques, Jennifer S. Forrester, Jacob L. Jones, Joseph T. Graham, Sheldon Landsberger, Jon F. Ihlefeld, Geoffrey L. Brennecke, Donald Brown</i>	
(217g) Interfacial Thermodynamics and Ion Structure in Polyelectrolyte Blends	94
<i>Charles Sing, Jos Zwanikken, Monica Olvera De La Cruz</i>	
(217dc) Adaptive Origami Structures and Their Mechanical Properties	95
<i>Terry Shyu, Pablo F. Damasceno, Paul Dodd, Matthew Shlian, Sharon C. Glotzer, Max Shtein, Nicholas A. Kotov</i>	
(217h) Mathematical Model for the Bulk Polymerization of Styrene in the Presence of Polybutadiene Using a Trifunctional Initiator	96
<i>Emilio Berkenwald, Graciela Morales, Diana A. Estenoz</i>	

(217fq) Synthesis of Poly(N-vinyl-2-pyrrolidone)/Poly(N-isopropylacrylamide-co-acrylic acid) Colloidosomes Using UV Crosslinking	97
<i>Yi Gong, Ai Mei Zhu, Qiu Gen Zhang, Qing Lin Liu</i>	
(217hb) Heat Resistance Effect of CaSO₄ Whiskers to PVC Composites	99
<i>Shuhua Zhang, Yuanyuan Wang, Boru Zhang, Yijun Xie, Zhiwei Huang, Weijun Liu, Jiangna Di</i>	
(217j) Non-Equilibrium Molecular Dynamics Studies of Miscibility and Rheological Behaviour of Blends of Dendrimer/Linear and Hyperbranched/Linear Polymers Under Planar Extensional Flow	101
<i>Elnaz Hajizadeh, B. D. Todd, P. J. Davis</i>	
(217k) Diffusion and Subsequent Polymerization of Monomer in Polymer Pellets - An Effective Approach to Prepare Polymer Nanoblends	102
<i>Fang Chen, Jian Yu</i>	
(217i) Preparation of Hierarchical Hydrogels By Photocrosslinking Induced Phase Separation in Evaporating Solvents	103
<i>Liang Wang, Yifu Ding</i>	
(217df) Engineering Large Self-Assembled Amyloid Fibers As Robust Biomaterials	104
<i>Devin Ridgley, Justin R. Barone</i>	
(217dh) Investigating the Relationships Between Mechanical and Thermal Properties of Hydrogel Nanocomposites	105
<i>Josergio Zaragoza, Matthew Blanco, Kalpith Ramamoorthi, Aitor Zabalegui, Hohyun Lee, Prashanth Asuri</i>	
(217di) Controlling Morphology and Enhancing Electrochemical Performance of Cobalt Oxide By Addition of Graphite	106
<i>Ling Fei, Hongmei Luo</i>	
(217dj) Enzymatic Synthesis of Conducting Polymer-Nanocarbon Composites For Supercapacitor-Electrode Materials	107
<i>Nasrin Raseda, Junghee Park, Keungarp Ryu</i>	
(217l) Rheological Characterization of Commercial Alginate Solutions With High Viscosity and Its Effect in the Production of Microparticles	108
<i>Cristina Rodriguez-Rivero, Loic Hilliou, Eva M. Martín Del Valle, Miguel A. Galan</i>	
(217dk) Characterization and Performance of Polyquinoline - Proton Exchange Membranes	109
<i>Iravan Pramudya, Adelia Latief, Joko Sutrisno, Alan Fuchs</i>	
(217dl) Analysis and Observation of Bulk Polymer Properties in Alkyl-Imidazole Based Poly(Ionic Liquids)	110
<i>W. Jeffrey Horne, Spenser S. Hayward, Kelsey Terrill, Matthew S. Shannon, Jason E. Bara</i>	
(217dm) One-Step Process to Create Porous Structures in Cross-Linked Polymer Films Via Breath-Figure Formations During in Situ Crosslinking Reactions	111
<i>Liang Wang, Yifu Ding</i>	
(217dn) Template-Free Synthesis of TiO₂ Microcages With Improved Photocatalytic Activity	112
<i>Yao Tian, Yuanguai Wang, Dong Yang, Chuang Liu, Zhenwei Tong, Zhongyi Jiang</i>	
(217do) Fabrication and Application of Catalase Covalently Immobilized On TiO₂ Nanotubes	113
<i>Qinghong Ai, Dong Yang, Zhongyi Jiang</i>	
(217dp) Electrochemical Synthesis of NdNi₅ Hydrogen Storage Alloy	114
<i>Sang Mun Jeong</i>	
(217dq) Thermogravimetric Analysis For Wood Fiber Reinforced Polypropylene Base Composites	115
<i>Jae Gyoung Gwon, Jung Hyeun Kim</i>	
(217cr) Delivery of Diblock Copolymer/Plasmid DNA Polyplexes From Polyurethane Scaffolds	118
<i>Elizabeth J. Adolph, Christopher E. Nelson, Craig L. Duvall, Scott A. Guelcher</i>	
(217dt) Phase Separation Kinetics in Block Copolymer Based Pressure Sensitive Adhesives	120
<i>Ninad Dixit, Alicia Pape, Lixia Rong, Eugene Joseph, Stephen M. Martin</i>	
(217n) Kinetics of Step-Growth Polymerization of Glycerol Into Polyglycerol Using Sulfuric Acid As Catalyst	121
<i>Carolina Ardila-Suárez, Gustavo Ramirez-Caballero, Álvaro Ramirez-García</i>	
(217c) Synthesis and Characterization of Temperature and pH Responsive Poly(N-isopropylacrylamide) Copolymer	123
<i>Hanting Chen, Yun Fang</i>	
(217dr) Effects of Extensional Flow and Nanoparticle Stabilization On the Morphology of PS/LLDPE Blends	124
<i>Matthew S. Thompson, Sushant Agarwal, Rakesh K. Gupta</i>	
(217ds) Crystallinity of the Atomic Layer Deposited TiO₂ Thin Films	125
<i>Do-Heyoung Kim, Hyun-Soo Cho</i>	
(217m) Oxidatively-Responsive Chain Extension to Topologically Entangle Artificially Engineered Protein Hydrogels	126
<i>Shengchang Tang, Matthew J. Glassman, Shuaili Li, Simona Socrate, Bradley D. Olsen</i>	
(217dv) Selective Adsorption and Removal of Heavy Metals From Seawater By Nanosorbents	127
<i>Xingqing Chen, Tsz Nok Ng, Viola Sim, King Lun Yeung</i>	
(217fo) Simulation Study On the Preparation and Application of High-Purity Monosilane	128
<i>Guoqiang Huang, Hongxing Wang, Jinyi Chen, Guoliang Su, Huyong Zhao</i>	
(217o) Kinetics of Free-Radical Crosslinking Polymerization: A Comparative Experimental and Numerical Study	129
<i>Stefano Lazzari, Marco Lattuada, Emanuela Del Gado, Tiziana Abete, Lucilla De Arcangelis, Vincent Diederich, Giuseppe Storti, Massimo Morbidelli</i>	
(217dw) Combined Experimental and Computational Study of the Formation of Gold Tetrapod Nanostructures	130
<i>Haining Liu, Yaolin Xu, Ying Qin, Wesley Sanderson, Dorothy Crowley, C. Heath Turner, Yuping Bao</i>	
(217q) Long Chain Branching in Polyethylene By UV Irradiation	131
<i>Poyan Sardashti, Costas Tzoganakis, Marianna Polak, Alexander Penlidis</i>	

(217ft) Cast Solvents and Methods Morphologically, Thermodynamically Affecting Characteristics of Acid and Salt Form Penta Block Copolymers	135
<i>Donghui Wang</i>	
(217p) Network Development and Modification From Water-Dispersible Nanogels	136
<i>Eric Dailing, Jeffrey W. Stansbury</i>	
(217dx) Visualizing Porous Particle Fabrication With Sacrificial Supports	138
<i>Staci A. Van Norman, Joseph W. Tringe, John L. Falconer, Alan W. Weimer</i>	
(217bo) Highly Reactive Non-Woven Photoreactive Cellular Biocomposites for Gas-Phase CO₂ Recycling and H₂ Production	139
<i>Oscar I. Bernal, Michael C. Flickinger</i>	
(217r) Microencapsulation of Hydrogen Peroxide	140
<i>Fulya Sudur, Brian Pleskowicz, Lev Bromberg, Nese Orbey, John Lennhoff</i>	
(217eb) Chemically Triggered Degradable Poly(amides) for Biomaterial Applications	141
<i>Chandrasekhar R. Ramasubramanian, T. Andrew Taton</i>	
(217ec) Three-Dimensional Graphene Network Produced By Organic Synthesis	142
<i>Songzhao Tong, Tianju Fan, Dianbo Zhang, Yidong Liu, Yong G. Min</i>	
(217ed) Preparation and Characterization of Polyaniline Intercalated Graphene Nanopaper Composite	143
<i>Tianju Fan, Dianbo Zhang, Songzhao Tong, Yidong Liu, Yong G. Min</i>	
(217s) Tuning Polymer Molecular Packing Through Solution Processing Methods and Their Characterization	144
<i>Gaurav Giri, Dean M. Delongchamp, Stefan Mannsfeld, Zhenan Bao</i>	
(217t) Solvent Entropy and Coarse-Graining of Polymer Lattice Models	145
<i>Pengfei Zhang, Qiang (David) Wang</i>	
(217v) Polyolefin-Based Nanocomposites: The Role of Compatibilizer On the Mechanical Properties of WS₂ Nanotubes-Reinforced Polypropylene	146
<i>Ioannis Zuburtikudis, Apostolos Baklavaridis</i>	
(217ee) Research On the Kinetics of Calcination / Carbonation Reaction of Ca-Based Sorbents in Simulated Suspension State	147
<i>Lele Zhang, Hui Li, Wen-Bin Yang, Binglu Meng, Jiang-Feng Li, Yong Min</i>	
(217u) Polymerized Ionic Liquid Block Copolymers Prepared By Thiol-Click Chemistry	148
<i>Brian Adzima</i>	
(217ea) Study On the Attenuation of Ca-Based Sorbents Cyclic Carbonation Rate	149
<i>Wen-Bin Yang, Hui Li, Lele Zhang, Jiang-Feng Li, Binglu Meng, Yong Min</i>	
(217ef) Effect of Nanocrystalline Cellulose On the Microstructure and Properties of Bio-Based P(3,4)HB/Pbs Composites	150
<i>Rui Zhang</i>	
(217a) Preparation and Characterization of Zirconia Aerogels By a Non-Alkoxide Sol-Gel Method	151
<i>Liang Zhong, Xiaohong Chen, Huaifei Song</i>	
(217w) Effect of Stearic Acid-Grafted Starch On Processability and Properties of Polyethylene/Thermoplastic Starch Blends	152
<i>Nattaporn Khanoonkon, Rangrong Yoksan, Amod A. Ogale</i>	
(217eg) Computer Simulations of Fluid Flow Over Catalytic Surfaces for Water Splitting	153
<i>Leebyn Chong, Meenakshi Dutt</i>	
(217eh) Effect of Magnesium Stearate On Processability and Properties of Thermoplastic Starch	154
<i>Nattaporn Khanoonkon, Rangrong Yoksan</i>	
(217bp) Pgs/PLLA Fibers Scaffolds By Core/Shell Electrospinning	155
<i>Bing Xu, Qizhi Chen, Wayne Cook</i>	
(217bq) The Electrical Stimulation of Osteoblast Cell Lines Using Self-Doped Sulfonated Polyaniline-Based Interdigitated Electrodes	156
<i>Yidong Liu, Yong G. Min, Yadagari Poojari, Jen-Chieh Wu, Blake Hildreth III, Thomas Rosol, Arthur Epstein</i>	
(217x) Synthesis of Nano Ag in SBA-15 Using Supercritical Carbon Dioxide and the Influence of Different Co-Solvents On the Morphology of the Nanophase	157
<i>Qinqin Xu, Yuling Ma, Aiqin Wang, Jianzhong Yin</i>	
(217br) A Biodegradable Scaffold That Inhibits Nosocomial Infections While Promoting Healing	159
<i>Lei Zhang, Hongyan Ma, James D. Bryers, Tao Bai</i>	
(217ei) Controlled Release Inorganic Gel for Air and Surface Disinfections	160
<i>Doo Won Han, Wei Han, Wai Kwong Ching, Chung Kan Chan, Viola Sim, Felicia Febriana Budihardjo, King Lun Yeung</i>	
(217y) "Petal Effect" Superhydrophobic Surface Based On Polybenzoxazine	161
<i>Juan Liu, Zhong Xin, Xin Lu, Changlu Zhou</i>	
(217z) Transferring The Mechanical Behavior Of Polymeric Surface Layers From Atomistic To Continuum	163
<i>Marcus Schmidt, Roger A. Sauer, Ahmed E. Ismail</i>	
(217ej) Chlorine-Free Electrochemical Disinfection of Water Contaminated With Escherichia Coli	164
<i>Sandugash Yergeshbayeva, Nikolay Barashkov, Irina Irgibaeva, Boris Kisselev, Nellya Bissenova</i>	
(217ek) 3D Scaffolds With Inverted Colloidal Crystal Geometry From Expandable Cationic Poly(DMAA-co-AMTAC) Hydrogel for Well-Plate Format	165
<i>Joong Hwan Bahng, Yichun Wang, Bongjun Yeom, Nicholas Kotov</i>	
(217aa) Enhancing the Rheological Properties of Main-Chain Liquid Crystalline Polymers for Film Coextrusion	166
<i>Zhenpeng Li, Paola Ganzales, Eric Baer, Christopher J. Ellison</i>	
(217fp) Influenza Nanovaccines Containing Hemagglutinin Induce Humoral and Cell-Mediated Immunity	167
<i>Kathleen A. Ross, Lucas Huntimer, Hyelee Loyd, Shaheen Ahmed, Anthony Sambol, Steven Hinrichs, Tatiana Bronich, Susan Carpenter, Michael J. Wannemuehler, Balaji Narasimhan</i>	

(217db) A Novel Method for Preparation of High Strength Hollow Spherical Silicon Dioxide By Plasma Technology	168
<i>Junmei Fan</i>	
(217cx) Liquid-Liquid Dispersion Behavior and Particle Formation in Suspension Polymerization Process	169
<i>Guiming Xie, Yongzhong Bao</i>	
(217el) Mesoscale Ordering and Mechanical Response in Polydomain Smectic Networks	170
<i>Ziniu Yu, Ronald C. Hedden</i>	
(217em) Synthesis and Effect of Fuel of Sr Doped CaTiO₃ Using By Solution Combustion Synthesis (SCS)	171
<i>Choong Hwan Jung, Yeon-Ku Kim, Soon Dong Park</i>	
(217dd) Understanding the Role of Side-Chain Structure On the Morphology and Performance of All-Conjugated Block Copolymer Photovoltaics	172
<i>Kendall Smith, Yen-Hao Lin, Jorge W. Mok, Bridget Stewart, Rafael Verduzco</i>	
(217en) Electrospun Polyacrylonitrile-Based Carbon-Iron Oxide-Silica Nanocomposites Fibers	173
<i>Honglin Qu, Suying Wei, Zhanhu Guo</i>	
(217eo) Kinetics of Step-Growth Polymerization of Glycerol Into Polyglycerol Using H₂SO₄ As Catalyst	174
<i>Carolina Ardila-Suárez, Gustavo Ramirez-Caballero, Alvaro Ramirez-García</i>	
(217ep) Magnetic Epoxy-Magnetite Nanocomposites	176
<i>Jiang Guo, Hongbo Gu, Suying Wei, Zhanhu Guo</i>	
(217eq) Epoxy Resin Nanocomposites Reinforced With Polyaniline Stabilized Silica Nanoparticles With Reduced Flame Retardant Behavior	177
<i>Hongbo Gu, Jiang Guo, Qingliang He, Suying Wei, Zhanhu Guo</i>	
(217er) Anticorrosive Conductive Polyurethane Multiwalled Carbon Nanotubes Nanocomposites	178
<i>Huige Wei, Daowei Ding, Suying Wei, Zhanhu Guo</i>	
(217ab) Conformations, Shapes, and Viscoelastic Properties of 1, 4 Polybutadiene Using a Rotational Isomeric State Approach	179
<i>Suvrajyoti Kar, Michael L. Greenfield</i>	
(217cp) Synthesis of Pnipam Microparticles With Novel Fiber Packed Reactor for Use in Hydrogels	180
<i>Alex W. Sherrill, Holly A. Stretz, Pedro E. Arce, George A. Holburn</i>	
(217es) Inhibited Growth of Staphylococcus Aureus and Pseudomonas Aeruginosa On Paper Towels Through the Use of Selenium Nanoparticles	181
<i>Qi Wang, Thomas J. Webster</i>	
(217es) Replicating Block Copolymer Patterns By Photochemical Transfer Printing	184
<i>Dustin W. Janes, Bradley D. McCoy, Takejiro Inoue, Ishita Madan, Christopher J. Thode, C. Grant Willson, Paul F. Nealey, Christopher J. Ellison</i>	
(217et) Preparation of Reduced Graphene Oxide-MnO_x Composites By Anodic Deposition and Their Supercapacitive Behaviors	185
<i>Sang Mun Jeong, Kwang Ho Jeong</i>	
(217eu) Preparation of Chitosan Microspheres and Their Release Properties	186
<i>Fang Wang, Huailong Zhang, Rui Zhang, Qinwei Gao</i>	
(217ac) Dynamic Modeling and Optimization of An Industrial Semibatch Acrylonitrile-Vinyl Chloride Copolymerization Reactor	187
<i>Riza Kizilel, Seda Kizilel, Yaman Arkun, Eren Simsek, Caner Nazli, Derya Aydin</i>	
(217ct) Rational Design of Polymeric Delivery Vehicles for Anti-HIV and Anti-Chlamydial Microbicides	189
<i>Thora W. Whitmore, Ichie Osaka, P. Scott Hefty, Kyle V. Camarda, Sarah L. Kieweg</i>	
(217ad) Adsorption/Desorption and Transport of Water in Two-Dimensional Hexagonal Mesoporous Silica	191
<i>Hideki Yanagihara, Hirofumi Daiguji, Kyohei Yamashita, Akira Endo</i>	
(217ev) Synthesis of Thermo-Responsive Polymer/Ferrite Composite for Heavy Metal Ion Recovery	192
<i>Yuichi Tanigaki, Masanori Ochi, Soshi Watanabe, Junichi Ida, Tatsushi Matsuyama, Hideo Yamamoto</i>	
(217ew) Synthesis and Crystallization Behavior of Well-Defined Poly(L-lactide)-b-Polystyrene Copolymers	193
<i>Tao Liu, Ling Zhao</i>	
(217ae) Rheology & Thermal Stability of Ethoxylated Surfactants and Polymers Systems Used for Enhanced Oil Recovery in Carbonate Reservoirs	195
<i>Izhar Ahmed Malik, Ibnelwaleed Hussein, Abdullah Sultan, Usamah Mubaiyedh</i>	
(217af) Water Soluble Ferulic Acid Grafted Chitosan: An Antioxidant for Active Biodegradable Films	196
<i>Rangrong Yoksan, Sarekha Woranuch</i>	
(217ex) Polymeric Post-Synthesis Treatment for Improving Zeolite Coating Stability	197
<i>Cigdem Atalay-Oral, Aylin Atakan, Melkon Tatlier</i>	
(217ey) Green Chemistry Synthesis of Nanostructured Polyaniline and Its Derivatives	199
<i>Neha Manohar</i>	
(217fr) Effects of Polymer Solid Content and Chemical Structure On High Temperature Creep Compliance of Phosphoric Acid-Doped Polybenzimidazole Gel Membranes	200
<i>Xiaoming Chen, Guoqing Qian, Max Molle, Brian C. Benicewicz, Harry Ploehn</i>	
(217ez) Biocomposites of Thermoplastic Starch and Ginger Residues	201
<i>Rangrong Yoksan, Sumana Kunatham</i>	
(217fb) Biodegradable Film From Polylactic Acid/Thermoplastic Starch Blends	202
<i>Rangrong Yoksan, Amporn Sane, Anchana Pattanasupong, Sasitorn Tongchitpakdee</i>	
(217fa) The Preparation of Well-Dispersed White Carbon Black (hydrated silica) From Coal Gangue Via a Carbonation Method	203
<i>Jing Wang, Helen H. Lou, Fangqin Cheng, Li Fang</i>	

(217dg) Statistical Thermodynamics of Irreversible Gelation	204
<i>Themis Matsoukas</i>	
(217fc) Chitosan/MWCNT-Decorated With Agnp Composite: Dielectric and Antibacterial Characterization	205
<i>Janett Betzabe Gonzalez-Campos, Julia Hernandez-Vargas, Evgen Prokhorov, Javier Lara, Judit Aviña-Verduzco</i>	
(217de) A High-Performance Lithium-Air Battery With Nanostructured La_{1-x}CexFe_{1-y}MnyO₃ Catalyst	206
<i>Tiejun Meng, Simon Ng, Mahbuba Ara, Lixin Wang, Ratna Naik</i>	
(217fd) High Temperature Gas Sensors Based On Electrospun Metal Oxide Nanofibers	207
<i>Yixin Liu, Xiangcheng Sun, Puxian Gao, Yu Lei</i>	
(217fe) Synthesis and Characterization of Fluorescent Spherical Polyelectrolyte Brushes	208
<i>Xiaochi Liu, Shijian Ma, Yuchuan Tian, Ayyaz Ahmad, Xinhua Zhong, Xuhong Guo</i>	
(217ff) Concentration Profile of Oscillation Annealed PCBM in P3HT Films	209
<i>Preejith Ambuken, Holly Stretz</i>	
(217fg) Effect of Preparation Procedure On Polyethylene/Thermoplastic Starch/Zeolite ZSM-5 Composite	210
<i>Ranumas Thipmanee, Sam Lukubira, Amod A. Ogale, Amporn Sane</i>	
(217fh) Polyamine-Decorated Metal-Organic Framework Adsorbents for CO₂ Capture	211
<i>Liang Chen</i>	
(217fi) Analysis of the Humid Gas Permeation in Glassy Polyimides: A Modeling Approach	212
<i>Luca Ansaroni, Caroline Tsvigu, Matteo Minelli, Marco Giacinti Baschetti, Giulio C. Sarti</i>	
(217aj) Influence of Initiator's Chemical Composition On the Thermal Stability of Poly(styrene)-b-Poly(2,2,3,4,4,4-hexafluorobutyl-methacrylate) Synthesized Using Atom Transfer Radical Polymerization	216
<i>Edward M. A. Guerrero-Gutierrez, Maritza Perez, David Suleiman</i>	
(217ag) A Laterally-Mobile Immiscible Mixed Polyelectrolyte/Neutral Polymer Brush Undergoes a Macroscopic Phase Separation When the Two Polymer Types Are of Comparable Size	217
<i>Hoyoung Lee, Hae-Woong Park, Vasilios Tsouris, Binhua Lin, Mati Meron, You-Yeon Won</i>	
(217ai) Validation of Micro-Reaction Technology for Polymerization Processes	218
<i>Nazanin Entesari, Marcus Grünewald</i>	
(217fj) Controlled Gelation of Poly(3-alkylthiophene)s in Bulk and Thin Film Environments Using Low Volatility Solvent/Non-Solvent Mixtures	220
<i>Greg Newbloom, Pablo De La Iglesia, Danilo Pozzo</i>	
(217ak) Modeling of Dielectric Properties of Complex Fluids With the Electrolyte CPA Equation of State	221
<i>Bjørn Maribo-Mogensen, Georgios Kontogeorgis, Kaj Thomsen</i>	
(217am) Grafting of Maleic Anhydride Onto Natural Rubber Via Free Radical Initiation in Supercritical Carbon Dioxide	222
<i>Barbara A. Wheelden, Ryan E. Tschannen, Amber R. Tupper, Sunggyu Lee</i>	
(217an) Material Design and Mechanistic Studies On Temperature-Responsive Polymer Electrolytes for Electrochemical Systems	223
<i>Jesse C. Kelly, Mark E. Roberts</i>	
(217ao) Non-Isothermal Analysis of Extrusion Film Casting Process Using Molecular Constitutive Equations	224
<i>Pankaj Doshi, Harshawardhan V. Pol, Sourya Banik, Lal Busher Azad, Ashish K. Lele, Sumeet S. Thete, Renu Dhadwal</i>	
(217ap) Nonlinear Dynamics and Hopf Bifurcation in Controlled/"Living" Radical Polymerization of Styrene	225
<i>Nan Zhang, Warren D. Seider, Bingzhen Chen</i>	
(217fi) 1-n-Alkylimidazoles for Acid Gas Removal: A Study of SO₂:N-Functionalized Imidazole Complexes and Absorption Properties	227
<i>Jason E. Bara, Matthew S. Shannon, A. Christopher Irvin</i>	
(217bu) A New Strategy for the Photopolymerization of Heterocyclic and Polar Monomers	228
<i>John W. Whitley, W. Jeffrey Horne, Jason E. Bara</i>	
(217fk) Synthesis and Characterization of a Polysiloxane Based Magnetic Liquid Crystalline Elastomer Composite	229
<i>Sephany M. Herrera-Posada, Barbara Calcagno, Aldo Acevedo</i>	
(217aq) Sucrose Ester/ Poly(lactic acid) Nanocomposites for Food Packaging Application: Fabrication and Characterization	230
<i>Valapa Ravi Babu, Gopal Pugazhenti, Vimal Katiyar</i>	
(217bt) Pt Nanoparticle Synthesis Via Atomic Layer Deposition for Use in Fuel Cells	232
<i>Alia M. Lubers, Kelly M. Anderson, Troy D. Gould, Matthias Faust, Martin Seipenbusch, Alan W. Weimer</i>	
(217bv) Polymerization in Micro-Layers to Ultrahigh Molecular Weight Nonlinear Polycarbonates	233
<i>In Hak Baick, Kyu Yong Choi</i>	
(217bw) Characterization of Monomer Miniemulsion Stability	234
<i>Paula M. N. Ambrogi, Reinaldo Giudici, Cristina S. R. Serra, María Magdalena E. Cólman, Claudia Sayer, Dennis Chicoma</i>	
(217ar) Dynamic Covalent Assembly of Information-Bearing Oligomers	235
<i>Timothy F. Scott, Tao Wei</i>	
(217as) A Microfluidic Method to Evaluate Degradable Hydrogels for Drug Delivery	236
<i>Erin L. Jablonski, Brandon M. Vogel, James E. Maneval, Anne Ellenberger</i>	
(217at) Rheological Properties of Thermoviscosifying Polymers in High-Temperature High-Salinity Environment	237
<i>Muhammad Shahzad Kamal, Abdullah S. Sultan, Ibnelwaleed A. Hussein, Ming Han</i>	
(217bx) Imparting New Functions to Zeolitic-Imidazolate Framework ZIF-8 Membranes Via Ligand Exchange and Post Synthetic Modification	238
<i>Hyuk Taek Kwon, Hae-Kwon Jeong</i>	
(217au) Synthesis and Optimization of Polymer Micelles Formed Via Electrospray-Enabled Interfacial Instability	240
<i>Matthew S. Souva, Anthony Duong, Gauri M. Nabar, Jessica O. Winter, Barbara E. Wyslouzil</i>	
(217bz) Investigating the Factors Controlling MMT Platelet Dispersion in MMT/Pvoh Nanocomposites	241
<i>Shailesh Shori, Xiaoming Chen, Harry J. Ploehn</i>	

(217by) Highly Propylene-Selective Supported Zeolitic-Imidasolate Framework (ZIF-8) Membranes By Rapid Microwave-Assisted Seeding and Subsequent Secondary Growth	242
<i>Hyuk Taek Kwon, Hae-Kwon Jeong</i>	
(217ca) All-in-One Peptide Biomaterial: Biomolecular Recognition, Ultra-Low Fouling, and Surface Anchoring	244
<i>Ann K. Nowinski, Andrew D. White, Fang Sun, Andrew J. Keefe, Shaoyi Jiang</i>	
(217fm) Isothermal Water Splitting Using The Two-Step Redox “Hercynite Cycle”	245
<i>Christopher L. Muhich, Brian W. Evanko, Kayla Weston, Paul Lichty, Xinhua Liang, Charles B. Musgrave, Alan W. Weimer</i>	
(217av) Topographic Effects On Chemo-Epitaxy in Directed Self-Assembly of Block Copolymer Films	246
<i>Benjamin Nation, Andrew Peters, Richard A. Lawson, Peter J. Ludovice, Clifford L. Henderson</i>	
(217fs) NMR Analysis of the Concentration Dependence of HPMCAS Polymer Dynamics to Inform Drying Models for Spray Dried Dispersions	247
<i>Nathan H. Williamson, Amber L. Broadbent, Rick F. Falk, Sarah L. Codd, Joseph D. Seymour</i>	
(217d) An Amphiphilic Polysulfone-Graft-Poly(ethylene) Glycol Random Copolymer for Alkaline Exchange Membrane Fuel Cells	248
<i>Steve He, Shifan Mao, Andrew J Spakowitz, Curtis W. Frank</i>	
(217ax) Effects of Ionic Groups On the Assembly of Polymer-Grafted Nanoparticles	249
<i>Yang Jiao, Pinar Akcora</i>	
(217aw) Kinetics of Polymerization in High Internal Phase Emulsions	250
<i>Reza Foudazi, Polina Gokun, Donald L. Feke, Ica Manas-Zloczower, Stuart J. Rowan</i>	
(217cc) Effect Of The Incorporation Of Polyhexamethylenebiguanide (PHMB) On The Properties Of Chitosan-Alginate FILMS	251
<i>Cecilia Z. Bueno, Herminio J. C. Sousa, Mara E. M. Braga, Ana M. A. Dias, Ângela M. Moraes</i>	
(217cb) Synthesis of Green Polyurethane Foam Using Waste Glycerol and Hay Fibers	252
<i>Sergio Mendez, Lisa Aungyong, Yu-Fu Ko</i>	
(217cd) Evaluation of the Characteristics of Chitosan-Xanthan Films in Comparison to Those of Other Chitosan-Polymer Complexes Focusing the Application As Wound Dressings	253
<i>Ângela M. Moraes, Márcia Z. Bellini, Itiara G. Veiga, Cecilia Z. Bueno, Paulo T. V. Rosa</i>	
(217ay) Effect of Salts On Polyacrylamide Hydrolysis and Cross-Linking With Polyethylenimine At Elevated Temperatures	254
<i>Khalid M. El-Karsani, Ghaithan A. Al-Muntasheri, Ibnehwaleed A. Hussein</i>	
(217az) Injectable, Thermoresponsive Hydrogels With Tunable Cross-Linking Kinetics Based On Ketone and Aldehyde-Functionalized Pre-Polymers	255
<i>Mathew J. Patenaude, Todd R. Hoare</i>	
(217fn) Determining the Reactivity of Low and High Carbon Fly Ashes for Application in Geopolymer Concrete	259
<i>Ojas Chaudhari, Joseph Biernacki</i>	
(217ba) Precise Simulation of Fluid-Solid Transitions in Colloid-Polymer Systems	260
<i>Michael Nayhouse, G. Orkoulas</i>	
(217bb) Experimental and Theoretical Study of High-Impact Polystyrene (HIPS) Devolatilization	261
<i>Emilio Berkenwald, Natalia Casis, Diana A. Estenoz</i>	
(217bn) Highly Monodispersed Colloidal Poly(glycidyl methacrylate) Sub-Microspheres With Tunable Gold Nanoparticles	262
<i>Xingru Yan, Maolin Li, Guofang Chen, Zhanhu Guo, Suying Wei</i>	
(217bc) Covalent Attachment of Polyelectrolyte Multilayers to Cells	263
<i>Rosanna M. Lim, Jonathan B. Gilbert, Robert E. Cohen, Michael F. Rubner</i>	
(217cu) The Effects of Protein Deposition and Shear On Polymer Micelle Morphology and Stability	264
<i>Paul Dalhaimer, Megan Yang, John Dunlap</i>	
(217ce) Predicting the Chiral-Selectivity of Swcnts On Bimetallic Catalyst Surfaces Using DFT Calculations	265
<i>Debosruti Dutta, Venkat R. Bheethanaboina, R. Mohan Sankaran</i>	
(217cf) Scaffolded Growth of Thin Zeolite Films Towards High Performance Molecular Separations and Reaction-Separation Technologies	266
<i>Shih-Chieh Kung, Mark A. Snyder</i>	
(217bs) Modular Biomaterial Scaffolds for Scalable Tissue Assembly and Rapid Vascularization	267
<i>Ramkumar Tiruvannamalai-Annamalai, D. Randall Armant, Howard W. T. Matthew</i>	
(217cg) Synthesis and Characterization Copolymers From Succinic Acid and Urea	270
<i>Luiza Castro, Elaine Cabral-Albuquerque, Jose Pinto, Rosana Fialho</i>	
(217ch) Preparation and Characterization of Carbon-Coated Silicon Nano-Composites As Anodes for Lithium-Ion Batteries	271
<i>Ti-Chiang Chueh, Shi-Chern Yen</i>	
(217bd) Structure, Physical Properties, and Ion Transport of TEOS-TIP-PBC Hybrid Inorganic-Organic Membranes Depending On Composition	272
<i>Fei Huang, Chris Cornelius</i>	
(217cj) Design of Biomimetic Crystal Modifiers of Calcium Biomineralization As Potential Drug Candidates for Pathological Diseases	273
<i>Sahar Farmanesh, Jeffrey D. Rimer</i>	
(217be) Diblock Copolymer Directed Self-Assembly Line Roughness: Effects of Polydispersity and χN	274
<i>Andrew Peters, Richard Lawson, Peter J. Ludovice, Clifford Henderson</i>	
(217bf) Vinyl Ester Resin: Rheological Behaviors, Curing Kinetics, Thermo-Mechanical and Tensile Properties	275
<i>Xi Zhang, Wahid Bitaraf, Suying Wei, Zhanhu Guo</i>	
(217bg) Manipulating the Motion of Droplets On Stimuli-Responsive, Fiber-Filled Gels	276
<i>Xin Yong, Gerald T. McFarlin, Olga Kuksenok, Anna C. Balazs</i>	

(217bh) Influence of a Novel Beta-Nucleating Agent On the Structure, Mechanical Properties and Crystallization Behavior of Isotactic Polypropylene	277
<i>Shicheng Zhao, Zhong Xin</i>	
(217ck) KCl Tablets Production From Fine Process and Polymers	278
<i>Nascimento Carla, Elaine Cabral-Albuquerque, Jose Pinto, Rosana Fialho</i>	
(684d) Impedance Behavior and Analysis of Binder-Free Ni-Mo Composite Cathode for Li-O2 Batteries	279
<i>Ruben Nelson, Mark H. Weatherspoon, Joyce Kosivi, Egwu E. Kalu, Jim P. Zheng</i>	
(217cl) Multifunctional Epoxy Nanocomposites With Various Shape of Nanofillers	282
<i>Xi Zhang, Ouassima Alloul, Qingliang He, Jiahua Zhu, Suying Wei, Zhanhu Guo</i>	
(217cm) Old Material, New Function - Polypropylene Grafted With Maleic Anhydride in Manipulating the Crystalline Phase of Magnetic Nanocrystals	283
<i>Qingliang He, Suying Wei, Xi Zhang, Zhanhu Guo</i>	
(217cy) Development of Nanoparticle-Stacked Membranes Fabricated By Using Functionalized Silver Nanoparticles	284
<i>Shinji Kawada, Daisuke Saeki, Hideto Matsuyama</i>	
(217bj) Fabrication and Thin Film Characterization of Sulfonated Poly(Styrene-Isobutylene-Styrene) Triblock Copolymers for Microelectronic Applications	286
<i>Agnes Padovani, Omar Movil</i>	
(217bi) Investigation of Translation Diffusion of Flexible Macromolecules in Vicinity of Functional Solid Substrates Via Computationally Efficient Hi-Fidelity Brownian Dynamics Simulation	287
<i>Mahdy Malekzadeh Moghani, Bamin Khomami</i>	
(217bk) Confinement and Antiplasticization in Hydrated Thin Ionomer Films	288
<i>Shudipto Dishari, Michael A. Hickner</i>	
(217bl) Toughened Epoxy Thermosets Through Rearrangements of Network Molecular Architecture	289
<i>Majid Sharifi</i>	
(217bm) Characterizing Interfacial Interactions in Li-Ion Batteries	290
<i>Praveen Meduri, Michael A. Hickner</i>	
(217cz) Composite Asymmetric Bi-Layer PVA-Cellulose Ultrafiltration Membranes	291
<i>John Miles, Audie Thompson, Felecia Nave</i>	
(236a) Polyampholyte Polymers As a Novel Nonfouling Biomaterial Platform	292
<i>Matthew T Bernards, Megan E. Schroeder, Qinyi Wang</i>	
(236b) Synthesis, Characterization and Properties of Biocompatible Poly(glycerol sebacate) Pre-Polymer and Gel	293
<i>Yuan Li</i>	
(236c) 3D in Vitro Model of Tumor Microenvironment to Study the Breast Cancer Biology	294
<i>Amita Daverey, Wenjian Zheng, Srivatsan Kidambi</i>	
(236d) Enhancing Crosslinking Efficiency and Mechanical Performance of Glycosaminoglycan Hydrogels	295
<i>Anahita Khanlari, Jason Schulteis, Michael S. Detamore, Stevin H. Gehrke</i>	
(236e) Rational Design of Biomimetic Crystal Modifiers: Controlling Calcium Biomineralization in Pathological Diseases	296
<i>Sahar Farmanesh, Pankaj Karande, Jeffrey D. Rimer</i>	
(236f) Biodegradability in Different Media and Thermal/Mechanical Properties of Polyethylene-Collagen Hydrolyzate Thermoplastic Blends	297
<i>Monica Puccini, Maurizia Seggiani, Sandra Vitolo, Elena Balestri</i>	
(236g) Hydrogel Systems to Examine Diffusion-Mediated Paracrine Signaling On Hematopoietic Stem Cell Fate	298
<i>Bhushan Mahadik, Luke Skertich, Brendan A. C. Harley</i>	
(236h) Preparing Nanorods of Titania-Hydroxyapatite Composites Using a Surfactant-Assisted Hydrothermal Method for Orthopedic Applications	300
<i>Mehrnaz Salarian, Raziye Samimihaghozar, Paul A Charpentier</i>	
(250a) Chemical Vapor Phase Formation of Complex Heterostructures	301
<i>Thomas F. Kuech</i>	
(250b) RF Plasmas for Thin Film Etching, Deposition, and Surface Modification	302
<i>Dennis W. Hess</i>	
(250c) Nanomaterials for Biomedical and Green Chemistry Applications	303
<i>Jackie Y. Ying</i>	
(250d) Non-Thermal Plasmas for Biomedicine: A New Frontier in Plasma Processing	304
<i>David B. Graves</i>	
(250e) Fundamental Models of the Metalorganic Vapor Phase Epitaxy of Compound Semiconductors	305
<i>T. J. Mountziaris</i>	
(250f) Computational Modeling of Ultrasound Wave Propagation in Healing Bones	306
<i>Dimitrios I. Fotiadis</i>	
(250g) Chemical Reactor Modeling: Yesterday, Today, and Tomorrow	307
<i>Sadasivan Shanka</i>	
(262a) Effects of Composition and Compositional Distribution On the Optoelectronic Properties and Function of Semiconductor Ternary Quantum Dots	308
<i>Xu Han, Sumeet C. Pandey, Dimitrios Maroudas</i>	
(262b) Molecular Modeling of Nanoparticles and Conjugated Polymers During Synthesis of Photoactive Layers of Organic Photovoltaic Solar Cells	309
<i>Sm Mortuza, Corinna Cisneros, Mark Dela Cruz Bartolo, Soumik Banerjee</i>	

(262c) Integrating Photosystem I Proteins With Advanced Materials for Biologically Inspired Solar Energy Conversion	311
<i>G. Kane Jennings, Gabriel Leblanc, Darlene Gunther, Siyuan Yang, David Cliffe</i>	
(262d) Exciton Diffusion in Quantum-Dot Thin Films	312
<i>William A. Tisdale</i>	
(262e) Photonic Curing of Nanocrystals for Photovoltaics	313
<i>C. Jackson Stolle, Taylor B. Harvey, Douglas R. Pernik, Jiang Du, Dongjoon Rhee, Brian A. Korgel</i>	
(262f) Chloride Surface Modified Cadmium Telluride Nanocrystals for Photovoltaics	314
<i>Daniel J. Hellebusch, A. Paul Alivisatos</i>	
(262g) Multistep Selenization of Copper Indium Gallium Selenide (CIGS) Nanocrystal Photovoltaics	315
<i>Taylor B. Harvey, Timothy Bogart, C. Jackson Stolle, Jiang Du, Douglas R. Pernik, Brian A. Korgel</i>	
(262h) Exciton Dissociation and Charge Carrier Generation At Core/Shell Heterojunction in Quantum Dots	316
<i>Arindam Chakraborty</i>	
(265a) Nonlinear Elasticity: From Single Chain to Networks and Gels	317
<i>Jan Michael Carrillo, Frederick C. Mackintosh, Andrey Dobrynin</i>	
(265b) Formation and Microstructure of Self-Assembled Molecular Gels	318
<i>Nikola Dudukovic, Charles F. Zukoski</i>	
(265c) Cavitation Or Fracture? Measuring Material Properties With a Mechanical Instability	319
<i>Shelby B. Hutchens, Sami Fakhouri, Alfred J. Crosby</i>	
(265d) Swelling of Crosslinked Elastomers: Frenkel, Flory, Rehner Revisited	321
<i>Ben Xu, Xiaojun Di, Jinrong Wu, Gregory B. McKenna</i>	
(265e) Invited Talk: Patterned Sheets and Multilayers of Photo-Crosslinkable Polymers	322
<i>Ryan C. Hayward</i>	
(265f) Covalently Adaptable Networks As Biophysical-ECM Mimics for Cell Culture	323
<i>Daniel McKinnon, Dylan Domaille, Jennifer Cha, Kristi S. Anseth</i>	
(265g) Hindered Diffusion in Contact-Lens-Material Hydrogels	324
<i>David Liu, Nicole Taylor, Thomas J. Dursch, Csaba Kotsmar, Clayton J. Radke</i>	
(266a) Invited Talk: Polymer Thin Film Surface Area and Stiffness Influences Bacteria Inactivation and Biofilm Formation	326
<i>Jessica D. Schiffman, Katrina A Rieger, Kristopher W Kolewe</i>	
(266b) Polymer Coatings for Biomedical Applications Using Low Temperature, Atmospheric Pressure Plasma	327
<i>Susan Farhat, Mary Gilliam, Ali Zand, Monserrat Rabago-Smith</i>	
(266c) Vapor-Phase Deposition of Polymers Onto Liquid Substrates	328
<i>Patrick Haller, Laura Bradley, Malancho Gupta</i>	
(266d) Photodirected Wrinkle Formation On a Thiol-Ene Elastomer	329
<i>Stephen Ma, Samantha Mannino, Norman J. Wagner, Christopher J. Kloxin</i>	
(266e) Locomotion Based On Hygromorphic Bilayer Actuator: Humidity-Induced Swelling/Deswelling of Layer-By-Layer Films	330
<i>Daeyeon Lee, Sang-Wook Lee, Jacob Prosser</i>	
(266f) Photochemical Transfer Printing of Block Copolymer Patterns	331
<i>Dustin W. Janes, Bradley D. McCoy, Takejiro Inoue, Ishita Madan, Christopher J. Thode, C. Grant Willson, Paul F. Nealey, Christopher J. Ellison</i>	
(266g) Zwitter-Wettability and Antifogging Coatings With Frost-Resisting Capabilities	332
<i>Hyomin Lee, Maria L. Alcaraz, Michael F. Rubner, Robert E. Cohen</i>	
(275a) Supercritical Carbon Dioxide (scCO₂) Processing of Polystyrene/Clay Nano-Composites: Structures and Properties	333
<i>Fengyuan Yang, Robert Kriegel, Rangaramanujam Kannan</i>	
(275b) Mechanical Reinforcement and Nanoparticle Dispersion of Hydrogen Bonded Supramolecular Polymer-Silica Nanocomposites	334
<i>Colin C. Neikirk, Rodney Priestley</i>	
(275c) Improving the Electrical Conductivity of Polycarbonate Carbon Nanotubes Composites	335
<i>Kevin Herrington, John Quigley, Chen Qian, Choi Woohyun, Donald G. Baird</i>	
(275d) Graphene-Polymer Composite Materials	336
<i>Indrani Chakraborty, Nicholas Heeder, Arun Shukla, Arijit Bose</i>	
(275e) Nanostructure of a Novel Fluoroblock Copolymer Using Atom Transfer Polymerization: Poly(styrene)-b-Poly(2,3,4,5,6-Pentafluorostyrene)-b-Poly(2,2,3,4,4,4-Hexafluorobutyl methacrylate)	337
<i>Edward M. A. Guerrero-Gutierrez, Maritza Perez, David Suleiman</i>	
(275f) Biorenewable Chitin Reinforced Polyethylene Oxide(PEO) Light Weight Composites	338
<i>Jie Wu, J. Carson Meredith</i>	
(275g) A Hydrated Salt/SiO₂ Shape-Stabilized Phase Change Material Prepared Via Sol-Gel Process	339
<i>Yuping Wu</i>	
(275h) Structure-Property Relationships for PDMS-Silica Nanocomposites	340
<i>Miao Luo, Malavarayan Sankarasubramanian, Sitaraman Krishnan, John B. McLaughlin</i>	
(293a) Phosphorylated Amphiphilic Pegs: Next Generation Anti-Microbials	341
<i>Matthew J. Kade, Olga Zaborina, Alexander Zaborin, Jennifer Defazio, John Alverdy, Matthew Tirrell</i>	
(293b) Inhibition of Foreign Body Capsule Formation By Implanted Zwitterionic Hydrogels	342
<i>Lei Zhang, Tao Bai, Shaoyi Jiang</i>	
(293c) Reducing Nonspecific Protein Adsorption and Friction Force By Stable Self-Assembled Monolayers of Zwitterionic Polysulfobetaine With Adhesive Bisphosphonic Acid On Titanium Oxide Surfaces	343
<i>Hao Tian Sun, Shengfu Chen</i>	

(293d) Multifunctional Polyampholyte Hydrogels With Nonfouling and Protein Conjugation Capacity	344
<i>Megan E. Schroeder, Kevin Zurick, Daniel E. McGrath, Matthew T Bernards</i>	
(293e) Sterilization of Anti-Microbial Surface Coatings	345
<i>Jeffrey M. Halpern, Catherine Gormley, Melissa Keech, Horst A. Von Recum</i>	
(293f) Antigen Specific Lysis: High Throughput, High Purity Cell Sorting Through Polymer Design	346
<i>Jacob Lilly, Gabriela Romero-Urbe, Weijie Xu, Naveed Bakh, Roberto Arreaza, Vivek Balasubramaniam, Brad J. Berron</i>	
(293g) Endotoxin Binding By the Cationic Amphiphilic Peptide WLBU2 in Relation to Polymyxin B	347
<i>Matthew Ryder, Xiangming Wu, Joseph McGuire, Karl Schilke</i>	
(293h) Residence Time Distribution and Evaluation of Exit Concentration in a New Generation Axial Flow Bioreactor	350
<i>Jagdeep T. Podichetty, Sundararajan V. Madihally</i>	
(296a) Characterization of Internal Structure in Composite Latex Dispersions Using Contrast Variation Neutron Scattering	352
<i>Jeffrey J. Richards, Danilo Pozzo</i>	
(296b) Silver Nanoparticles Stabilized By α-Zirconium Phosphate Nanosheets	353
<i>Jingfang Yu, Johnathan E. Sims, Luyi Sun</i>	
(296c) Photocrosslinked Styrene-Butadiene-Styrene (SBS) Polymer Gels for Biomedical Applications	354
<i>Dogan Gidon, Seda Kizilel</i>	
(296d) Formation Mechanism of Graphene Oxide Nano-Sheet Nanocomposites Decorated With Metal Nanoparticles	355
<i>Honglin Qu, Suying Wei, Zhanhu Guo</i>	
(296e) Evaluation of Strength Recovery At the Fiber-Matrix Interface Based On the Diels-Alder Reaction	356
<i>Amy M. Peterson, Robert Jensen, Giuseppe Palmese</i>	
(296f) Molecular Dynamics Simulation of the Interfacial Shear Strength of a 3-Layer Graphene Nanoplatelet-Vinyl Ester Resin Matrix	357
<i>Changwoon Jang, Thomas E. Lacy, Steven R. Gwaltney, Hossein Toghiani, Charles U. Pittman</i>	
(296g) Controlling Surface Morphology and Mechanical Properties Through Marangoni Effects and Surface Energies in Creating Multifunctional Epoxy- Clay Nanocomposites	358
<i>Timothy Shenk, Robb M. Winter, Kenneth M. Benjamin</i>	
(296h) Polypropylene/Carbon Nanotubes (CNTs) Nanocomposites: Surface Modification of CNTs By Coupling Agent and Stabilization By Maleic Anhydride Grafted Polypropylene	359
<i>Qingliang He, Suying Wei, Zhanhu Guo</i>	
(307a) Micro and Extended-Nano Fluidics Device Technology for Bioanalysis	360
<i>Takehiko Kitamori</i>	
(307b) Flow Lithography to Create Encoded Microparticles	362
<i>Patrick S. Doyle</i>	
(307c) Development of Electrochemical Microsystems for Bio- and Energy- Applications, A Story Starting From Mit's Micro-Reactor	363
<i>I-Ming Hsing</i>	
(307d) Mosaic Hydrogels: Continuous Formation of Multiscale Soft Materials	364
<i>Axel Guenther</i>	
(307e) The Unlikely Marriage – Microplumbing and Developmental Systems Biology	365
<i>Hang Lu</i>	
(307f) Microchemical Reaction Engineering of Nanomaterials Syntheses	366
<i>Saif A. Khan</i>	
(307g) Microsystems for Discovery and Development – Next Steps	367
<i>Klavs F. Jensen</i>	
(318a) Smaller Than the Bandgap: The Tale of Low-Energy Photons	368
<i>Qi-C. Sun, Chih-Heng Lien, Prashant Nagpal</i>	
(318b) Polymer-Free Near-Infrared Photovoltaics With Single Chirality (6,5) Semiconducting Carbon Nanotube Active Layers	369
<i>Rishabh Jain, Rachel Howden, Kevin Tvrdy, Steven Shimizu, Andrew J. Hilmer, Thomas P. McNicholas, Karen K. Gleason, Michael S. Strano</i>	
(318c) Suppressing Optical Absorption in Nanostructured Metal Electrodes in Photovoltaics	370
<i>Sang Eon Han</i>	
(318d) Nanopore-Type Black Silicon Anti-Reflection Layers Fabricated By a One-Step Silver-Assisted Chemical Etching	371
<i>Yen-Tien Lu, Andrew R. Barron</i>	
(318e) Band Alignment of Ternary Lead Chalcogenide Quantum Dots Via Composition and Size Tuning for Photovoltaic Applications	373
<i>Axel Palmstrom, Pralay Santra, Stacey F. Bent</i>	
(318f) Charge Transfer Structure-Reactivity Dependence of Fullerene/Single-Walled Carbon Nanotube Heterojunctions	374
<i>Andrew J. Hilmer, Kevin Tvrdy, Jingqing Zhang, Michael S. Strano</i>	
(318g) Nano- and Molecular Precursors for CdTe Photovoltaics	375
<i>Matthew G. Panthani, Dmitriy Dolzhenkov, Travis Dietz, Ryan Crisp, Joey Luther, Dmitri V. Talapin</i>	
(318h) Shape-Selective Formation of Ag Nanocrystals: Insights From Atomic-Scale Simulations	376
<i>Kristen Fichthorn, Ya Zhou</i>	

(319a) Core-Shell Structured Composite Microparticles With Ability to Store a Chemical Payload and Release a Defined Quantity "On Demand"	377
<i>Pavel Kovacic, Frantisek Stepanek, Mandeep Singh</i>	
(319b) ZnO Nanorods Hermetically Encapsulated By a Nanothin Amorphous SiO₂ Coating: Toxicological Profile and Optical Properties	378
<i>Georgios A. Sotiriou, Kimberly Murdaugh, Joel Cohen, Christa Watson, Alison Elder, Philip Demokritou</i>	
(319c) Single-Pot Synthesis of Uniform Glucan Multilayers On Oxide Particles	379
<i>Joseph Jankolovits, Oz Gazit, Michael Nigra, Alexander Katz</i>	
(319d) Continuous Polymer Coating of Nanoparticles: A Novel Method	380
<i>Kamalesh K. Sirkar, Dengyue Chen, Dhananjay Singh, Robert Pfeffer</i>	
(319e) Coating FINE Particles With ULTRA Thin FILMS Using Atomic Layer Deposition	381
<i>Gabrie Meesters, David Valdesueiro, J. Ruud Van Ommen</i>	
(319f) Surface Engineered Quantum Dots for Light Selective Polymer Films	382
<i>Md Abdul Mumin, Jenna M. Allan, Paul A. Charpentier</i>	
(322a) Invited Talk: A Model for Yielding and Strain Hardening in Glassy Polymers	383
<i>Ronald G. Larson, Weizhong Zou, Suzanne Fielding, Robin Moorcroft, Michael Cates</i>	
(322b) Viscoelastic Behavior of Grafted-Nanoparticle/Polymer Composites	384
<i>Gregory Hattemer, Bedri Arman, Gaurav Arya</i>	
(322c) Rheology, Adhesion, and Debonding of Lightly Cross-Linked Polymer Gels	385
<i>Nicholas B. Wyatt, Anne M. Grillet</i>	
(322d) Nonequilibrium Free Energy Landscapes of Flowing Polymer Solutions	386
<i>Folarin Latinwo, Charles M. Schroeder</i>	
(322e) Polyoxometalate Antiplasticization of An Epoxy Cured Thermoset Network	387
<i>Benjamin J. Anderson</i>	
(322f) High Strain Deformation of a Strain Stiffening Gel	388
<i>Santanu Kundu, Seyed Meysam Hashemnejad, Arthur Kleiderer</i>	
(322g) Elasticity of Small-Volume Biological Soft Matter By Cavitation Rheology	389
<i>Leonid Pavlovsky, Mahesh Ganesan, John G. Younger, Michael J. Solomon</i>	
(323a) Invited Talk: Block Copolymers As Anion Exchange Membranes for Alkaline Fuel Cells	390
<i>Jacob Nykaza, Kelly Meek, Yuesheng Ye, Yossef A. Elabd</i>	
(323b) Effect of Lithium Salt Addition On Self-Assembly of Block Copolymer Electrolytes	391
<i>Nitash P Balsara, Alexander A. Teran</i>	
(323c) Understanding Li Transport At Interfaces to Enable Tough Solid Electrolytes for Lithium Metal Batteries	392
<i>Wyatt Tenhaeff, Nancy Dudney, Sergiy Kalnaus</i>	
(323d) Electronic Charge Transport Properties of Electrochemically Oxidized Block Copolymers – Lithium Battery Application	393
<i>Shravyesh N. Patel, Anna E. Javier, Nitash P. Balsara</i>	
(323e) Hybrid Polymer-Carbon Composite Electrodes for High-Energy Density Supercapacitor Electrodes	394
<i>Mark E. Roberts</i>	
(323f) Oligothiophene-Containing Polymers for Dielectric Energy Storage	395
<i>Md Sayful Islam, Yali Qiao, Chuanbing Tang, Harry J. Ploehn</i>	
(323g) Mechanical Properties of Perfluorosulfonated Ionomers: The Role of Temperature and Solute Activity	396
<i>Jay Benziger, Qiao Zhao</i>	
(324a) Invited Talk: Molecular Simulation of the Dynamics in Thin Polymer Films	397
<i>Robert A Riggleman</i>	
(324b) Fragility Plays a Key Role in Determining the Magnitude of the Tg-Confinement Effect in Polymer Films	398
<i>John M. Torkelson, Christopher M. Evans, Hui Deng</i>	
(324c) Image Formation in Thin Films of Glassy Photoresists	400
<i>Abhijit A. Patil, Manolis Doxastakis, Gila E. Stein</i>	
(324d) The Calorimetric Glass Transition and Structural Relaxation of Single Polystyrene Films	401
<i>Yung P. Koh, Siyang Gao, Sinee L. Simon</i>	
(324e) Confinement Effects On the Glass Formation Behavior of Nanolayered Polymers	402
<i>Ryan Lang, Mark Mackura, David S. Simmons</i>	
(324f) Temperature-Step Dewetting of Ultrathin Polymer Films: A Rapid Means to Tg Determination	403
<i>Jinhua Wang, Astrid Torres Arellano, Gregory B. McKenna</i>	
(324g) Effects of Nanoscale Confinement On the Physical Aging of Glassy Polymers	404
<i>Amit Shavit, Robert Riggleman</i>	
(347a) Characterizing Human Airway Transepithelial Ion Transport By Organic Electrochemical Transistor Array	405
<i>Chunlei Yao, Changyan Xie, Pingbo Huang, I-Ming Hsing</i>	
(347j) DNA-Based Microrna Sensors	406
<i>Kristina Ehrhardt, Yi Li, Michael Q. Zhang, Leonidas Bleris</i>	
(347c) Toward Electrochemical Screening of Pseudomonas Aeruginosa Antibiotic Susceptibility	407
<i>Thaddaeus A. Webster, Hunter J. Sismaet, Edgar D. Goluch</i>	
(347d) Temperature-Dependent Electrical Properties of Graphene Inkjet- Printed On Flexible Materials	408
<i>De Kong, Linh Le</i>	
(347e) Blood Detection Using Biological Modified CNTs	409
<i>Pedro Cortes, Amy Olszewski, Diana Fagan</i>	

(347f) Ultrawide-Range Electrochemical Biosensing Using Electrospun Carbon Nanofibers With High Density of States	410
<i>Xianwen Mao, Xiaoqing Yang, Gregory C. Rutledge, T. Alan Hatton</i>	
(347g) Analysis Of Exhaled Breath For Diagnosis Of Tuberculosis	411
<i>Mingxiao Li, Ralph Knipp, Michael H. Nantz, Richard M. Higashi, James E Graham, Xiao-An Fu</i>	
(347h) Towards the Detection of Endocrine-Disrupting Compounds: Using Whispering Gallery Mode Optical Biosensors to Detect Estrogen Mimics	412
<i>Yongqiang Yang, Heather K. Hunt</i>	
(347i) Gas Phase Organophosphorus Detection Via Encapsulation of Enzyme Into Peptide-Nanotubes	413
<i>Eric McDaniel, Dong Shik Kim, Mark Goltz</i>	
(354a) In Situ Synthesis of Layered Double Hydroxide (LDH)/Polyelectrolyte Intercalation Compounds	414
<i>Jingfang Yu, Johnathan E. Sims, Jarett C. Martin, Luyi Sun</i>	
(354b) Hypervelocity Impact Under Cryogenic Conditions of Honeycomb Sandwich Panels	415
<i>Justin Warren, Sean Offenberger, Brandon Shed, Thomas E. Lacy, Hossein Toghiani, Santanu Kundu, Charles U. Pittman</i>	
(354c) Multifunctional Epoxy Nanocomposites	416
<i>Zhanhu Guo, Hongbo Gu, Jiang Guo, Suying Wei</i>	
(354d) Anti-Icing Functionality in Novel Polymeric Composite Microcapsules	417
<i>Derya Aydin, Riza Kizilel, A. Levent Demirel, Seda Kizilel</i>	
(354e) Damage Precursor Detection in Polymer Matrix Composites Using Cyclobutane-Containing Crosslinked Polymer	418
<i>Jin Zou, Lenore Dai</i>	
(354f) Nacre-Like Composite Materials Produced Via Magnetically-Controlled Sol-Gel Phase Separation	419
<i>Marco Furlan, Marco Lattuada</i>	
(354g) Magnetite-Polypyrrole Metacomposites: Dielectric Properties and Magnetoresistance Behavior	420
<i>Jiang Guo, Hongbo Gu, Huige Wei, Suying Wei, Zhanhu Guo</i>	
(354h) Transport Properties of Highly Sulfonated Poly(styrene-isobutylene-styrene) Membranes With Functionalized Single-Walled Carbon Nanotubes	421
<i>Sonia L. Aviles-Barreto, David Suleiman</i>	
(372a) Preparation of Al₂O₃-SiO₂-ZrO₂ Composite Aeroels By Sol-Gel Method	422
<i>Xiaohong Chen, Zhipeng Li, Huaihe Song, Liang Zhong</i>	
(372b) Tof-SIMS: A Versatile Method for Zeolite Structure Detection	423
<i>Felicia Febriana Budihardjo, Wei Han, Viola Sim, King Lun Yeung, Lu-Tao Weng</i>	
(372c) Encapsulated Quantum Dots in Sol-Gel and Polymer Matrices As Optical Filtering and Wavelength-Shifting Materials	424
<i>Michael Z. Hu, Zane W. Bell</i>	
(372d) Luminescent RE:A₂B₂O₇ and Core@Shell RE:A₂B₂O₇@A'B'O₃ Nanoparticles	425
<i>Yuanbing Mao, Yue Tian</i>	
(372e) Continuous Synthesis of Shape-Controlled Colloidal Chalcopyrite Copper Indium Diselenide Nanocrystal Inks	426
<i>Chih-Hung Chang, Ki-Joong Kim, Peter Kreider</i>	
(372f) Synthesis of Surfactant Bilayer Coated Iron Oxide Nanoparticles for the Stabilization of Oil-in-Water Emulsions	427
<i>Pranav S. Vengsarkar, Christopher B. Roberts</i>	
(372g) New Functions of Polyolefin for Manipulated Magnetic Nanostructures	428
<i>Qingliang He, Suying Wei, Zhanhu Guo</i>	
(372h) Molecular Dynamics Simulations of Alkanethiol-Coated Gold Nanoparticles	429
<i>Dan S. Bolintineanu, J. Matthew D. Lane, Gary S. Grest</i>	
(373a) Mass Production of Fullerene-Like WS₂ Nanoparticles in a Particulately Fluidized Bed and Its Tribological Properties	430
<i>Jun Li, Li Zhou, Qingshan Zhu, Hongzhong Li</i>	
(373b) Continuous Flow Synthesis of Metal Patchy Nanoparticles With Tunable Plasmonic Properties	431
<i>Robin N. Klupp Taylor, Huixin Bao, Thomas Meincke</i>	
(373c) Conductive ABS/PC Engineering Plastics Prepared By PC/MWCNT Masterbatch Approach	432
<i>Zhuoyue Xiong, Jian Yu, Zhaoxia Guo, Li Wang, Yao Sun</i>	
(373d) Nano Liposomes for the Encapsulation of a Food Preservative	434
<i>Gabrie Meesters, Clotilde Bouaoud</i>	
(375a) Dye-Sensitized Solar Cells: Using Over 100 Natural Dyes As Sensitizers	435
<i>Ivan Attanayake</i>	
(375b) Dye-Anchored Nanocatalysts for Improved Solar Energy Conversion Efficiency in Dye-Sensitized Solar Cells	437
<i>Guangliang Liu, Elena Galoppini, Alexander Agrios</i>	
(375c) Bulk Heterojunction Polymer Solar Cells Based On Organic Semiconductor Nanomaterials	438
<i>Samson A. Jenekhe, Guoqiang Ren, Ye-Jin Hwang, Haiyan Li, Selvam Subramaniam, Hao Xin</i>	
(375d) Engineering Energy Levels At the TiO₂:P3HT Interface Using Atomic Layer Deposition	439
<i>James Dorman, Jonas Weickert, Martin Putnik, Lukas Schmidt-Mende</i>	
(375e) Layered Double Hydroxides As An Effective Additive in Polymer Gelled Electrolyte Based Dye-Sensitized Solar Cells	440
<i>Hsu-Wen Ho, Tzu-Chien Wei, Shih-Yuan Lu</i>	
(375f) Boron-Modified TiO₂ Microsphere With Enhanced Photovoltaic Performance	442
<i>Jun Rao, Xingfu Zhou</i>	

(375g) Effect of Ionic Liquid Electrolytes in DSSCs With Titanium Dioxide (TiO₂) Inverse Opal Structures	443
<i>Naomi Ramesar, Ilona Kretzschmar</i>	
(375h) Porous Nanowire Assemblies On Graphene for Dye-Sensitized Solar Cells	444
<i>Paul A Charpentier, Qasem Alsharari, Nasrin Farhangi, Golam Moula, Serge Ayissi</i>	
(381a) Invited Talk: Conjugated Block Copolymer Photovoltaics With Near 3% Efficiency Through Microphase Separation	446
<i>Enrique D. Gomez</i>	
(381b) Manipulation of P3AT Crystallization Behavior	447
<i>Bryan S. Beckingham, Victor Ho, Rachel A. Segalman</i>	
(381c) Device Performance of Poly(3-hexylthiophene)/Fullerene Solar Cells Is Limited By Electron Transport	448
<i>Bryce Edmondson, Kiarash Vakhshouri, Enrique D. Gomez</i>	
(381d) Computationally Linking Molecular Features of Conjugated Polymers and Fullerene Derivatives to Bulk Heterojunction Morphology	449
<i>Eric Jankowski, Hilary S. Marsh, Arthi Jayaraman</i>	
(381e) Properties, and Lifetime of Random and Multiblock Copolymer Anion Conducting Membranes for Direct Methanol Fuel Cells	450
<i>John Ahlfield, Doh-Yeon Park, Paul A. Kohl</i>	
(381f) Incorporating Phosphoric Acid Into Layer-By-Layer Assembled Proton Exchange Membranes for Higher Conductivity At Lower Relative Humidities	452
<i>David S. Liu, Paula T. Hammond</i>	
(381g) Combinatorial Design of Selective Gel Materials for Extractive Fermentation	453
<i>Ronald C. Hedden, Rutvik Godbole, Lan Ma</i>	
(382a) Comb Polymers: Film Surface Fluctuation Dynamics and Surface Segregation in the Limit of Dense Branching	457
<i>Boxi Liu, Suresh Narayanan, Renfeng Hu, David T. Wu, Mark D. Foster</i>	
(382b) Examining Hydration and Mineralization in Polyelectrolyte Brushes	458
<i>S. Michael Kilbey, Chaitra Deodhar, John F. Ankner</i>	
(382c) Patterning Nano-Square Arrays Using Shear-Aligned Block Copolymer Thin Films	459
<i>So Youn Kim, Raleigh L. Davis, Brian T. Michal, Jessica Gwyther, Ian Manners, Paul M. Chaikin, Richard A. Register</i>	
(382d) Silicon-Containing Block Copolymers for Sub-20 Nm Pitch Patterning	462
<i>Julia D. Cushen, Lei Wan, Ricardo Ruiz, C. Grant Willson, Christopher J. Ellison</i>	
(382e) High χ Block Copolymers Based On Hydrogen Bonding Polymers	463
<i>Richard A. Lawson, Jing Cheng, Nathan Jarnagin, Laren M. Tolbert, Clifford L. Henderson</i>	
(382f) Controlled Long Range Orientation of Block Copolymer Nanostructures Through Soft Confinement Solvent Vapor Annealing	464
<i>Bryan D. Vogt, Zhe Qiang, Kevin A. Cavicchi</i>	
(382g) Phase Evolution of PS/PMMA Blend Films Between Two Parallel Rigid Plates With Nano-Scale Gap	465
<i>Zhen Wang, Zheng Zhang, Liang Wang, Yifu Ding</i>	
(386a) Stimulus-Responsive DNA Nanostructures for Delivery Applications	466
<i>Jung-Won Keum, Harry Bermudez</i>	
(386b) Low Reynolds Number Swimming of Stimuli Responsive Hydrogels	467
<i>Ales Zadrazil, Frantisek Stepanek</i>	
(386c) First All-in-One Carboxybetaine Elastomer: the Impact of Structure On Its Elasticity, Switchability, Stability and Functionality	468
<i>Gang Cheng</i>	
(386d) Polyelectrolyte Thin Films As a Platform for pH-Responsive Lipid Membranes	469
<i>Saurabh Singh, Ann Junghans, Jaroslaw Majewski</i>	
(386e) Engineering Cell Adhesion to Thermoresponsive Substrates: Effect of Spreading Coefficient	470
<i>Lauren S. Anderson, Filippo Gambinossi, James K. Ferri</i>	
(386f) Induction of T Cell Responses By pH-Responsive Blend Polymer Particle Protect Against Herpes Simplex Virus 2 Infection	472
<i>Xi Zhan, Kenny K. Tran, Hong Shen</i>	
(386g) pH-Triggered Polylactic-g-Doxorubicin Nanoparticles With Precisely Controlled High Drug Loading for Targeted Drug Delivery	473
<i>Yun Yu, Chih-Kuang Chen, Wing-Cheung Law, Emily Weinheimer, Paras N. Prasad, Chong Cheng</i>	
(409a) Characterization and Use of Pollen As a Biorenewable Filler for Polymer Composites	474
<i>Oluwatimilehin Fadiran, J. Carson Meredith</i>	
(409b) Anaerobic Degradation of Phbv/Wood Flour Biocomposites: Impact of Fiber/Matrix Compatibilization On End-of-Life	475
<i>Cecily Ryan, Craig Criddle, Sarah Billington</i>	
(409c) Effect of Fiber-Matrix Compatibilization Techniques On the Creep Behavior of Phbv/Wood Flour Biobased Composites	476
<i>Sabbie Miller, Sarah Billington</i>	
(409d) Ferromagnetic Composites of Activated Carbons and Iron Oxide Prepared From Waste Biomass	477
<i>Wenming Hao, Eva Björkman, Yifeng Yun, Malte Lillieströme, Niklas Hedin</i>	
(409e) Fabrication and Thermal Degradation Studies of Exfoliated Graphene Reinforced Poly (lactic acid) Nanocomposite	478
<i>Valapa Ravi Babu, Vimal Katiyar, Gopal Pugazhenth</i>	

(409f) Fabrication of Polyurethane-Based Foams With Incorporated “Waste” Glycerol From Biodiesel Synthesis and “Waste” Agricultural Residues (chopped rice hull fibers)	480
<i>Lisa Aumgyong, Yu-Fu Ko, Sergio Mendez, Kyle Chan</i>	
(409g) The Mechanical Performance of Bamboo Fiber Mat Reinforced Polypropylene Composites	481
<i>Chunyin Shen, Yuanjun Tang, Cicheng Feng, Bin Lee, Min Pan, Gance Dai</i>	
(409h) Biodegradable Poly(3-hydroxybutyrate) Nanocomposites: The Role of Organo-Modified Nanoclays On the Thermomechanical Characteristics Via a Design of Experiments Study	482
<i>Ioannis Zuburtikudis, Elpiniki Panayotidou, Apostolos Baklavaridis, Dimitris Achilias</i>	
(442a) Polymer Nano-Assemblies for Bioresponsive Materials: From Macro- to Nano-Scale	483
<i>Paula T. Hammond</i>	
(442b) Microengineered Hydrogels for Stem Cell Bioengineering and Tissue Regeneration	484
<i>Ali Khademhosseini</i>	
(442c) Scaleable Gas-Phase Synthesis of Nanoparticles, Films and Devices	485
<i>Sotiris E. Pratsinis</i>	
(442e) Pure and Mixed-Gas Permeation Study Of Thermally Rearranged Polymers	486
<i>Kristofer L. Gleason, Zachary P. Smith, Qiang Liu, Donald R. Paul, Benny D. Freeman</i>	
(461a) US Department Of Energy Critical Materials Strategy and R&D	487
<i>Michael McKittrick</i>	
(461b) Research Gaps and Needs: Critical Materials Separations R&D Workshop	488
<i>Darlene Schuster, Catherine T. Hunt, Kristine Chin, Mamadou Diallo</i>	
(461c) The Availability Of Indium and Tellurium For Thin-Film Photovoltaic Materials	489
<i>Roderick Eggert, Martin Lokanc, Michael Redlinger</i>	
(461d) Rare Earth Concentration, Extraction, Separation and Reduction	490
<i>Coby Anderson</i>	
(461e) Critical Materials Recycling & Substitutes For Critical Materials	491
<i>Edwin Jones</i>	
(461f) Critical Materials Recycling For Resource Sustainability	492
<i>Brajendra Mishra</i>	
(475a) Interfacial Engineering In Energy Control, Conservation, Conversion, Generation, Storage, and Transfer Applications Using Nanomaterials	493
<i>Randy L. Vander Wal</i>	
(475b) Graphene Based Composites for Electrochemical Applications	496
<i>Kurt B. Smith, M. Silvina Tomassone</i>	
(475c) Nitrided Silicon-Based Composite Anodes for Lithium Rechargeable Batteries	497
<i>Rhet Joseph De Guzman, Jinho Yang, Mark Cheng, Steven O. Salley, K. Y. Simon Ng</i>	
(475d) Composite Battery Electrodes Derived From Bijels	498
<i>Jessica A. Witt, Daniel R. Mumm, Ali Mohraz</i>	
(475e) A General Polymer-Assisted Solution Approach to Grow Transition Metal Oxide Nanostructures Directly On Nickel Foam As Anodes for Li-Ion Batteries	499
<i>Yun Xu, Ling Fei, Hongmei Luo</i>	
(475f) Energetics, Structure, and Dynamics of Lignin-Based Carbon Composites	500
<i>Nicholas McNutt, Orlando Rios, David Keffer</i>	
(475g) Dendrite Suppressing Solid Ion Conductor From Aramid Nanofibers	501
<i>Siu On Tung, Peter Ho, Nicholas A. Kotov</i>	
(475h) Hybrid Ternary Carbon Nanotube–Manganese Oxide–Paper Nanocomposites for Flexible Supercapacitors	502
<i>Wenchao Jiang, Li Wei, Yuan Chen</i>	
(489a) Synthesis and Characterization of Novel, In Situ Cross-Linkable, Biodegradable, Thermoresponsive Hydrogels for Bone Tissue Engineering	503
<i>Brendan M. Watson, F. Kurtis Kasper, Paul S. Engel, Antonios G. Mikos</i>	
(489b) Spontaneously Self-Healing Hydrogel With Time-Independent Behavior Via Zwitterionic Fusion	504
<i>Tao Bai, Shaoyi Jiang</i>	
(489c) Modular and Injectable Poly(Oligoethylene glycol methacrylate)-Based Hydrogels With Tunable Protein and Cell Interactions	505
<i>Emilia Bakaic, Niels M. B. Smeets, Todd R. Hoare, Mathew Patenaude</i>	
(489d) Enzymatic and Cell-Mediated Degradation of Synthetic Hydrogel Scaffolds Measured Using Passive Microrheology	507
<i>Kelly M. Schultz, Kristi S. Anseth</i>	
(489e) Engineering Bioactive Hydrogels for Treating Full Thickness Dermal Wounds	508
<i>Tom Shen, Greco Song, Guoming Sun, Donny Hanjaya-Putra, Sharon Gerecht</i>	
(489f) A Large-Scale, Real-Time Array to Assess Dynamic Changes in Intracellular Signaling in Response to Biomaterial-Mediated Mechanical and Adhesive Stimuli	509
<i>Beatriz Penalver Bernabe, Stephanie Seidlits, Linda J. Broadbelt, Lonnie D. Shea</i>	
(489g) Substrate Stiffness Affects Cancer Cell Responsiveness to Cytotoxic Drugs	511
<i>Silviya Petrova Zustiak</i>	
(489h) Peptide Amphiphile Hydrogels As 3D Scaffolds for Tissue Engineering	512
<i>Carolyn Scott, Efrosini Kokkoti</i>	
(495a) Invited Talk: Using Molecular Simulations to Design Cationic Polymers for DNA Binding and Delivery	513
<i>Arthi Jayaraman, Robert M. Elder, Daniel Johnson</i>	

(495b) Experimental Characterization and MD Simulation of the Steric Shielding Effect of Polyethylene Glycol (PEG) On the Conjugated Protein	514
<i>Jingkai Yu</i>	
(495c) Molecular Simulations of Compressibility of Co-Polymer Brushes	515
<i>Ajay Singh Panwar, Buddhapriya Chakrabarti, Ankur Mishra</i>	
(495d) Dynamics of Semi-Flexible Polymers in a Poor Solvent	516
<i>Miqiu Kong, Indranil Saha Dalal, Ronald G. Larson</i>	
(495e) Advanced Kinetic Monte Carlo Optimization of the Synthesis of Well-Defined (co)Polymers Via Atom Transfer Radical and Nitroxide Mediated Polymerization	517
<i>Paul H. M. Van Steenberge, Dagmar R. D'Hooge, Carolina Toloza Porras, Stijn K. Fierens, Marie-Françoise Reyniers, Guy B. Marin</i>	
(495f) Multiscale Modeling of Polyisoprene On Silica and Graphite	520
<i>Alexander Brayton, Yogendra N. Pandey, George J. Papakonstantopoulos, Craig Burkhart, Manolis Doxastakis</i>	
(495g) Coarse Grained Molecular Dynamics Model of Block Copolymer Directed Self-Assembly	521
<i>Richard A. Lawson, Andrew Peters, Peter J. Ludovice, Clifford L. Henderson</i>	
(502a) Surface-Mediated Mechanisms for Defect Engineering in Metal Oxides	522
<i>Prashun Gorai, Elif Ertekin, Edmund G. Seebauer</i>	
(502b) Design Rules for Finding New Oxide Phosphors for Solid-State Lighting	523
<i>Nathan George, Bradley F. Chmelka, Ram Seshadri</i>	
(502c) Improving Integrated Photonics With Sol Gel Chemistry	524
<i>Ashley Maker, Nishita Deka, Andrea M. Armani</i>	
(502d) Exploring the Optical Properties of Silicalite (MFI) Thin Films Via Quantum Tunneling Photoacoustic Spectroscopy (QTPAS)	525
<i>Swarnasri Mandal, Benjamin S. Goldschmidt, John A. Viator, Heather K. Hunt</i>	
(502e) Vanadium Doping Induced Structural and Optical Modifications in TiO₂ Thin Films	526
<i>Arshad S. Bhatti, Awais Ali, I Ruzybayev, Emre Yassitepe, S. I. Shah</i>	
(502f) Understanding Interface Formation Interactions Between BTO/MgO/Si By Epitaxial Growth of BaTiO₃ Thin Film On Si (100)	527
<i>Negar Hamedani Golshan, Zhuhua Cai, Katherine S. Ziemer</i>	
(502g) P-n Junction Based Gas Sensor for High Temperature Hydrocarbon Detection With Improved Selectivity	528
<i>Yixin Liu, Yu Lei</i>	
(517a) Invited Talk: Thermoplastic Elastomers and Thermosets Derived From Vegetable Oils	529
<i>Megan Robertson, Shu Wang, Guozhen Yang, Brian Rohde</i>	
(517b) Non-Classical Sphere Forming in A-B-A-C Tetrablock Copolymers	530
<i>Jingwen Zhang, Scott Sides, Frank S. Bates</i>	
(517c) Evaluating the Structure and Properties of Polyimide-Poly (Ethylene Glycol) Materials for Fuel Cell Membrane Applications	531
<i>Elyse Coletta, Michael Toney, Curtis W. Frank</i>	
(517d) Molecular Influence On Segmental Dynamics of Select Model Poly(urethane urea) Elastomers	533
<i>Alex J. Hsieh, Tanya L. Chantawansri, Weiguo Hu</i>	
(517e) Dynamic Stiffening of Liquid Crystal Elastomers	534
<i>Aditya Agrawal, Prabir Patra, Walter G. Chapman, Pulickel M. Ajayan, Rafael Verduzco</i>	
(517f) Modification of Linear Prepolymers to Control Polymerization-Induced Phase Separation in a Free-Radical Photo-Polymerization	535
<i>Caroline Szczepanski, Jeffrey W. Stansbury</i>	
(517g) Control of Thermal Degradation of Poly(lactic acid) Using Poly(α-glycidylxypropylsiloxane) Microspheres As Chain Extenders	537
<i>Ting Han, Zhong Xin, Yaoqi Shi</i>	
(556a) Invited Talk: Molecular Simulation of "Real World" Polymer Systems	540
<i>Michael L. Greenfield</i>	
(556b) Solvent Diffusion and Drying Properties of Amorphous Polymers Via Molecular Simulation	541
<i>Li Xi, Bernhardt L. Trout</i>	
(556c) Simulations of Bond Rupture in Normal Alkanes Under Tensile Molecular Deformation Using Reactive Potentials	542
<i>Sasan Nouranian, Steven R. Gwaltney, Mark A. Tschopp, Michael I. Baskes, M. F. Horstemeyer</i>	
(556d) The Ab Initio Design of Efficient Photoinitiators	544
<i>Charles B. Musgrave, Chern Hooi Lim, Tao Gong, Aaron Holder, Christopher N. Bowman</i>	
(556e) All-Atom Molecular Dynamics Simulations of Poly(N-isopropylacrylamide) Grafted Architectures	545
<i>Ganesh Kamath, Sanket Deshmukh, Derrick C. Mancini, Subramanian Sankaranarayanan</i>	
(556f) Atomistic Molecular Dynamics Simulations of Precise Ionomers	546
<i>Dan S. Bolinteanu, Mark J. Stevens, Amalie L. Frischknecht</i>	
(556g) MD Simulation Study of Polyelectrolyte Chain Collapse in Aqueous Mixed Solvent Due to Hydrophobicity: PAA-Water-Ethanol	547
<i>Praveenkumar Sappidi, Upendra Natarajan</i>	
(558a) Thermoelectric Properties of Ultra-Long PbSe Hollow Nanofibers	549
<i>Miluo Zhang, Hosik Park, Hyunsung Jung, Jiwon Kim, Seil Kim, Jae-Hong Lim, Yong-Ho Choa, Nosang Myung</i>	
(558b) Thermal Transport in Nanocrystal Arrays and Self Assembled Monolayers	550
<i>Wee-Liat Ong, Sara Rupich, Shubhaditya Majumdar, Dmitri V. Talapin, Alan J. H. McGaughey, Jonathan A. Malen</i>	

(558c) Thermoelectric Nanocomposites of Layered Chalcogenide Bi₂(Te/Se)₃ Nanoplatelets and Their Interfacial Effects	551
<i>Ajay Soni, Qihua Xiong</i>	
(558d) Advanced Nanocomposite Fibers for Thermoelectric Energy Harvesting and Motion Sensing	553
<i>Yue Wu, Scott Finefrock</i>	
(558e) Development of a Nanocatalytic Microcombustor Power Device	554
<i>Dylan McNally, Smitesh Bakrania</i>	
(558f) Templated Fabrication and Characterization of Thermoelectric Nanowire Arrays - Toward Power-Dense and Efficient Devices	555
<i>Leigh A. Crosser, Gregory E. Chester, Paul E. Yelvington, Justin J. Hill</i>	
(558g) Discovering Materials With Ultra-Low Work Functions for Thermionics Energy Conversion	556
<i>Sharon H. Chou, Johannes Voss, Aleksandra Vojvodic, Roger T. Howe, Frank Abild-Pedersen</i>	
(561a) Controlling Charge Transport in Patterned Organic Thin Film Transistors Through Solution Shearing and Lattice Strain	557
<i>Gaurav Giri, Steve J. H. Park, Eric A. Miller, Stefan Mannsfeld, Zhenan Bao</i>	
(561b) Polymorph and Morphology Control of Organic Semiconductor Thin Films	558
<i>Ying Diao, Stefan Mannsfeld, Zhenan Bao</i>	
(561c) Optimizing Solid State Conductivity in Radical Polymers	559
<i>Bryan W. Boudouris, Lizbeth Rostro, Aditya G. Baradwaj</i>	
(561d) Magneto-resistant Polyaniline/Multi-Walled Carbon Nanotubes Nanocomposites With Negative Permittivity	560
<i>Hongbo Gu, Jiang Guo, Siying Wei, Zhanhu Guo</i>	
(561e) Giant Magneto-resistance in Conducting Polymers and Their Nanocomposites	561
<i>Zhanhu Guo, Siying Wei, Hongbo Gu</i>	
(561f) Stable Organic Monolayers On Oxide-Free Silicon/Germanium in Supercritical Medium: A New Route to Molecular Electronics	562
<i>Sreenivasa Reddy Punireddi, Sundaramurthy Jayaraman, Sai Hooi Yeong, Cedric Troadec, Mp Srinivasan</i>	
(561g) Non-Isothermal Crystallization Behaviors of N,N,N',N'-Tetraphenylbenzidine(TPB)	563
<i>Xiaosi Ma, Shirong Wang, Xianggao Li, Yin Xiao, Yong Wang</i>	
(571a) Silver-Encapsulated Virus-Imprinted Submicrometer Particles As Potential Antiviral Therapeutics	564
<i>Yen Wah Tong, Niranjani Sankarakumar</i>	
(571b) Rational Design of Antimicrobial Polycarbonates	565
<i>Amanda C. Engler, Jeremy Tan, Dan Coady, Yiyang Yang, James L. Hedrick</i>	
(571c) Polyelectrolyte Multilayer Films Containing Stiffness Gradients Or Matrix-Bound Growth Factor Gradients Influence Cell Behavior	566
<i>Jorge Almodovar, Fabien Dalonneau, Thomas Boudou, Seila Selimovic, Ali Khademhosseini, Hugues Lortat-Jacob, Catherine Picart</i>	
(571d) In Vitro Breast Cancer Model to Study Stroma Mediated Signaling in Breast Cancer	567
<i>Amita Daverey, Allison Drain, Karleen Crone, Srivatsan Kidambi</i>	
(571e) Stimulation of Glioma Cell Malignancy Under Defined Microenvironmental Conditions	568
<i>Sara Pedron, Eftalida Becka, Brendan A. C. Harley</i>	
(571f) Shape Memory Activation of Wrinkled Cell Culture Substrates	569
<i>Pine Yang, Richard M. Baker, James H. Henderson, Patrick T. Mather</i>	
(571g) Embedding Crystallographically Imprinted Surface Topographies in Micro- and Nano-Scale Fluidic Channels	570
<i>Duanduan Han, Victor M. Ugaz</i>	
(572a) Blends of High Density Polyethylene With Chlorinated Polyethylene: Morphology, Thermal, Rheological and Mechanical Properties	571
<i>Vikas Mittal, Ali Chaudhry</i>	
(572b) Characterization Methodologies for Obtaining a Reliable Indicator for the Environmental Stress Cracking Resistance of Polyethylene	572
<i>Pouyan Sardashti, Marianna Polak, Costas Tzoganakis, Alexander Penlidis</i>	
(572c) Mechanical Strengthening of Poly(ethylene terephthalate) By Nitration	575
<i>Brent E. Dial, Victor Piñon, Shawn M. Dirk, Benjamin J. Anderson</i>	
(572d) Toughening of Polyamide-6 With Poly(styrene-alt-maleic anhydride)-Polystyrene-Block-Poly(n-butyl acrylate)-Block-Polystyrene Copolymer (SMA-SBAS) Synthesized Via RAFT Mini-Emulsion Polymerization	576
<i>Ren He, Qinghua Zhang, Xiaoli Zhan</i>	
(572e) Synthesis and Characterization of Thermosetting Furan-Based Epoxy Materials With Improved Thermo-Mechanical Properties	578
<i>Fengshuo Hu, John J. La Scala, Joshua Sadler, Giuseppe Palmese</i>	
(572f) Melting, Crystallization, and Morphological Modifications of Biodegradable Polyesters in Dense Carbon Dioxide	579
<i>Shinya Takahashi, Erdogan Kiran</i>	
(572g) Evaluating Nitrogen As a Co-Blowing Agent for CO₂-Blown Polymeric Nanofoams	580
<i>Jonathan D. Moore, Kshitish Patankar, Jacob Crosthwaite, Robert Campbell, Diego E. Cristancho, Stephane Costeux</i>	
(579a) The Mechanism of Singlet Fission in Pentacene Organic Photovoltaics	582
<i>Charles B. Musgrave, Aaron Holder, Paul M. Zimmerman</i>	
(579b) Analysis of Charge Carrier Transport in Organic Photovoltaic Thin Films and Nanoparticle Assemblies	583
<i>Xu Han, Dimitrios Maroudas</i>	
(579c) Structural Characterization of Thin-Film Polymer/Fullerene Composites	584
<i>Jeffrey J. Richards, Danilo Pozzo</i>	

(579d) New Acceptor Materials for Organic Photovoltaics: Design, Self-Assembly, Morphology and Photovoltaic Properties	585
<i>Eilaf Ahmed, Samson A. Jenekhe</i>	
(579e) Bulk Heterojunction Polymer Solar Cells: Nanomorphology and Photovoltaic Properties	586
<i>Samson A. Jenekhe, Guoqiang Ren, Hao Xin, Ye-Jin Hwang, Selvam Subramaniyan</i>	
(579f) Poly(3-hexylthiophene) Brush-Modified Interfaces for Control of Active Layer Morphology and Properties	587
<i>S. Michael Kilbey, Zachary Seibers, W. Michael Kochemba, Deanna Pickel</i>	
(579g) In-Situ Polymerization of 3-Hexylthiophene Within Mesoporous Titania Films	588
<i>Suraj Nagpure, Stephen E. Rankin</i>	
(579h) Efficient Metal Sulfide Window Layers for Organic Photovoltaics	589
<i>Christopher J. Traverse, Richard R. Lunt</i>	
(594a) Neural Biomimetic Materials for Examining Cell Migration in Disease Progression	590
<i>Mark Calhoun, Aaron Short, Catherine Czeisler, Tyler Nelson, Atom Sarkar, John J. Lannutti, Jose Otero, Jessica O. Winter</i>	
(594b) 3D Polyurethane Scaffolds (3D-PURS) With Defined Architecture and Rigidity for Analysis of Tumor-Induced Bone Disease	591
<i>Jonathan Page, Alyssa Merkel, Ushashi Dadwal, Scott A. Guelcher, Julie A. Sterling</i>	
(594c) Biomimetic Nucleation and Growth of Calcium Oxalate in Hydrogels	594
<i>Mitali China, Gopichand Mallam, Neethi Murali, Kali A. Suryadevara, Marina Tsianou</i>	
(594d) Synthesis of Biomimetic Oxygen-Carrying Compartmentalized Microparticles Using Flow Lithography	595
<i>Harry Z. An, Eric R. Safai, H. Burak Eral, Patrick S. Doyle</i>	
(594e) Engineering Cell Interaction Sites in Collagen-Mimetic Biopolymers	596
<i>Sam Wei Polly Chan, Abeer Jabaiah, Richard A. Que, Nancy A. Da Silva, Szu-Wen Wang</i>	
(594f) Stem Cell Differentiation On Cell-Based Biomimetic Micropatterns	597
<i>Anita Shukla, Jennifer L. West</i>	
(594g) A Modified Jkr Model for the Adhesion of a Patterned Surface Against a Smooth Glass Surface	598
<i>Saurabh Das, Sathya Chary, John Tamelier, Kimberly Turner, Jacob N. Israelachvili</i>	
(615a) Transparent Polyaniline Nanocomposite Films for Electrochromism and Electrochemical Energy Storage Applications	599
<i>Huige Wei, Jiahua Zhu, Shijie Wu, Siying Wei, Zhanhu Guo</i>	
(615b) Electrodeposition of Cu-Sn-Alloys From Citrate Electrolytes	600
<i>Salem Zahmi, Hana Kim, Elizabeth Podlaha</i>	
(615c) Solution Speciation Effects On Electrodeposited Cuprous Oxide Films for Solution-Processed Photovoltaics	601
<i>Matthew J. Panzer</i>	
(615d) Optical Properties of Titanium Dioxide Nanotube Arrays	602
<i>Jeffrey Sokoloff, Mohamed Abdelmoula, Wen-Tao Lu, Latika Menon, Christiaan Richter</i>	
(615e) Novel Synthesis Route for Symmetric and Asymmetric Diarylethene Molecules By Modifying Pendant Groups	603
<i>Shiman Zhang</i>	
(630a) Silicon Nanostructures As Efficient Thermoelectric Materials	604
<i>Peidong Yang, Jongwoo Lim</i>	
(630b) Toward Physical Models of Thermoelectric Transport Rules At the Organic-Inorganic Interface	605
<i>Jeffrey Urban</i>	
(630c) Thermal and Thermoelectric Transport in Semiconductor Nanowires	606
<i>Renkun Chen</i>	
(630d) Nanowire Heterostructure-Based Thermoelectric	607
<i>Yue Wu, Haoran Yang, Haiyu Fang</i>	
(630e) Thermoelectric Properties of Bulk Pellets of Unfunctionalized and Functionalized Zn3P2 Nanowires	608
<i>Lance Brockway, Venkata Vasiraju, Sreeram Vaddiraju</i>	
(630f) Combustion Synthesis of Thermoelectric Oxide Powders	609
<i>Sidney Lin, Patrick Duruewuru, Joshua Bonura</i>	
(631a) Invited Talk: Controlling Electronic Properties Through Block Copolymer Self-Assembly and Crystallization in Poly(3-alkylthiophenes)	610
<i>Rachel A. Segalman</i>	
(631b) A Look Into the Deformation Events in Block Copolymer Modified Epoxies: A SAXS Perspective	611
<i>Carmelo Declet-Perez, Lorraine F. Francis, Frank S. Bates</i>	
(631c) Ordering of Sphere-Forming Block Polymers	612
<i>Sangwoo Lee, Jingwen Zhang, Frank S. Bates</i>	
(631d) A Peculiar Layering Structure and Transport Phenomenon of Nano-Blended Perfluoropolyether Thin Films	613
<i>Pil Seung Chung, Myung S. Jhon</i>	
(631e) Controlling Micro- and Meso- Scaled Pores In Carbon Nanofibers From Immiscible Polymers For Energy Applications	614
<i>Brian Williams, Kenville Henderson, Jun Yin, Yong L. Joo</i>	
(631f) Preparation Of Graphene Based Nanocomposites In Electrospun Polyaniline/Polyethylene Oxide Blends	615
<i>Ali Moayeri, Abdellah Ajjji</i>	
(631g) Effect of Sulfonation On the Transport Properties of Poly(styrene-isobutylene-styrene) and Poly(styrene-isoprene-styrene) Membranes	616
<i>Sonia L. Aviles-Barreto, David Suleiman</i>	
(632a) Targeted Delivery of Therapeutic Antioxidant Enzymes and Enzyme Mimetics	617
<i>Alexey A Vertegel</i>	

(632b) Designing Hybrid Bio-Nanostructured Soft Materials Via Self-Assembly	618
<i>Meenakshi Dutt, Fikret Aydin, Paul Ludford, Denise Preddie</i>	
(632c) Effects of Pore Size and Protein Properties On Adsorption Kinetics of Proteins On Mesoporous Titanium Dioxide	619
<i>Yihui Dong, Rong An, Xiaohua Lu, Chang Liu</i>	
(632d) Nanotopography Regulated Cell Sensing Nanomaterials	620
<i>Xiaoyan Yu, Allison Bruce, Liying Wang, Pradeep P. Fulay, Yon Rojanasakul, Yong Yang</i>	
(632e) Protein-Loaded Slanted Columnar Thin Films As Novel Biomaterials for Enhancing Cell-Surface Interactions	621
<i>Tadas Kasputis, Keith Brian Rodenhausen, Alex Pieper, Daniel Schmidt, Derek Sekora, Eva Schubert, Mathias Schubert, Angela K. Pannier</i>	
(632f) Controlled Micro- and Nano-Structure of Stem Cell Scaffolds for Photoreceptor Regeneration	622
<i>Kristan S. Worthington, Alexandra Bartlett, Aliasger K. Salem, Budd A. Tucker, C. Allan Guymon</i>	
(632g) Single Nanofiber Structural Stiffness Directly Affects Cellular Migration and Cytoskeletal Response of C2C12 Cells	623
<i>Sean Meehan, Amrinder S. Nain</i>	
(632h) Regulation of Cytotoxicity By Thermoresponsive Polymer Grafted Nanoparticles	626
<i>Chris Anderson, Yehou Gnopo</i>	
(634a) Atomic Layer Deposition Enabled Synthesis of Nanostructured Composite Oxide Thin Films for Multiferroic Applications	627
<i>Calvin Pham, Diana Chien, Taeseung Kim, Jane P. Chang</i>	
(634b) Controlled Aqueous Synthesis of ZnO Nanofilms Using Physical Means	628
<i>Chih-Hung Chang, Chang-Ho Choi</i>	
(634c) Polymer-Assisted Deposition: A Versatile Solution Route to Epitaxial Metal Oxide and Metal Nitride Thin Films	629
<i>Hongmei Luo</i>	
(634d) Ultra-High Frequency Electric Field Effects On Oxygen Vacancy Concentration in Oxide Thin Films	630
<i>Subramanian Sankaranarayanan</i>	
(634e) Toward 'One-Pot' Hard-Templating of Three-Dimensionally Ordered, Hierarchically Porous Carbon Films	631
<i>Zheng Tian, Mark A. Snyder</i>	
(634f) Synthesis of Highly Propylene-Selective ZIF-8 Membranes By Rapid Microwave-Assisted Seeding and Subsequent Secondary Growth	632
<i>Hyuk Taek Kwon, Hae-Kwon Jeong</i>	
(634g) Nanofiltration Membranes From Oriented Mesoporous Silica Thin Films	634
<i>Kaitlyn Wooten, Venkat R. Koganti, Stephen E. Rankin, Barbara L. Knutson</i>	
(634h) Finite Size Effects of Thin Liquid Films	635
<i>Stephan Werth, Hans Hasse, Martin Horsch</i>	
(656a) Encapsulation of Thermotropic Liquid Crystals in Hollow Polymer Microcapsules: Design of Colloidal Liquid Crystal-Based Chemical Sensors That Function in Cellular Environments	636
<i>Yashira M. Zayas-Gonzalez, Uttam Manna, Rebecca J. Carlton, Nicholas L. Abbott, David M. Lynn</i>	
(656b) Decoupling Contributions to Cell Adhesion in the Context of Laterally Mobile Ligands	638
<i>Andreas Kourouklis, Ronald V. Lerum, Harry Bermudez</i>	
(656c) Large Amyloid Fibers As Robust Biomaterials	639
<i>Devin Ridgley, Justin R. Barone</i>	
(656d) OB-Cadherin Regulates Mesenchymal Stem Cell Differentiation Into Smooth Muscle Cells and Development of Contractile Function in Vivo	640
<i>Stella Alimpert, Hui You, Teresa Anuh George, Sandeep Agarwal, Stelios Andreadis</i>	
(656e) Fabrication of Chitosan-Poly(ethylene glycol) Hybrid Microparticles Via Replica Molding and Its Application Toward Facile Biomolecular Conjugation Via Copper-Free Click Chemistry	641
<i>Sukwon Jung, Hyunmin Yi</i>	
(658a) Template-Directed Synthesis of Structurally-Defined Branched Biopolymers	643
<i>Danielle J. Mai, Amanda B. Marciel, Charles M. Schroeder</i>	
(658b) Adhesive Elastin-Based Proteins As Soft Tissue Glues	644
<i>M. Jane Brennan, Renay S.-C. Su, Jessica K. Roman, Jonathan J. Wilker, Julie C. Liu</i>	
(658c) Bio-Inspired Materials With Tunable Mechanical Properties	645
<i>Pablo F. Damasceno, Terry Shyu, Paul Dodd, Matthew Shlian, Max Shtein, Nicholas Kotov, Sharon C. Glotzer</i>	
(658d) Virus-Like Proteoliposomes and Proteinaceous Supported Bilayers for Drug Delivery and Screening Applications	646
<i>Deirdre A. Costello, Chih-Yun Hsia, Jean Millet, Teresa Porri, Susan Daniel</i>	
(658e) Development of a Supermolecular Complex for Selective Sensing and Targeting By Surface Engineering of Poly(amido amine) Dendrimers With a Thin Layer of Zwitterionic Carboxybetaine and c(RGDyK) Motifs	647
<i>Longgang Wang, Shengfu Chen</i>	
(658f) Biologically Inspired Stealth Peptide-Coated Gold Nanoparticles	648
<i>Ann K. Nowinski, Andrew D. White, Shaoyi Jiang</i>	
(658g) Peptoid-Based Antibody Mimics for ELISA Microarray	649
<i>Dhaval S. Shah, Shannon L. Servoss</i>	
(684a) Time Resolved Ion Dynamics in Carbon Supercapacitor Electrodes Using In Situ Infrared Spectroscopy	650
<i>Francis Richey, Boris Dyatkin, Yury Gogotsi, Yossef A. Elabd</i>	

(684b) Tailoring the Properties of Polymer- and Silica-Supported Ionogel Electrolytes for Energy Storage Applications	651
<i>Matthew J. Panzer</i>	
(684c) Pseudocapacitance Dominant Aqueous Asymmetric Supercapacitor Based On Manganese Oxide Nanoflowers	652
<i>Yuanbing Mao, Qiang Li</i>	
(684i) Plating/Stripping Performance of Different Substrates in Magnesium Borohydride Solution	653
<i>James D. Saraidaridis, Gulin Vardar, Alice E. S. Sleightholme, Charles W. Monroe, Donald J. Siegel</i>	
(684e) Vacant-Based All Solid-State Flexible Micro-Supercapacitors	655
<i>Ben Hsia, Julian Marschewski, Shuang Wang, Jung Bin In, Carlo Carraro, Dimos Poulikakos, Costas P. Grigoropoulos, Roya Maboudian</i>	
(684f) Activated Carbon and Its Modified Materials From Ddgs' Bio-Char for Supercapacitors	656
<i>Hong Jin, Zhengrong Gu, Xiaomin Wang</i>	
(684h) Size and Morphology Control of Iron Phosphate- From Nucleation to Growth	657
<i>Zhang Tongbao, Lu Yangcheng, Luo Guangsheng</i>	
(690a) Invited Talk: Peptide-Functionalized Nanoparticles for Targeted Delivery of Therapeutics	658
<i>Efrosini Kokkoli</i>	
(690b) Thermo-Responsive Bottlebrush Polymers	659
<i>Xianyu Li, Stacy Pesek, Boualem Hammouda, Yu Cong, Qilin Li, Rafael Verduzco</i>	
(690c) Effect of Molecular Interactions On the Growth, Properties, and Release of Polyelectrolyte Multilayers	660
<i>Biswa P. Das, Marina Tsianou</i>	
(690d) Depth-Profiling X-Ray Photoelectron Spectroscopy (XPS) Analysis of Interlayer Diffusion in Nanostructured Polyelectrolyte Multilayers	661
<i>Jonathan Brian Gilbert, Michael F. Rubner, Robert E. Cohen</i>	
(690e) Directed Self-Assembly of Acrylic Terpolymers With Mixed Block Regimes	662
<i>James A. Bergman, Jennifer Heinen</i>	
(690f) Mechanical Properties of Poly(styrene-isobutylene-styrene) Membranes As a Function of Sulfonation Level and Counter-Ion Substitution	663
<i>Agnes Padovani, David Suleiman, Arnaldo Negron</i>	
(690g) Self-Assembly Based Architecture of 2-D and 3-D Multi-Level Superstructure Nanoarrays	664
<i>Vignesh Suresh, Yuan Loong Tan, M. P. Srinivasan, Sivashankar Krishnamoorthy</i>	
(697a) The Applications of Thermodynamic Approach to Select Viable Chemistry in Plasma Etching	665
<i>Kun-Chieh Jack, Taeseung Kim, Vladan Jankovic, Jane P. Chang</i>	
(697b) Photochemical Interaction Between Air Plasma Reactive Species and UV Photons	666
<i>Matthew J. Pavlovich, David B. Graves, Douglas S. Clark</i>	
(697c) Evolution of Plasma-Exposed Tungsten Surfaces Due to Helium Diffusion and Bubble Growth	667
<i>Karl D. Hammond, Lin Hu, Dimitrios Maroudas, Brian D. Wirth</i>	
(697d) Analysis of Drift and Diffusional Transport of Mobile Helium Clusters in Near-Surface Regions of Plasma-Exposed Tungsten	668
<i>Lin Hu, Karl D. Hammond, Brian D. Wirth, Dimitrios Maroudas</i>	
(697e) High Rate Deposition of Nanocrystalline Silicon By Thermal Plasma Enhanced CVD Process	669
<i>Tengfei Cao, Haibao Zhang, Binhang Yan, Yi Cheng</i>	
(703a) Isolation, Identification and Characterization of High CO₂ Tolerant Microalgae for Efficient CO₂ Sequestration From Two Different Locations of India	671
<i>Aloke Kumar Ghoshal</i>	
(703b) Complex Energy System Which Combined Photovoltaic Power Generation With Electric Industrial Vehicle-Case Study of Maniwa SMART Factory-	673
<i>Ayako Shimizu, Yuu Notoji, Tsuguhiko Nakagawa</i>	
(703c) Multi-Objective Optimization of Bioelectricity Supply Chain With Life Cycle Assessment and Social Impact Analysis	674
<i>Maxim Slivinsky, Dajun Yue, Fengqi You</i>	
(703d) Techno-Economic Modeling and Analysis of Energy Storage Options for a Self-Sustained Solar PV Array	675
<i>Brian A. Peterson, Joseph D. Smith</i>	
(703e) Solar Electricity Generation System With Combined Energy Storage and Steam Generation	676
<i>Rong Xu, Theodore Wiesner</i>	
(703f) Thin-Film Composite Membranes for Osmotic Power Generation	677
<i>Xue Li, Tai-Shung Chung, Rui Chin Ong</i>	
(717a) Towards a Personalised Treatment of Acute Myeloid Leukaemia: The Impact of Considering the Cell Cycle	678
<i>Maria Fuentes-Gari, Eirini Velliou, Ruth Misener, Susana Brito Dos Santos, Nicki Panoskaltis, A. Mantalaris, E. N. Pistikopoulos</i>	
(717b) An Agent Based Model of Angiogenesis and Tissue Growth Within Porous Scaffolds	681
<i>Elif S. Bayrak, Hamidreza Mehdizadeh, Sami Sumo, Eric M. Brey, Ali Cinar, Banu Akar</i>	
(717c) Impact of Mechanical Pre-Stretch On Axonal Growth and Myelination	683
<i>Chun Liu, Seungik Baek, Jeff Sakamoto, Mark Tuszynski, Christina Chan</i>	
(717d) Generation of a Heart Patch Using a Blend of Native Heart Matrix, Chitosan and Polycaprolactone	684
<i>Seokwon Pok, Jeffrey G. Jacot</i>	
(717e) Engineering Clustered VEGF to Promote Angiogenesis in Vitro	686
<i>Shiva Gojgini, Tatiana Segura</i>	
(717f) Acrylated Hyaluronic Acid Hydrogels to Study Cancer Angiogenesis	687
<i>Tom Shen, Erbil Abaci, Jason A. Burdick, Sharon Gerecht</i>	

(717g) Imparting Hepatoprotection to Engineered Liver Tissues Using Anti-Microbial Peptides	688
<i>Lucas Vu, Annelise E. Barron, Padma Rajagopalan</i>	
(717h) Nanofiber Based Cellular Protrusions of Cancerous Cells	690
<i>Brian Koons, Puja Sharma, Amrinder S. Nain</i>	
(718a) Multi-Membrane Systems for Controlled Release	693
<i>Swapnil Gandhi, Eric Nuxoll</i>	
(718b) Effect of Mesh Size and Polymer Composition in the Release Kinetics of Therapeutics From Imprinted Polymer Networks	694
<i>Arianna Tieppo, Vishal D. Salian, Mark E. Byrne, Charles J. White</i>	
(718c) Using Shape Effects to Enhance Nanoparticle Targeting to Lungs and Brain	695
<i>Poornima Kolhar, Aaron C. Anselmo, Vivek Gupta, Kapil Pant, Balabhaskar Prabhakarparandian, Erkki Ruoslahti, Samir Mitragotri</i>	
(718d) Achieving Elongated Circulation Time and Reduced Cytotoxicity By Tuning the Surface Charge of the Doxorubicin Zwitterionic Polymer Conjugate	696
<i>Zhen Wang</i>	
(718e) Controlled Release of Drug-Loaded Microbubbles in Blood Vessels On a Chip	697
<i>Yoonjee Park, Sudong Kim, Tuan Pham, Noo Li Jeon, Robin Cleveland, Jon O. Nagy, Joyce Y. Wong</i>	
(718f) Tunable Nano-Delivery System for Cancer Treatment With Chlorotoxin: A New Approach for Targeted Drug Delivery	699
<i>Rana Falahat, Eva Christabel Williams, Marzenna Wiranowska, Norma Alcantar, Ryan Toomey</i>	
(718g) Static and Dynamic Properties of Biodegradable Poly (antioxidant β-amino ester) Networks Based On Incorporation of Curcumin Diacrylate	701
<i>Vinod S. Patil, Douglass S. Kalika, Thomas D. Dziubla</i>	
(718h) Synthesis and Characterization of An Antibiotic Hydrogel Wound Dressing Containing Covalently-Linked Vancomycin	703
<i>Andrew L. Vasilakes, David A. Puleo, James Z. Hilt, Thomas D. Dziubla</i>	
(718i) Effect of Different Oligoarginine Modification On Cellular Uptake and Intracellular Mechanism of Polymeric Nanoparticles	704
<i>Junli Zhou, Ying Chau</i>	
(719a) Invited Speaker: Next Generation Controlled Release Systems for Immunoregulation	705
<i>Steven R. Little</i>	
(719b) Therapeutic Protein Nanoparticles That Subvert Intracellular Pathways for Immunomodulation As a Treatment of IBD	706
<i>Lina Herrera Estrada, Huixia Wu, Guikai Zhang, Kevin Ling, Ronen Sumagin, Charles A. Parkos, Andrew S. Neish, Julie Champion</i>	
(719c) Selectively Targeting the TLR9-IRF7 Signaling Pathway By Polymer Blend Particles	707
<i>Helen C. Chen, Xi Zhan, Kenny K. Tran, Hong Shen</i>	
(719d) Development of Antiphagocytic CD47-Tagged Polymeric Prodrug Micelles to Target Alpha(v)Beta(3) Integrin-Bearing Cells	708
<i>Alicia Jane Sawdon, Ching-An Peng</i>	
(719e) Single-Cell Analysis of Specific B Cell Binding and Uptake of Peptide-Targeted Liposomes for Vaccine Formulations	709
<i>Talar Tokatlian, Darrell J. Irvine</i>	
(719f) Improved Vaccination Through the Use of Self-Assembled Peptide Amphiphile Micelle Delivery Devices	710
<i>Bret D. Ulery, Amanda Trent, Matthew J. Black, Matthew Tirrell</i>	
(719g) Design of HIV-1 Nanovaccine Using Active Targeting Mechanisms	711
<i>Julia Vela Ramirez, Lorraine Tygrett, Rajarshi Roychoudhury, Jihua Hao, Habtom Habte, Michael Cho, Neil Greenspan, Nicola Pohl, Thomas Waldschmidt, Balaji Narasimhan</i>	
(719h) On Designing Magnetic Nanoparticles for Targeted Delivery of Malaria DNA Vaccine	712
<i>Cordelia Selomulya</i>	
(734a) Ultrasmall Metal Nanoparticles With Molecular-Like Properties: Synthesis and Applications	713
<i>Jianping Xie</i>	
(734b) Stability of Phosphonate-Functionalized Iron Nanoparticles	714
<i>Lauren F. Greenlee, Nikki S. Rentz, Stephen J. Wilson</i>	
(734c) Magadiite Silylated With Sulfur-Functional Organosilanes: Investigation of Structure and Interlayer Accessibility	715
<i>Yating Mao, Shigeng Li, Hans-Conrad Zur Loye, Harry J. Ploehn</i>	
(734d) Polymer-Gold Composite Particles Via Pickering Emulsion Polymerization: Synthesis, Characterization and Application	716
<i>Mingmeng Zhang, Lenore Dai, Patrick Phelan</i>	
(734e) Synthesis and Characterization of Tin Selenide Nanocrystals Using Air-Stable Precursors	717
<i>Ying Qi, T. J. Mountziaris</i>	
(734f) Asymmetric Functionalization of Shape-Anisotropic Polymer Nanoparticles	718
<i>Florian Guignard, Marco Lattuada</i>	
(748a) Invited Talk	719
<i>David T. Wu</i>	
(748b) Coarse-Grained Molecular Dynamics Simulations of Thermal Annealing of P3HT:PCBM Bulk Heterojunctions for Organic Photovoltaic Applications	720
<i>Jan Michael Carrillo, Rajeev Kumar, Monojoy Goswami, Bobby G. Sumpter, W. Michael Brown</i>	
(748c) Phase Behavior of Rod-Coil Block Copolymers in the Melt and At Fluid Interfaces	721
<i>Tao Wei, Robert A Riggelman</i>	

(748d) Mathematical Modeling and Optimization Of The Bulk Continuous Process For The Production Of High Impact Polystyrene	722
<i>Cecilia Spies, Emilio Berkenwald, Diana A. Estenoz</i>	
(748e) Modeling the Dissolution of Crystalline Cellulose in Ionic Liquids	723
<i>Brooks D. Rabideau, Cesar Ojeda, Ahmed E. Ismail</i>	
(748f) Multiscale Simulation of the Atomistically Tailored Polymers / Oligomers Films and Surface Characterization	724
<i>Pil Seung Chung, Sejoon Park, Myung S. Jhon</i>	
(748g) Systematic and Simulation-Free Coarse-Graining of Polymer Melts Using Soft Potentials	725
<i>Delian Yang, Qiang (David) Wang</i>	
(751a) Molecular Mobility in Ultrathin Polymer Films	726
<i>Rodney Priestley</i>	
(751b) Nanoconfined Polymerization Reaction Kinetics and Thermodynamics	727
<i>Haoyu Zhao, Fatema Begum, Siyang Gao, Sindee L. Simon</i>	
(751c) Glassy Behavior of Polymers Confined in Unique Geometries	728
<i>Chuan Zhang, Rodney Priestley</i>	
(751d) Self-Assembled Protein Structures Are Altered By Underlying Fluctuations	729
<i>Nicholas Cordella, Thomas Lampo, Sarah C. Heilshorn, Andrew J Spakowitz</i>	
(751e) Tuning the Domain Size of Block Copolymers for Directed Self-Assembly Using Polymer Blending	730
<i>Richard A. Lawson, Andrew Peters, Peter J. Ludovice, Clifford L. Henderson</i>	
(751f) Annealing Polymer Nanocomposite Fibers and Films Via Photothermal Heating: Effects On Overall Crystallinity and Spherulite Density	731
<i>Vidya Viswanath, Somsubhra Maity, Jason Bochinski, Laura I. Clarke, Russell E. Gorga</i>	
(751g) Molecular Simulation Studies of Polydispersity Effects On The Morphology of Polymer Nanocomposites	732
<i>Tyler B. Martin, Arthi Jayaraman</i>	
(763a) Non-Isothermal Degradation Studies of Poly (lactic acid)/Sucrose Ester Nanocomposites	733
<i>Vimal Katiyar, Valapa Ravi Babu, Gopal Pugazhenti</i>	
(763b) Electrical Conductivity and Electromagnetic Interference (EMI) Shielding Properties of Copper Nanowire/Polypropylene Composites	735
<i>Yan Li, Uttandaraman Sundararaj</i>	
(763c) Giant Magnetoresistive Phosphoric Acid Doped Polyaniline-Silica Nanocomposites	739
<i>Hongbo Gu, Jiang Guo, Suying Wei, John Zhanhu Guo</i>	
(763d) Output Particle Structure and Morphology Development of Polymer Nanocomposites Processed via Solid-State Pulverization Techniques	740
<i>Katsuyuki Wakabayashi, Kunga Dagpo, Paola Arias Sanabria</i>	
(763e) Study On the Effect of TiO₂ Nanoparticles in the Transport Properties of Two Different Triblock Copolymer Membranes	741
<i>Ariangelis Ortiz-Negrón, David Suleiman</i>	
(763f) Multifunctional Epoxy Nanocomposites With Reduced Flammability, Enhanced Conductivity and Decreased Viscosity	742
<i>Xi Zhang, Ouassima Alloul, Qingliang He, Jiahua Zhu, Suying Wei, Zhanhu Guo</i>	
(763g) Synthesis and Study of the Effect of Nanoparticles in a Polymer Matrix	743
<i>Mayra A. Pantoja-Castro, Horacio Gonzalez-Rodriguez, Francisco López-Villarreal, Juan Francisco Pérez Robles</i>	
(765a) Opportunities for Selective Catalysis Within Discrete Portions of Zeolites: the Case for SSZ-57LP	744
<i>Stacey I. Zones</i>	
(765b) Hierarchically Organized, Honeycomb-Like MFI Zeolites By Sequential Intergrowth	745
<i>Tatsuya Okubo, Watcharop Chaikittisilp, Yuki Suzuki, Rino R. Mukti, Keiji Itabashi, Atsushi Shimojima, Tatsuya Suzuki, Keisuke Sugita</i>	
(765c) Characterizing the Temporal Evolution of Zeolite Crystallization in the Presence of Growth Modifiers	746
<i>Alexandra I. Lupulescu, Jeffrey D. Rimer</i>	
(765d) Mesoporous Spinel As Efficient Oxygen Evolution Catalysts	747
<i>Feng Jiao</i>	
(765e) Synthesis and Characterization of LaCrAl₁₁O₁₉ (Magnetoplumbite) Through Solid State Reaction	748
<i>Jesse P. Angle, Merna E. Salama</i>	
(765f) Synthesis and Catalytic Performance of Hierarchical HZSM-5 Zeolites By Recrystallization	749
<i>Zhenheng Diao, Guozhu Liu, Guozhu Li, Jijun Zou, Li Wang</i>	
(765g) Estimating Biases in BJH and DFT Mesopore Size Evaluation From Nitrogen Adsorption Isotherms Using X-Ray Diffraction	750
<i>Michael A. Smith, Alexander Zoelle, Michael G Ilasi</i>	
(767a) Synthesis, Characterization and Catalysis of Delaminated Aluminosilicate Zeolites Derived From MWW-Type Borosilicate Zeolite Precursors	751
<i>Xiaoying Ouyang, Son-Jong Hwang, Ron C. Runnebaum, Ying-Jen Wanglee, Dan Xie, Thomas Rea, Stacey I. Zones, Alexander Katz</i>	
(767b) Assembly of 3D Ordered Binary Silica Nanoparticle Superlattices and Multi-Modal Porous Carbons	752
<i>Shih-Chieh Kung, Mark A. Snyder</i>	
(767c) Modeling Silica Polymerization in the Context of Self-Assembly of Ordered Porous Materials	754
<i>Szu-Chia Chien, Scott M. Auerbach, Peter A. Monson</i>	
(767d) Fabrication of Reinforced Porous Nanocomposites With Silica Nanorods and Nanospheres	755
<i>Wenle Li, John Y. Walz, Kathy Lu, Margaret Anderson</i>	

(767e) Tuning the Physicochemical Properties of Growth Modifiers to Optimize Zeolite Catalysts	756
<i>Manjesh Kumar, Alexandra I. Lupulescu, Jeffrey D. Rimer</i>	
(767f) Facile Synthesis of Mesoporous ZSM-5 Without Using Secondary Template	757
<i>Zhuopeng Wang, Wei Fan</i>	
(767g) The New Composite Silica Aerogel By Mixing With Graphene Oxide	758
<i>Xiaohong Chen, Zeyang Yu, Huaihe Song, Kang Guo</i>	
(773a) Investigating Structurally Realistic Molecular Transport Junctions Via Atomistic Simulations and Conductance Calculations	759
<i>William R. French, Christopher R. Iacovella, Peter T. Cummings</i>	
(773b) Fundamentals of N and B Dopants On Graphene and Pt Interactions With Graphene	760
<i>Christopher L. Muhich, Jay Y. Westcott, Timothy C. Morris, Alan W. Weimer, Charles B. Musgrave</i>	
(773c) Semiflexible Polymer Model for Charge Mobility in Liquid Crystalline Organic Semiconductors	761
<i>Sonya Mollinger, Rodrigo Noriega, Alberto Salleo, Andrew J. Spakowitz</i>	
(773d) Efficient and Robust Strategies For Coupling Models Of Melt Crystal Growth Processes	762
<i>Kristianto Tjiptowidjojo, Andrew Yeckel, Jeffrey J. Derby</i>	
(773e) Intrinsic and Metal-Catalyzed Dielectric Breakdown	763
<i>Joel L. Plawsky, Juan Borja</i>	
(790a) Invited Talk: Achieving Product Differentiation Through Innovations in Polymerization Catalysts and Processes	764
<i>Ravi Dixit, Kishori T. Deshpande, Carlos Villa, Pradeep Jain</i>	
(790b) Hyperbranching in Polytriglyceride-Based Thermoplastic Elastomers — Relationships Between Chain Architecture, Processing, and Properties	765
<i>Eric Cochran, Nacu Hernandez, Mengguo Yan, R. Christopher Williams</i>	
(790c) Investigation of Diffusion-Controlled Kinetics in Free-Radical Photopolymerizations Initiated Via Photoredox Catalysis	766
<i>Alan Aguirre Soto, Jeffrey W. Stansbury</i>	
(790d) Hyperbranched Polyethylene-Supported L-Proline As An Efficient and Recyclable Catalyst for Aldol Reactions	768
<i>Pingwei Liu, Wen-Jun Wang, Bo-Geng Li, Shiping Zhu</i>	
(790e) Digital Synthesis of Polyolefins With Controlled Structures By Living Coordination Polymerization	769
<i>Weifeng Liu, Wen-Jun Wang, Hong Fan, Shiping Zhu, Bo-Geng Li</i>	
(790f) Effects of Pendant Ligand Binding Affinity On Chain Transfer for 1-Hexene Polymerization Catalyzed By Group IV Amine Bis-Phenolate Single-Site Catalysts	770
<i>Silei Xiong, D. Keith Steelman, Grigori A. Medvedev, Mahdi Abu-Omar, James M. Caruthers, W. Nicholas Delgass</i>	
(790g) Reaction Kinetics, Characterization, and Physical Properties of a Purely Aromatic Poly(phenylene)	771
<i>Timothy D. Largier, Chris Cornelius</i>	
(791a) The Effect of Particle Size Distribution On the Dispersion of Nanoclays in PET/Clay Nanocomposites	772
<i>Kazem Majdzadeh Ardakani, Saleh A. Jabarin, Elizabeth A. Lofgren</i>	
(791b) Ultra Low Carbon Nanotube Loaded Polypropylene Nanocomposites With Ultra High Electrical Conductivity	773
<i>Xi Zhang, Xingru Yan, Qingliang He, Huige Wei, Hongbo Gu, Jiahua Zhu, Suying Wei, Zhanhu Guo</i>	
(791c) Tunable Colloidal Crystalline Arrays Via 1-D Anisotropic Expansion	774
<i>Songtao Wu</i>	
(791d) Electrical Percolation in Nanostructured Polymeric Networks	775
<i>Arianna Watters, Giuseppe R. Palmese</i>	
(791e) Adaptive Periodic Origami Structures and Their Mechanical Properties	776
<i>Terry Shyu, Pablo F. Damasceno, Paul Dodd, Matthew Shlian, Max Shtein, Sharon C. Glotzer, Nicholas A. Kotov</i>	
(791f) The Effect of Long Multi-Walled Carbon Nanotubes On Morphology in Solution-Cast Blends	777
<i>Brian P. Grady, Steven Crossley, Nicholas Briggs, Jiayi Guo</i>	
(791g) Direct-Graphene Nanocomposites By Shear Milling and Ionic Liquid Chemistry	778
<i>James A. Throckmorton, Giuseppe R. Palmese</i>	
(797a) Invited Talk: Thermodynamics of Nanoparticle-Polymer Melt Hybrids	779
<i>Sanat Kumar</i>	
(797b) Thermodynamics of Block Copolymer Micellization in Ionic Liquid Solvents	780
<i>Megan L. Hoarfrost, Timothy P. Lodge</i>	
(797c) Phase Behavior of Tapered Diblock Copolymers From Self-Consistent Field Theory	781
<i>Jonathan R. Brown, Scott W. Sides, Lisa M. Hall</i>	
(797d) Understanding Fluctuation/Correlation Effects in Diblock Copolymer Melts With a Density-Functional Theory	782
<i>Jing Zong, Delian Yang, Qiang (David) Wang</i>	
(797e) Free Energy of Block Copolymer Systems Via Thermodynamic Integration of a Mesoscale Block-Copolymer Model	783
<i>Andrew Peters, Richard Lawson, Benjamin Nation, Peter J Ludovice, Clifford Henderson</i>	
(797f) Understanding Retention of Block Copolymers in Size Exclusion Chromatography and Liquid Chromatography At the Critical Condition	784
<i>Kimberly Struk, Mark R. Schure, J. Ilja Siepmann</i>	
(797g) Thermodynamic Analysis of the Solubility of Gases and Vapors in Swelling Glassy Polymers: A Predictive Modeling Approach	785
<i>Matteo Minelli, Ferruccio Doghieri</i>	

(799a) Nickel Aluminate Spinel Reinforced Porous Ceramic for Membrane Application	787
<i>Yi-Lan Elaine Fung, Huanting Wang</i>	
(799b) Complex Metal Oxide Nanowires for Thermoelectric and Battery Applications	788
<i>Gautam G. Yadav, Yue Wu</i>	
(799c) Ultra-Thin Porous Metal Oxide Films Prepared By Molecular Layer Deposition	789
<i>Xinhua Liang, Rajankumar Patel</i>	
(799d) Modeling MASS Transport In Hexaboride Materials Using Molecular Approaches	790
<i>Victor R. Vasquez</i>	
(799e) Intelligent Gel-Oriented in-Situ Synthesis of Inorganic Mesoporous Materials	791
<i>Li Zhong, Dongping Duan, Wenzhong Wang, Xing Wang</i>	
(799f) A Novel Computer-Aided Molecular Design Approach to Design New Non-Intuitive Shrinkage Reducing Admixtures (SRAs) for Cement: A Modeling and Experimental Study for Improved Performance	792
<i>Hamed Kayello, Natalia Shlonimskaya, Joseph Biernacki, Donald P. Visco</i>	
(799g) Acicular Mullite Reaction Furnace Model Development	794
<i>Laura J. Dietsche, Edward M. Calverley, Todd M. Francis</i>	
(805a) Biophysical and Biochemical Cues Regulate the Expansion and the Differentiation of Hematopoietic Stem Cells	795
<i>Ji Sun Choi, Brendan A. C. Harley</i>	
(805b) Nitric Oxide-Generating Hydrogels for Driving Maturation of Stem Cell-Derived Cardiomyocytes	797
<i>Alexander J. Hodge, Elizabeth A. Lipke</i>	
(805c) Novel 3D Microenvironments for Mesenchymal Stem Cell Engagement By Hydrogel-Embedded Proteolipobeads	798
<i>Eric Fried, Michelle Gupta, Devika Varma, Steve Nicoll, Lane Gilchrist</i>	
(805d) Promoting Ligamentogenic Differentiation of Mesenchymal Stem Cells in Controlled Microenvironments	799
<i>Matthew S. Rehmann, April M. Kloxin</i>	
(805e) Controllable Effects of Mechanical Moduli On Osteoblast Differentiation of Mesenchymal Stem Cells On Polyurethane Substrates	800
<i>Ruijing Guo, Sichang Lu, Jonathan Page, Scott A. Guelcher</i>	
(805f) Physiological Programming of Human Embryonic Stem Cells in Osteomimetic Scaffolds	802
<i>Katy Rutledge, Qingsu Cheng, Ehsan Jabbarzadeh</i>	
(805g) Engineering of Xeno-Free Microcarriers for the Scalable Expansion and Differentiation of Human Pluripotent Stem Cells in Stirred-Suspension Vessels	803
<i>Yongjia Fan, Emmanuel (Manolis) S. Tzanakakis</i>	
(807a) Invited Talk: Molecular Understanding, Design and Development of Ultra Low Fouling Zwitterionic-Based Functional Materials	805
<i>Shaoyi Jiang</i>	
(807b) Anionic and Cationic Poly(ionic liquid) Thermosets	806
<i>James A. Throckmorton, Giuseppe R. Palmese</i>	
(807c) Reversible Switching of Adhesion With Polyelectrolyte Brushes Via Uptake and Release of Multi-Valent Ions	807
<i>Robert Farina, Nicolas Laugel, Matthew Tirrell</i>	
(807d) Coarse-Grained Model of Polymer Electrophoresis Including Conformation-Dependent Mobility	809
<i>Harsh Pandey, Patrick T. Underhill</i>	
(807e) Growth Factor Release From Polyelectrolyte-Modified Titanium and Titania Nanotube Surfaces	810
<i>Amy M. Peterson, Helmuth Moehwald, Dmitry Shchukin</i>	
(807f) Charged Block Copolymer Assemblies Driven By Complex Coacervation	811
<i>Dimitrios Priftis, Lorraine Leon, Sarah L. Perry, Matthew Kade, Matthew Tirrell</i>	
(807g) Development of An Electrochemical Deionization System Based On Pseudo-Capacitors	812
<i>Demetra S. Achilleos, Xianwen Mao, T. Alan Hatton</i>	
(809a) Investigation of Growth Mechanisms in Molecular Layer Deposition of Polymer Films	814
<i>David Bergsman, Han Zhou, Stacey F. Bent</i>	
(809b) Porous Polymer Membranes By Simultaneous Polymerization and Solid Monomer Deposition	815
<i>Scott Seidel, Philip Kwong, Malancho Gupta</i>	
(809c) Oxidative Chemical Vapor Deposition of Semiconducting Polymers For Integration Into Polymer Solar Cells	816
<i>David C. Borrelli, Vladimir Bulovic, Karen K. Gleason</i>	
(809d) Demonstration of Potential Opportunities in Photo-Initiated Chemical Vapor Deposition (piCVD)	817
<i>Aravind Suresh, Daniel Anastasio, Daniel D. Burkey</i>	
(809e) Enhanced Grain Growth in Cu₂ZnSnS₄ Thin Films Via Vapor Transport of Alkali Metal Impurities	818
<i>Melissa Johnson, Sergey Baryshev, Elijah Thimsen, Michael Manno, Xin Zhang, Christopher Leighton, Eray S. Aydil</i>	
(809f) Epitaxial Growth of Thick Films of Boron Phosphide On Silicon Carbide and Its Properties	819
<i>Balabalaji Padavala, Clint D Frye, James H Edgar</i>	
(809g) Formation of Extreme Aspect-Ratio Semiconductor Waveguides Via High-Pressure Chemical Deposition in Microcapillaries	820
<i>Seyed Pouria Motevalian, Todd D. Day, John V. Badding, Ali Borhan</i>	
(819a) Invited Talk: Graphene Without Compromise: Dispersion, Processing, Morphology, and Composites	821
<i>Micah Green</i>	
(819b) Centrifugal Forcespinning for Manufacturing High Performance Fibers	822
<i>Yichen Fang, Christopher J. Ellison, Kadiravan Shanmuganathan</i>	

(819c) Free Surface Electrospinning of Aqueous Polymer Solutions From a Wire Electrode	823
<i>Indrani Bhattacharyya, Gregory C. Rutledge</i>	
(819d) Effective Blending of Ultrahigh Molecular Weight Polyethylene With High Density Polyethylene Achieved Via Solid-State Shear Pulverization	824
<i>Mirian F. Diop, John M. Torkelson</i>	
(819e) Development of Biodegradable Foams Through Processing and Material Property Enhancement	826
<i>Amy Tsui, Curtis W. Frank</i>	
(819f) Dynamics of Rod-Coil Block Copolymer Melts	828
<i>Muzhou Wang, Ksenia Timachova, Bradley D. Olsen</i>	
(819g) Rheological Properties of Disulfonated Poly(arylene ether sulfone)s Plasticized With Poly(ethylene glycol) for Desalination Membrane Formation	829
<i>Hee Jeung Oh, Benny Freeman, James E. McGrath, D. R. Paul</i>	
Author Index	