

American Institute of Chemical Engineers

Nanoscale Science and Engineering Forum

Presentations at the
2007 AIChE Annual Meeting

November 4-9, 2007
Salt Lake City, Utah, USA

Printed from e-media with permission by:

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

ISBN: 978-1-60560-017-8

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

ISBN: 978-1-60560-017-8

Copyright (2007) by the American Institute of Chemical Engineers.
All rights reserved.

For permission requests, please contact the American Institute of Chemical Engineers at the address below.

American Institute of Chemical Engineers
Proceedings
Three Park Avenue
New York, NY 10016-5991
Phone: 212-591-8100

www.aiche.org

American Institute of Chemical Engineers

Nanoscale Science and Engineering Forum
2007

TABLE OF CONTENTS

N,M Selectivity of Single-Walled Carbon Nanotubes by Different Carbon Precursors on Co-Mo Catalysts	1
<i>Yuan Chen, Bo Wang, Patrick Chun Hwa Poa, Li Wei, Yanhui Yang, Lain-Jong Li</i>	
Chirality Selectivity In The Catalyzed Growth Of Single-Wall Carbon Nanotubes.....	2
<i>Perla B. Balbuena, Jin Zhao, Diego Gomez-Gualdrón</i>	
In-Situ Tem Observations For Selective Synthesis Of Carbon Nanotubes	3
<i>Renu Sharma, Peter Rez, Megan M. Brown, Gaozhi Du, Michael M.J. Treacy</i>	
Dendrimer-Assisted Controlled Growth of Carbon Nanotubes for Enhanced Thermal Interface Conductance	4
<i>Placidus B. Amama, Baratunde A. Cola, Timothy D. Sands, Xianfan Xu, Timothy S. Fisher</i>	
Continuous-Flow Microreactor Synthesis Of Metal Nanoparticles For Catalytic Production Of Carbon Nanotubes.....	8
<i>Wei-Hung Chiang, R. Mohan Sankaran</i>	
Growth of Microarrays of Aligned Single-Walled Carbon Nanotubes from Catalyst Coated Alumina Nanostructures	9
<i>Cary L. Pint, Sean Pheasant, Kent Coulter, Nolan Nicholas, Howard K. Schmidt, Matteo Pasquali, Robert H. Hauge</i>	
Control of Diameter during Cnt Synthesis in the Three Methods.....	10
<i>Kal Renganathan Sharma</i>	
Controlling Conjugated Block Copolymer Nanodomain Orientation With Magnetic Fields.....	20
<i>Yuefei Tao, Hagar Zohar, Bradley D. Olsen, Rachel A. Segalman</i>	
Simulating The Directed Assembly Of Block Copolymers On Patterned Substrates.....	21
<i>Francois Detcheverry, Juan J. De Pablo</i>	
Investigating Surface Segregation And Self Organization Of Amphiphilic Polyelectrolytes Using Nexasf Spectroscopy.....	22
<i>Sitaraman Krishnan, Marvin Y. Paik, Karen E. Sohn, Christopher K. Ober, Edward J. Kramer, Daniel A. Fischer</i>	
Brownian Dynamics Simulations of Polyelectrolyte Adsorption Onto Topographically Patterned Surfaces	23
<i>Nazish Hoda, Satish Kumar</i>	
The Effect Of Image Forces Upon Polyelectrolyte Adsorption	24
<i>Scott K. Stanley, Vivek M. Prabhu, Eric K. Lin, Wen-li Wu</i>	
Stimuli-Responsive Polyelectrolyte Brushes At The Solid/water Interface: Reversible Activation By Changes In Ionic Strength	25
<i>V. Papaefthimiou, S. Erfani, G.H. Findenegg, R. Steitz, J.-U. Günther, C.A. Helm</i>	

Development Of Self-Assembled Polymeric Nanoparticles For Targeted Prostate Cancer Therapy	26
<i>Frank Gu, Liangfang Zhang, Omid Farokhzad, Robert Langer</i>	
A Structure-Reactivity Relationship For Single-Walled Carbon Nanotubes Reacting With 4-Hydroxybenzene Diazonium Salt	27
<i>Nitish Nair, Woo-Jae Kim, Monica Usrey, Michael Strano</i>	
Highly Stable and Luminescent Individual SWNT in Acidic Media.....	28
<i>Juan G. Duque, Laurent Cognet, Nicholas Parra-Vasquez, Nolan Nicholas, Howard K. Schmidt, Matteo Pasquali</i>	
Structure-Induced Superhydrophobicity Of Single-Walled Carbon Nanotubes.....	29
<i>Liang Zhang, Daniel E. Resasco</i>	
Emulsion Stabilization With Single-Walled Carbon Nanotubes.....	30
<i>Randy K. Wang, Kirk J. Ziegler</i>	
Dispersion Of Single-Walled Carbon Nanotubes In Proteins: Characterization And Potential Applications	31
<i>Dhriti Nepal, Virginia A. Davis, Kurt E. Geckeler</i>	
Nanotube-Assisted Protein Inactivation.....	32
<i>Amit Joshi, Supriya Punyani, Theodorian Borca-Tascuic, Ravi S. Kane</i>	
Toward Neuroprosthetic Devices From Carbon Nanotubes	33
<i>Nicholas Kotov</i>	
Decomposition And Evolution Of Nanostructure On Surfaces Coated With DNA-Containing Multilayered Films	34
<i>Nathaniel J. Fredin, Jingtao Zhang, David M. Lynn</i>	
Phase Separation Behavior In The Electrospun Fibers Of Polymer Blends.....	35
<i>Xiaoyu Sun, Larrisha R. Nobles, Richard Spontak</i>	
Metal Nanoparticle-Polymer Fiber Nanocomposite Processing Via A Novel One-Step Electrospinning	36
<i>Carl D. Saquing, Saad A. Khan</i>	
Novel Nanostructured Polymers: Compatibilized Polymer Blends With 100 Nm Diameter Dispersed Phases And Gradient Copolymers	37
<i>Robert Sandoval, Jungki Kim, Michelle Mok, John M. Torkelson</i>	
Major Modifications of Glass Transition and Physical Aging Behaviors of Amorphous Polymers by Nanocomposite Formation with Nanoparticles and Nanotubes.....	38
<i>Perla Rittigstein, John M. Torkelson</i>	
Anisotropy Of Diblock Copolymer Nanocomposites	39
<i>Dong Meng, Qiang Wang</i>	
Design Of Nanoporous, Proton-Conductive Polymer Thermosets	40
<i>Aflal M. Rahmathullah, Yossef A. Elabd, Giuseppe R. Palmese</i>	
Adsorption And Diffusion Of Alkanes And Alkenes In Carbon Nanotubes.....	41
<i>Frerich J. Keil, Sven Jakobtorweihen</i>	
Gas Adsorption on Carbon Nanotube Bundles: Simulations and Comparison with Experiment.....	42
<i>Matthew R. LaBrosse, Wei Shi, Karl Johnson</i>	
Controlling The Electrophoretic Mobility Of Single-Walled Carbon Nanotubes	46
<i>Monica Usrey, Nitish Nair, Daniel E. Agnew, Cesar F. Pina, Michael S. Strano</i>	

Using Single-Walled Carbon Nanotubes As Molecular Transporters For The Treatment Of Ischemic Osteonecrosis	47
<i>Korie L. Fairbairn, Venkat Bhethanabotla, Ravi Kothapalli, Stefan Cular</i>	
Quantitative Study Of Carbon Nanotube Interactions With Cell Culture Medium.....	49
<i>Lin Guo, Annette Von Dem Bussche, Agnes Kane, Robert H. Hurt</i>	
Targeted Removal of Bioavailable Metal as a Nanotube Detoxification Strategy.....	50
<i>Daniel Morris, Xinyuan Liu, Lin Guo, Agnes Kane, Robert H. Hurt</i>	
Coating Single Walled Carbon Nanotubes With Tin Oxide For Gas Sensing Applications.....	51
<i>Syed Mubeen Jawahar Hussaini, Ting Zhang, Marc A. Deshusses, Nosang V. Myung</i>	
Transient Polymer Structure in Polyurethane Carbon Nanotube Nanocomposites Under Deformation.....	52
<i>Hilmar Koerner, Richard A. Vaia</i>	
Multifunctional Elastomer Nanocomposites With Functionalized Graphene Single Sheets	53
<i>Bulent Ozbas, Shigeyuki Toki, Benjamin S Hsiao, Benjamin Chu, Douglas Adamson, Richard A Register, Ilhan A Aksay, Robert K. Prudhomme</i>	
Nanocomposites of Polyurethane Elastomers for High-Rate and Large-Strain Applications.....	54
<i>J. J. Huang, S. M. Liff, G. H. McKinley, M.C. Boyce</i>	
Functional Composites Formed From Cross-Linked Microparticles Of A Responsive Polymer And Titania Nanoparticles	55
<i>Cecil Coutinho, Reshma Harrinauth, Maya Trotz, Vinay K. Gupta</i>	
Utilization Of Nanoplatelet Materials In Organic-Inorganic Hybrid Structures: Formation Challenges And Separation Advantages	56
<i>J.R. Johnson, William J. Koros</i>	
Synthesis and Characterization of Cobalt Oxide Nanocomposites	57
<i>Dwayne Vickers, Tamara Floyd-Smith, Lynden A. Archer</i>	
Length Dependence Of SWNT Optical Features.....	62
<i>Jeffrey A. Fagan, Jeffrey R. Simpson, Matthew L. Becker, Barry J. Bauer, Angela R. Hight-Walker, Erik K. Hobbie</i>	
Differences In Photoluminescence Intensities Of Selected Single-Walled Carbon Nanotube Structures Quantified With Near-IR Fluorescence Microscopy	63
<i>Dmitri Tsyboulski, John-David Rocha, Sergei Bachilo, Laurent Cognet, R. Bruce Weisman</i>	
Carbon Nanotube – Unsaturated Polyester Resin Composites	64
<i>Matthew J. Kayatin, Natalie K. Wagner, Robert L. Yuan, Devin M. Jones, Virginia A. Davis</i>	
A Mechanism for Growth Termination in Vertically Grown Carbon Nanotube Films: Mechanical Coupling of Independent Chemical Processes	65
<i>Jae-Hee Han, Rachel A. Graff, Bob Welch, Charles P. Marsh, Ryan Franks, Michael Strano</i>	
Chemical Vapor Deposition of Multi-Wall Carbon Nanotubes in Vertical Arrays for A Reconfigurable Masking Technology.....	66
<i>Jonathan G. Leong, Dennis M. Callahan Jr., Eko A. Pandowo, Demetrios Papageorgiou, Katherine S. Ziemer, Albert Sacco Jr.</i>	
Functionalization Of Carbon Nanotubes And Carbon Nanofibers Via Supercritical Fluid Treatment For Use In Fuel Cells	67
<i>André D. Taylor, Ryan Sekol, Craig M. Comisar, Levi T. Thompson</i>	

Carbon Nanotube Field-Effect Transistors Built in-Situ Via Chemical Vapor Deposition.....	68
<i>Eko A. Pandowo, Dennis M. Callahan Jr., Jonathan G. Leong, Demetrios Papageorgiou, Katherine S. Ziemer, Albert Sacco Jr.</i>	
Novel Porous Polymer/ceramic Composite Material For Tissue Engineering Applications.....	69
<i>Xinhua Liang, Steven M. George, Alan W. Weimer</i>	
Dispersion And Percolation Transitions In Polymer Nanotube Mixtures	70
<i>Venkat Ganesan, Megha Surve</i>	
Multilayer Coextrusion of Polymer Nanocomposites	71
<i>Randy A. Mrozek, Phillip J. Cole, Joseph L. Lenhart</i>	
Predicting The Barrier Properties Of Polymer Nanocomposites	72
<i>Youthachack Landry Khounlavong, Venkat Ganesan</i>	
Synthesis and Characterization of Carbon Nanofiber/phenolic Resin Nanocomposites	73
<i>Mitra Yoonessi, Lionel Porcar, Hossein Toghiani, Robert Wheeler, Charles U. Pittman</i>	
Three Dimensional Characterization of Aggregate Size and Morphology of Silica Nanoparticles	74
<i>Mitra Yoonessi, Thomas Hodge, JoAn Hudson</i>	
Bottom-Up Synthesis Of Device-Level Mesoporous Silica, Using Photolithography And Supercritical CO₂.....	75
<i>Alvin H. Romang, Sivakumar Nagarajan, Joan K. Bosworth, Christopher K. Ober, Thomas P. Russell, James J. Watkins</i>	
Nanoscale Patterning With S-Layer Proteins And Area Selective Atomic Layer Deposition.....	76
<i>Jiurong Liu, Carey M. Tanner, Esther Lan, Bruce Dunn, Jane P. Chang</i>	
Formation Of Porous Aluminosilicate Microspheres Via Nanoparticle Assembly	77
<i>Shyam Kadali, Michael S. Wong</i>	
Generation of Monodisperse Ordered Mesoporous Materials from a Microfluidic Device.....	78
<i>Inho Lee, Dawei Loi, Zhengdong Cheng, Hae-Kwon Jeong</i>	
Templated Synthesis Of Mesoporous Hollow Inorganic Nanoparticles	79
<i>Spyros Monastiriotis, Alexander Couzis</i>	
Dual Latex/ Surfactant Templated Synthesis Of Protein-Accessible Hollow Spherical Mesoporous Silica Particles	80
<i>Stephen E. Rankin, Rong Xing</i>	
Preparation of Gold Nanoclusters Using Dendrimers and Their Reactivity for Co Oxidation.....	81
<i>Peter E. H. Kracke, Terry E. Haas, Maria Flytzani-Stephanopoulos</i>	
Highly Crystalline Mesoporous TiO₂ Composed Of Oriented Nanorod Building Blocks	83
<i>Donghai Wang, Jun Liu, Zimin Nie, Qisheng Huo, Rong Kou, Chongmin Wang</i>	
Diatom Cell Culture for the Self-Assembly of Silicon-Titanium Oxides Ordered at the Submicron and Nanoscales	84
<i>Clayton Jeffryes, Gregory Rorrer, Chih-hung Chang, Jun Jiao, Timothy Gutu</i>	
Gold Nanocrescents with Highly Tunable Infrared Plasmonic Properties Fabricated by Nanosphere Template Lithography	85
<i>Rostislav Y. Bukasov, Jennifer S. Shumaker-Parry</i>	

Periodically Nanostructured Materials Templated From Self-Assembled Colloidal Crystals	86
<i>Peng Jiang, Nicholas Linn, Chih-Hung Sun</i>	
Characterizing the Behavior of Non-Spherical Microparticles Trapped in An Optical Tweezers.....	87
<i>Andrew H. Ewing, Sangtae Kim, Steven T. Wereley</i>	
Nanoporous Silicon Nitride Membranes Via Triblock Terpolymer Templating	88
<i>Eric E. Nuxoll, Marc A. Hillmyer, Ronald A. Siegel</i>	
Ultrafast Composite Varistor Materials Based On Particle-Particle Ald Tunnel Junctions	89
<i>Michael A. Weimer, Steven M. George, Alan W. Weimer</i>	
Positioning, Alignment And Placement Of Anisotropic Nanoparticles Using Hydrodynamic Forces In Droplets	90
<i>Richa Sharma, Michael Strano</i>	
Simulation Study Of Self-Assembly Of Carbon Nanoparticles With Tethered Poly-Ethylene Oxide	91
<i>Justin B. Hooper, Dmitry Bedrov, Grant D. Smith</i>	
Interaction Of C₆₀ Derivatives And DNA Segments From Molecular Dynamics	92
<i>Xiongce Zhao</i>	
Dynamic Binding in a Tethered-Particle Study of DNA Hybridization.....	93
<i>Marie T. Ung, Anthony J. Kim, John C. Crocker</i>	
Simulations And Analysis Of Self-Assembly Of Cdte Nanoparticles Into Wires And Sheets	94
<i>Zhenli Zhang, Zhiyong Tang, Nicholas A. Kotov, Sharon C. Glotzer</i>	
Structure And Phase Behavior Of Melts And Dense Solutions Of Polymer Tethered Nanoparticles	95
<i>Arthi Jayaraman, Kenneth S. Schweizer</i>	
The Phase Behavior Of Mono And Ditethered Nanospheres: Effect Of Particle Size And Tether Placement.....	96
<i>Christopher R. Iacovella, Mark A. Horsch, Zhenli Zhang, Sharon C. Glotzer</i>	
A Coarse-Grained Force Field For Simulating Tethered Nanoparticle Self-Assembly In Solution.....	97
<i>Elaine R. Chan, Alberto Striolo, Clare McCabe, Sharon C. Glotzer, Peter T. Cummings</i>	
Reversible Interactions for Bionanoscale Self-Assembly	98
<i>Wirasak Smittipong, Arkadiusz Chworos, Luc Jaeger, Matthew Tirrell</i>	
Nanomaterials Education for City College of New York Science and Engineering Undergraduates.....	99
<i>Ilona Kretzschmar</i>	
Fabrication and Characterization of Enzyme Nanoparticles	100
<i>Hee Joon Park, Sean M. Ukele, Patrick A. Johnson</i>	
Fabrication Of Nanoporous Silicon Optical Filters Via Galvanic Displacement Processes In Water-In-Oil Microemulsions	101
<i>Liangliang Cao, Michael Weiss, Di Gao</i>	
On the Thermal Conductivity of Carbon Nanotubes	102
<i>Kal Renganathan Sharma</i>	

Fabrication Of Non-Ageing Superhydrophobic Surfaces By Packing Flower-Like Hematite Particles	103
<i>Anmin Cao, Liangliang Cao, Di Gao</i>	
Relaxation Of Biaxial Strain In Ultra-Thin Films Of Face-Centered-Cubic Metals Through Ductile Void Growth And Structural Phase Transitions.....	104
<i>Kedarnath Kolluri, M. Rauf Gungor, Dimitrios Maroudas</i>	
One And Two-Dimensional Self-Arranged Protein Nanoarrays On Copolymer Templates	105
<i>Nitin Kumar, Omkar Parajuli, Jong-In Hahn</i>	
Phytochelatin-Mediated Synthesis Of Cadmium Chalcogenide Semiconductor Nanocrystals.....	106
<i>Seung Hyun Kang, Ashok Mulchandani, Wilfred Chen</i>	
Nanotubes Enhance The Paramagnetic Properties Of MRI Agents	107
<i>Pratixa P. Joshi, Valerie C. Moore, S. Ward Casscells, Jodie L. Conyers</i>	
Carbon Nanotube Field-Effect Transistors (Cnlfets) Built In-Situ Via Chemical Vapor Deposition	108
<i>Eko A. Pandowo, Dennis M. Callahan Jr., Jonathan G. Leong, Demetrios Papageorgiou, Katherine S. Ziemer, Albert Sacco Jr.</i>	
Synthesis of Plga-Chitosan Nanoparticles for Plasmid DNA Delivery	109
<i>Anna Charron Dugas, Cristina M Sabliov</i>	
Positioning, Alignment And Placement Of Carbon Nanotubes Using Hydrodynamic Forces In Droplets	110
<i>Richa Sharma, Michael Strano</i>	
Adsorption of Organosulfur Molecules on Functionalized Carbon Nanotubes	111
<i>Pedro Navarro-Santos, Ramon Lopez-Sandoval, Jose L. Rivera</i>	
Interaction of Water with Cap-Ended Defective and Non-Defective Small Carbon Nanotubes.....	112
<i>Jose L. Rivera, Jose L. Rico, Francis W. Starr</i>	
Use Of Single Walled Carbon Nanotube Fluorescence For In Vivo Biosensing And Imaging	113
<i>Paul W. Barone, Michael S. Strano</i>	
A Structure-Reactivity Relationship For Single-Walled Carbon Nanotubes.....	114
<i>Nitish Nair, Woo-Jae Kim, Monica Usrey, Michael Strano</i>	
Using Functionalization To Control The Electrophoretic Mobility Of Single-Walled Carbon Nanotubes	115
<i>Monica Usrey, Nitish Nair, Daniel E. Agnew, Cesar F. Pina, Michael S. Strano</i>	
The Growth Termination Mechanism in Vertically Grown Carbon Nanotube Films	116
<i>Jae-Hee Han, Rachel A. Graff, Bob Welch, Charles P. Marsh, Ryan Franks, Michael Strano</i>	
Real-Time Single-Molecule Tracking on the Uptake and Transport Pathway of Single-Walled Carbon Nanotubes in NIH₃T₃ Cells	117
<i>Hong Jin, Michael Strano</i>	
Synthesis of Complex Gold Nanostructures in a Fungal System	118
<i>Jianping Xie, Jim Yang Lee, Daniel I. C. Wang, Yen Peng Ting</i>	
Polymer-Modified Opal Nanopores	119
<i>Olga Schepelina, Ilya Zharov</i>	
Self-Assembled Opal Films & Membranes	120
<i>Andrew K. Bohaty, Ilya Zharov</i>	

Polymer-Modified Opal Membranes	121
<i>Alexis E. Abelow, Ilya Zharov</i>	
Molecular Dynamics Study Of Vibrational Signal Transmission In A Glycine Polypeptide	122
<i>Ling Miao, Jorge Seminario</i>	
Asymmetric Functionalization And Synthesis Of Gold Nanoparticle Dimers	123
<i>Tyler B. Heap, Rajesh Sardar, Jennifer S. Shumaker-Parry</i>	
Friction Forces between Carbon Nanotube Walls with Defects	124
<i>Roberto Guerra-Gonzalez, Jose L. Rivera</i>	
Hydrogen Storage In Carbon Nanocomposites	125
<i>Sean Mickey, Douglas K. Ludlow, Yangchuan Xing</i>	
The Roller Vibration Milling: Preparing Dry Nanostructures in Large Scale and at Room Temperature	126
<i>Shulin Wang, Haoyan Wang</i>	
Self-Assembly And Flow Alignment Of Inorganic Nanorods	133
<i>Shanthi Murali, Bennett D. Marshall, Dhriti Nepal, Virginia A. Davis</i>	
Synthesis And Characterization Of Pure Zn(BH₄)₂ Single Crystal	134
<i>Pabitra Choudhury, Sesha Srinivasan, Venkat R. Bhethanabotla, Elias Stefanakos</i>	
Nucleation And Growth Of Diamond On Carbon Nanopipettes	136
<i>Santosh Rupa Dimpala, Boris D. Chernomordik, Mahendra K. Sunkara</i>	
Young Investigator Award Seminar: Enabling Novel Technologies through Nano- and Meso-Scale Designed Materials	137
<i>Joerg Lahann</i>	
Forum Award Seminar: Computational and Theoretical Nanoscience – Emerging Tools for Nanoscience and Nanotechnology	138
<i>Peter T. Cummings</i>	
Simulation-Based Design of Nanoscale Building Blocks for Self- Assembly: The Shapes of Things to Come	139
<i>Sharon C. Glotzer</i>	
Single Molecule Force Spectroscopy for Nanoscience and Technology: What Can We Learn from Pulling on Single Macromolecules?	140
<i>Stefan Zauscher</i>	
Nanoparticles and Proteins: How Similar Are They?	142
<i>Nicholas A. Kotov</i>	
Nanolayer Assembly Routes to Functional Thin Films, Hybrid Nanomaterials and Devices	143
<i>Paula T. Hammond</i>	
Nano-Terra, a Scientist's Approach to Commercializing Science	144
<i>Jeffrey Carbeck</i>	
Commercializing Nanostructured Carbon at Nano-C, Inc	145
<i>Viktor Vejins</i>	
Nanotechnology at Ge: Path to Commercialization	146
<i>Amit Kulkarni</i>	
Nantero's Nram Universal Memory Developed with Microelectronics Grade Carbon Nanotubes Formulation	147
<i>Eliodor G. Ghenciu</i>	

Generation And Field Emission Of Titania Nanotube Arrays Prepared With A Fast Anodization Process Enabled By Use Of A Deep Eutectic Solvent	148
<i>Chun-Yi Chen, Shih-Yuan Lu</i>	
Molecular Dynamics Simulation Study of the Degradation of Polymer Nanoimages Created by Nanoimprint.....	149
<i>Suhua Zhu, Xiaobo Ji, Wencong Lu, Liuming Yan</i>	
Fabrication, Characterization, and Electrical Properties of Ceramic Nanofiber Yarns by Electrospinning.....	156
<i>A. F. Lotus, E. A. Evans, R. D. Ramsier, D. H. Reneker, G. G. Chase</i>	
Large-Scale Production Of Insulator Coated Metal Based Sensors.....	164
<i>Evagelos K. Athanassiou, Robert N. Grass, Wendelin J. Stark</i>	
Atomic-Scale Analysis Of Strained Ultra-Thin Fcc Metallic Films: Defect Dynamics And Strain Relaxation Mechanisms	165
<i>Kedarnath Kolluri, M. Rauf Gungor, Dimitrios Maroudas</i>	
Structural Analysis Of Organic Electronic Columnar Crystals.....	166
<i>Steven D. Hudson, Virgil Percec, Mihai Peterca, Goran Ungar</i>	
Multiresolution Image Characterization Of Line Edge Roughness Using Wave Cluster Technique.....	167
<i>Rajib Mukherjee, A. Palazoglu, Jose A. Romagnoli</i>	
A Computer Simulation--Molecular-Thermodynamic Model For Self-Assembly	169
<i>Brian C. Stephenson, Arthur C. Goldsipe, Kenneth J. Beers, Daniel Blankschtein</i>	
Thermodynamic Equilibrium Of Domains In A Two-Component Langmuir Monolayer	170
<i>Yufang Hu, Kieche Meleson, Jacob N. Israelachvili</i>	
Phase Diagram for Stimuli-Responsive Materials Containing Dipolar Colloid Particles	171
<i>Amit Goyal, Carol K. Hall, Orlin D. Velev</i>	
Self-Organization Of Nanoparticles: Analogy With Protein Systems.....	172
<i>Nicholas A. Kotov</i>	
Nanoparticles in Nematic Liquid Crystals: Interactions with Nanochannels	173
<i>Francisco R. Hung, Brian T. Gettelfinger, Gary M. Koenig, Nicholas L. Abbott, Juan J. de Pablo</i>	
Entropy-Mediated Patterning of Surfactant-Coated Nanoparticles and Surfaces	175
<i>Chetana Singh, Pradip K. Ghorai, Mark A. Horsch, Alicia M. Jackson, Francesco Stellacci, Sharon C. Glotzer</i>	
Depletion-Induced Directed Assembly of Two-Dimensional Building Blocks	176
<i>Derek A. Triplett, Kristen A. Fichthorn</i>	
Media Effect on Cdte Nanowire Growth: Mechanism of Self-Assembly, Ostwald Ripening, and Control of Nw Geometry.....	177
<i>George Daniel Lilly, Nicholas A. Kotov</i>	
Having Fun with Porous Nanowires.....	178
<i>Joseph Wang, Rawiwan Laocharoensuk, Jared Burdick, Samantha Meenach</i>	
4 Nm Nanowire Networks Of Bismuth Telluride Electrochemically Deposited Within Nanostructured Silica Films	179
<i>Michael P. Tate, Hugh W. Hillhouse</i>	
Self-Catalyzed Growth Of Defect-Free Indium Phosphide Nanowires On Silicon	181
<i>R. L. Woo, Y. Kobayashi, S. F. Cheng, L. Gao, T. Mallouk, R. F. Hicks</i>	

Template Free, Large Scale Synthesis Of Metallic Cobalt Nanowires	182
<i>Evagelos K. Athanassiou, Patrick Grossmann, Robert N. Grass, Wendelin J. Stark</i>	
Bulk Production of Metal Oxide Nanowires Using A Novel Microwave Plasma Reactor.....	184
<i>Vivekanand Kumar, Jeong H. Kim, Boris D. Chernomordik, Mahendra K. Sunkara</i>	
Dispersion, Brownian Motion, And Self-Assembly Of Germanium Nanowires.....	185
<i>Bennett Marshall, Doh C. Lee, Brian A. Korgel, Virginia A. Davis</i>	
3-D Electrically Interconnected Nanowire Networks Formed By Fluidic Diffusion Bonding.....	186
<i>Zhiyong Gu, Hongke Ye, Adam Bernfeld, Kenneth J. T. Livi, David H. Gracias</i>	
Molecular Dynamics Simulation Study Of Alloying Effect On Nanowire Mechanical Properties	187
<i>Subramanian Sankaranarayanan, Venkat R. Bhethanabotla, Babu Joseph</i>	
Molecular Simulations Of The Structural Evolution Of Benzenedithiolate Adsorbed On A Gold Nanowire Undergoing Stretch	189
<i>Qing Pu, Yongsheng Leng, Xiongce Zhao, Peter T. Cummings</i>	
Magnetically Assembled Multi-Segmented Nanowires.....	190
<i>Mangesh Ashok Bangar, Carlos M. Hangarter, B. Y. Yoo, Wilfred Chen, Ashok Mulchandani, N. V. Myung</i>	
Directed Assembly Of Carbon Nanotube Cantilevers Using Self-Aligned Copper Silicide Nanobeams	191
<i>Nitin Kumar, Omkar Parajuli, Jong-In Hahn</i>	
Tin Oxide And Niobium Pentoxide Nanowire Based Dye Sensitized Solar Cells.....	192
<i>Suresh Gubbala, Vivekanand Kumar, Uros Cvelbar, Mahendra K. Sunkara</i>	
Synthesis Of TiO₂ Nanowires For Dye-Sensitized Solar Cells	193
<i>Janice Boercker, Emil Enache-Pommer, Eray S. Aydil</i>	
Electron Transport And Recombination In ZnO Nanowire Dye-Sensitized Solar Cells.....	195
<i>Emil Enache-Pommer, Janice Boercker, Eray S. Aydil</i>	
Development Of Nanowire Arrays For High Efficiency Carrier Multiplication Based Photovoltaics.....	197
<i>Hugh W. Hillhouse, Vikrant N. Urade, Rakesh Agrawal</i>	
Erbium And Ytterbium Doped Yttrium Oxide Nanostructures For Optical Amplifier Application.....	198
<i>Yuanbing Mao, Jane P. Chang</i>	
Synthesis Of Transition Metal Oxide And III-Antimonide Nanowires	199
<i>Jyothish Thangala, Chandrashekhar Pendyala, Zhiqiang Chen, Alan Chin, Cun-Zheng Ning, Mahendra K. Sunkara</i>	