

- 4:50 **481.** Quantum dynamics of hydrogen interacting exohedrally with single-walled carbon nanotubes. **B. Poirier**
 5:30 Concluding Remarks.

Section E

Salt Palace Convention Center
250 F

Attosecond Science: The Next Frontier Intense Fields

S. Leone, *Organizer*

A. D. Bandrauk, *Organizer, Presiding*

- 1:30 **482.** Attosecond molecular science with IR pulses. **F. Legare**
 2:10 **483.** Ultrafast measurements of plasmon-field accelerated electrons in metal nanostructures. **P. M. Nagel**, T. Pfeifer, M. J. Abel, M. J. Bell, D. M. Neumark, S. R. Leone
 2:30 Concluding Remarks.

Section F

Salt Palace Convention Center
251 C

New Developments in Energy Conversion and Light-Harvesting Materials for Inorganic and Nanostructured Photovoltaics

J. M. Lupton and D. S. Ginger Jr., *Organizers*

D. V. Talapin, *Organizer, Presiding*

- 1:30 **484.** New semiconductor materials for high efficiency solar cells. **W. Walukiewicz**
 2:10 **485.** Solution processing of CIGS absorber layers using a hydrazine-based approach. **D. B. Mitzi**
 2:50 **486.** Withdrawn.
 3:10 Intermission.
 3:30 **487.** Designing nanowires for energy storage and photovoltaics. **Y. Cui**
 4:10 **488.** Phonon bottleneck effect in quantum dots. **A. Pandey**, P. Guyot-Sionnest
 4:30 **489.** Charge separation in hybrid structures of semiconductor nanocrystals. **A. L. Rogach**

POLY

Division of Polymer Chemistry

J. G. Linhardt, G. N. Tew, and K. L. Kiick, *Program Chairs*

OTHER SYMPOSIA OF INTEREST:

ACS Award in Applied Polymer Science: Symposium in Honor of Benny D. Freeman (see *PMSE*, Sun, Mon)

Cooperative Research Award Symposium in Honor of Professor Robert Waymouth and Dr. James Hedrick (see *PMSE*, Sun)

Degradable Polymers: From Synthesis to Nanotechnology (see *PMSE*, Tue)

Functional Polymer Nanocomposites for Energy Storage and Conversion (see *PMSE*, Mon, Tue)

Multiphase Polymer Materials: From Fundamentals to Applications (see *PMSE*, Sun, Mon, Tue, Wed, Thu)

Nanostructured Block Copolymer Materials

(see *PMSE*, Sun, Mon, Tue)

Novel Applications of Supramolecular Materials

(see *PMSE*, Thu)

Polymers for Microencapsulation and Coating Technologies

(see *PMSE*, Wed)

Detection and Monitoring of Engineered Nanoparticles in Environmental and Biological Systems

(see *COLL*, Sun)

Frontier Applications of Nanotechnology in Engineering Extracellular Matrices

(see *COLL*, Wed, Thu)

Frontiers in Nanoparticle and Nanoporous Materials

(see *COLL*, Sun, Mon, Tue, Wed, Thu)

Lipid Assemblies: Preparation, Characterization and Applications

(see *COLL*, Wed, Thu)

Polymeric Microcapsules: Theory, Experiment and Applications

(see *COLL*, Sun, Mon, Tue)

Structure and Function of Membranes, Proteins, and Lipids

(see *COLL*, Sun, Mon, Tue, Wed, Thu)

The Influence of Ions and Osmolytes on Aqueous Macromolecules

(see *COLL*, Mon, Tue)

Biomedical Applications of Polysaccharide-based Materials

(see *CELL*, Mon)

Protein Adhesives, Hydrogels, Films, Sponges, and Scaffolds

(see *CELL*, Tue)

Water Soluble Polymers from Cellulose: Materials and Applications

(see *CELL*, Thu)

Genetically Designed Molecular Materials

(see *NANO*, Sun, Mon, Tue)

ACS Award for Creative Invention: Symposium in Honor of Robert H. Grubbs

(see *ORGN*, Tue)

Material, Devices and Switches

(see *ORGN*, Sun)

Molecular Recognition and Self-Assembly

(see *ORGN*, Tue, Wed)

Peptides, Proteins and Amino Acids

(see *ORGN*, Tue)

Physical Organic Chemistry, Molecular Recognition, Self-Assembly and Biomolecules

(see *ORGN*, Tue)

Membranes for Fuel and Energy Applications

(see *FUEL*, Mon)

SUNDAY MORNING

Section A

Sheraton
Granary Room

Ion-Containing Polymers for New Technologies Fundamentals and Applications

Cosponsored by *PMSE*
 R. B. Moore, T. E. Long, and R. Colby, *Organizers*

S. M. Ramirez, *Presiding*

- 8:30 **1.** Synthesis of ion-containing polymers: New strategies and structures. **A. Mueller**
 9:10 **2.** Control of polymer properties via ionic interactions: An overview. **A. Eisenberg**

- 9:50 **3.** Unified morphological model for ionomers with ordered aggregate structures. **B. P. Grady**

- 10:15 **4.** Synthesis of functional ionenes for nonviral gene transfection. S. M. Ramirez, N. G. Moon, M. A. Lang, **T. E. Long**
 10:40 **5.** Crystalline component in fuel cell membranes. J. K. Park, **R. B. Moore**
 11:05 **6.** Efficient synthesis and properties of anion exchange membranes. **M. A. Hickner**, J. Yan

Section B

Sheraton
Seasons Ballroom South

Polymers and Carbon Nanotubes Tutorial on Carbon Nanotubes

Cosponsored by *COLL*, *I&EC*, *PHYS*, *PMSE*, and *NANO*

B. P. Grady, P. M. Ajayan, and R. Krishnamoorti, *Organizers*

W. T. Ford, *Organizer, Presiding*

- 8:30 **7.** Tutorial on the purity of single-walled carbon nanotubes: Relationship to chemistry, properties and applications. **R. C. Haddon**

- 9:10 **8.** Organic functionalization of carbon nanoforms. **M. Prato**
 9:50 **9.** Spectroscopic characterization of single-walled carbon nanotube samples. **R. B. Weisman**

- 10:30 Intermission.
 10:45 **10.** Single walled carbon nanotube reference materials. **K. B. Migler**, J. A. Fagan
 11:25 **11.** Commercial status of carbon nanotubes. **P. M. Ajayan**

Section C

Sheraton
Market Street Room

Undergraduate Research in Polymer Science

S. E. Morgan and S. Nazarenko, *Organizers*

- 8:30 **12.** Atomic force microscopy of high molecular weight thin film polymer blends compatibilized with triblock and graft copolymers. **E. M. Zimmerman**, D. A. Waldow

- 8:50 **13.** Hierarchical block copolymer microstructures as multiresponsive materials. **S. L. Young**, S. Chang, S. Singanameni, V. V. Tsukruk

- 9:10 **14.** Interactions between chitosan and selected anionic polymers for mucoadhesive drug delivery in the nasal cavity. **A. Cox**, R. Lochhead

- 9:30 **15.** Metal-organic biopolymers: Self-assembly and thermoplastic properties. **G. Escalera**, B. M. Porta, A. Metta, I. Rodriguez, D. Valles, J. C. Noveron

- 9:50 Intermission.
 10:05 **16.** Polymer modified gold/gadolinium nanoparticles for targeted multimodal imaging and photothermal treatment. **C.-C. G. Chang**, M. D. Rowe, S. G. Boyes

- 10:25 **17.** Proliferation of aortic adventitial fibroblasts on novel polyisobutylene-based thermoplastic elastomers. **L. Munoz-Robledo**, **S. Poroski**, M. Evancho-Chapman, S. Schmidt, J. E. Puskas

- 10:45 **18.** Protein resistant silicones prepared with branched PEO silanes. **B. M. Bailey**, R. Murthy, M. A. Grunlan

- 11:05 **19.** Nucleophilic aromatic substitution polymerization of 2,7-difluorothianthrene for the synthesis of novel poly(arylene sulfide)s. **M. J. Robb**, D. M. Knauss

- 11:25 **20.** The effects of pH on the polymerization of methylene green. **J. W. Breeden**, M. N. Germain, S. D. Minter

Section D

Sheraton
Executive Room B

Off the Beaten Path: Alternative Career Options for a Degree in Polymer Science

Cosponsored by *CEPA*

E. H. Martin and K. O. Havelka, *Organizers*

- 8:30 **21.** Beating a path to patents: A practitioner's perspective. **J. K. Pike**

- 9:00 **22.** Career opportunities for chemists and chemical engineers in technical service and market development roles. **J. Gavenonis**

- 9:30 **23.** Catalyzing an alternative career path. **J. L. Petoff**
 10:00 Intermission.

- 10:15 **24.** From polymer synthesis to open innovation transactions: A hybrid technical career. **C. Smith**

- 10:45 **25.** Publishing in polymer science. **S. Kalveram**

- 11:15 Panel Discussion: Career path experiences of polymer scientists.

Frontiers in Imaging Biological Nanostructures

Sponsored by *BIOL*, *COLL*, *PHYS*, *POLY*, and *NANO*[†]

Green Nanoscience Sponsored by *INOR*, *COLL*, *POLY*, and *NANO*

SUNDAY AFTERNOON

Section A

Sheraton
Granary Room

Ion-Containing Polymers for New Technologies

Emerging Technologies Cosponsored by *PMSE*
 R. B. Moore, T. E. Long, and R. Colby, *Organizers*

M. A. Hickner, *Presiding*

- 2:00 **26.** Tracking nucleic acid delivery with the help of lanthanide containing polymers. **J. M. Bryson**, K. M. Fichter, P. M. McLendon, T. M. Reineke

- 2:25 **27.** Ion-containing polyphosphazenes and their potential applications in life sciences. **A. K. Andrianov**

- 2:50 **28.** Synthesis of photocrosslinkable aliphatic based ammonium ionenes. **S. M. Ramirez**, M. A. Lang, S. R. Williams, T. E. Long

- 3:15 **29.** Ion-containing polymer-surfactant association for improved tissue compatibility. **R. M. Walters**, M. J. Fevola, H. Jerri, J. J. LiBrizzi, K. Martin

- 3:40 **30.** Control of morphology by counterion in fluorinated polymer/polyelectrolyte blends for fuel cell membranes. **S. Norvez**, C. M. Gibon, S. Tencé-Girault, J. T. Goldbach

- 4:05 **31.** Smooth high capacitance thin film dielectrics prepared from poly(styrene-*b*-ethylene oxide-*b*-styrene)/lithium perchlorate blends. **J. Chen**, C. D. Frisbie, F. S. Bates

- 4:30 **32.** Polyaniline nanofiber/silica aerogel composites with improved strength and sensor applications. **D. J. Boday**, D. A. Loy

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† Cooperative Cosponsorship

Section B

Sheraton
Seasons Ballroom South

Polymers and Carbon Nanotubes Dispersion and Functionalization
Cospponsored by COLL, I&EC, PHYS, PMSE, and NANO

W. T. Ford, B. P. Grady, P. M. Ajayan, and R. Krishnamoorti, *Organizers*

Y-P. Sun, *Presiding*

- 1:15 **33.** Metrology of single-walled carbon nanotube products manufactured in large scale. **D. E. Resasco**
- 1:45 **34.** Dispersion and exfoliation of graphite using surfactants. **J. N. Coleman**
- 2:15 **35.** Functionalization and patterning of single-walled carbon nanotubes using conjugated polyelectrolytes. **A. Adronov, F. Cheng, P. Imin**
- 2:45 **Interruption.**
- 3:00 **36.** Use of closeable cyclic peptides and other designed biomolecules for the noncovalent functionalization of carbon nanotubes. **G. R. Dieckmann, I. H. Musselman, S. O. Nielsen, E. J. Becraft, A. S. Klimentko, J. H. Nguyen**
- 3:20 **37.** Diameter separation of carbon nanotubes using helical assemblies of flavin mononucleotide. **S-Y. Ju, F. Papadimitrakopoulos**
- 3:50 **38.** Examining the livingness and nitroxide radical exchange of nitroxide mediated-radical polymerization from carbon nanotube surfaces. **S. M. Ramirez, D. Y. Sogah**
- 4:10 **39.** Importance of chain connectivity in the formation of noncovalent interactions between polymers and single-walled carbon nanotubes and its impact on polymer-SWNT dispersion. **D. Linton, B. C. Miller, H. Li, C. Feigerle, B. G. Sumpter, M. D. Dadmun**
- 4:30 **40.** How can the surfaces curvature of carbon nanotubes determine the adsorption of polymer chains? **B. Haidar, N. Durand, O. M**

Section C

Sheraton
Seasons Ballroom Three Seasons

Carl S. Marvel Creative Polymer Chemistry Award in Honor of Geoffrey Coates
Cospponsored by ORGN and PMSE

K. L. Kiick, *Organizer*

S. R. Turner, *Presiding*

- 1:15 **41.** Iptycenes in the design of new materials. **T. M. Swager**
- 1:40 **42.** Green coatings: Tailoring interactions of polymers with their environment. **C. K. Ober**
- 2:05 **43.** New advances in olefin block copolymers: From polydispersity effects on phase behavior to photonic polyethylenes. **P. D. Hustad, G. R. Marchand, E. Garcia-Melitt, P. L. Roberts, J. D. Weinhold**
- 2:30 **44.** Orthogonal chemistry for the synthesis of functionalized macromolecules. **C. J. Hawker**
- 2:55 **45.** A new method for controlling polymer microstructure. **C. W. Bielawski**
- 3:20 **46.** Synthesis of new renewable polymers from terpenes. **M. A. Hillmyer**
- 3:45 **47.** Mechanochemical reactions for mechanoresponsive materials. **J. S. Moore**
- 4:10 **48.** Catalysts for the synthesis of new polymer architectures. **G. W. Coates**

Frontiers in Imaging Biological Nanostructures Sponsored by BIOL, Cospponsored by ANYL, COLL, PHYS, POLY, and NANO²

Nanoscience: Characterization and Applications Sponsored by INOR, Cospponsored by COLL, POLY, and NANO

Nontraditional Careers in Chemistry Sponsored by YCC, Cospponsored by Chemical Information Careers Committee, CINF, CHAL, SOCED, CEPA, SCH², and POLY

SUNDAY EVENING

Section A

Salt Palace Convention Center
Hall 5

Excellence in Graduate Polymer Research
Cospponsored by PROF, SOCED, YCC, and PRES

H. N. Cheng, E. H. Martin, T. E. Long, and C. J. Ellison, *Organizers*

6:00-8:00

49. Understanding the role of glycosaminoglycans in cell surface binding of poly(glyco-amidoamine) DNA delivery vectors. **P. M. McLondon, E. M. Davis, T. M. Reineke**
50. Structural analysis of heterogeneity in spider dragline silk using stable isotope-labeled sequential peptides and solid-state NMR. **E. Yamaguchi**
51. Grafting of linear and branched PEO via siloxane tethers for enhanced protein resistance. **R. Murthy, C. E. Shell, B. M. Bailey, M. A. Grunlan**
52. Anionic synthesis of chain-end and in-chain, cyano-functionalized polystyrenes by hydrosilylation of allyl cyanide with silyl hydride-functionalized polystyrenes. **R. P. Quirk, J. E. Janoski, S. R. Chowdhury, C. Wesdemiotis, D. E. Dabney**
53. Conformational programmable polymers based on restricted rotation with atropisomer recognition motif. **Y. Zhang, K. D. Shimizu**
54. Crosslinking of reactive lyotropic liquid crystals for phase retention. **L. Sievens-Figueroa, C. A. Guymon**
55. Synthesis and directed magnetic assembly of ferromagnetic cobalt nanoparticles and cobalt oxide nanowires. **P. Y. Keng, J. Pyun**
56. Elaboration of octavinylsilsequioxane: A perfect nanobuilding block. **S. Sulaiman, A. Bhaskar, J. Zhang, R. Guda, T. Goodson III, R. M. Laine**
57. Pyrene functionalized hollow polymer capsules. **X. Liu, A. Basu**
58. Effects of surface modification of the filler on the impact toughness of polypropylene/CaCO₃ nanocomposites. **L. Yong, H. Chen, C-M. Chan, J. Wu**

Section B

Salt Palace Convention Center
Hall 5

General Papers
Polymer Synthesis and Characterization

D. Garcia, *Organizer*

6:00-8:00

59. Solution behavior of polystyrene-bound terpyridine complexes in nonpolar solvents. **I. M. Henderson, R. C. Hayward**
60. Effect of gamma radiation on fluoropolymers. **A. Contreras-Garcia, E. Bucio, F. Leon-C, C. J. Booth, P. E. Cassidy**
61. Online monitoring of the RAFT polymerization of styrene mediated by vinylbenzyl dithiobenzoate. **A. J. Heidenreich, J. E. Puskas, W. F. Reed, A. M. Alb**
62. Tracking UV-VIS footprints: Using PDA for polymer analysis. **J. C. Sanchez**
63. Solvent enhanced light scattering (SELS) for GPC. **J. C. Sanchez, W. Wong, C. Mirle, S. Daughtry**
64. Digitally encoded nanoscopic fibers prepared by electrospinning. **C. Huang, B. Lucas, K. Braeckmans, J. Demeester, S. De Smedt**

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

65. Reinforcement effect of alkali-hydrolyzed wheat gluten and shear-degraded wheat starch in carboxylated styrene-butadiene composites. **L. Jong**
66. Rheological behavior and morphology of polyhedral oligomeric silsesquioxane (POSS) epoxy nanocomposites. **S. Kar, J. S. Wiggins**
67. Viscoelastic properties of wheat gluten/thiolated poly(vinyl alcohol) aqueous solutions. **J. Dong, R. Parnas, A. D. Asandei**
68. Polystyrene with higher T_g prepared based on H-bond interactions. **B. Cheng, J. Agalia, B. Mao, H. Cheradame**
69. Microstructural analysis and physical properties of repeating sequence PLGA copolymers. **R. M. Stayschich, T. Y. Meyer**
70. Confocal Raman spectroscopy analysis of multilayer polymer films. **D. Garcia, E. Rondele**
71. End-group characterization of poly(O-benzyl-L-tyrosine) by NALDITM-TOF MS. **D. L. Pickel, J. M. Messman, N. Politakos, A. Avgeropoulos**
72. Impact of ionic strength on the adhesion characteristics of solid polymer-clay films. **E. A. Stefanescu, C. Stefanescu, I. I. Negulescu, W. H. Daly**
73. Robust self-assembly of highly ordered complex structures by controlled evaporation of confined microfluids. **Z. Lin, S. W. Hong, M. Byun**
74. Hollow nanostructures from self-assembled metallo block copolymers. **A. O. Moughton, K. Stubenrauch, R. K. O'Reilly**
75. Smart films obtained from block copolymers of various vinyl ethers: Primary structures of polymers and controlled surface responsiveness. **H. Tsujimoto, S. Kanaoka, S. Aoshima**
76. Self-assembling protein (ABH1 hydrophobin) from *Agaricus bisporus*, optimization of isolation and characterization. **L. Paslay, M. L. Harris, C. A. Harris, G. C. Cannon, S. Heinhorst, S. E. Morgan**
77. Hierarchically structured regioregular conjugated polymer via evaporative self-assembly. **Z. Lin, M. Byun, R. Laskowski, F. Qiu, M. Jeffries-El**
78. Synthesis and self-assembly of multiblock comb copolymers by ROMP and ATRP. **M. B. Runge, J. Yoo, N. B. Bowden**
79. Evaporative organization of hierarchically structured polymer blend rings. **Z. Lin, M. Byun, S. W. Hong, F. Qiu**
80. Di-isocyanate crosslinked silica aerogels with hexyl links incorporated into the underlying silica backbone. **S. L. Vivod, M. A. B. Meador, B. N. Nguyen, R. Perry**
81. Dispersion characteristics of polyhedral oligomeric silsesquioxane nanostructured chemicals into a bisphenol-A epichlorohydrin/3,3'-DDS epoxy system. **R. D. Cook, S. Kar, Y. Wei, R. Misra, J. S. Wiggins, S. E. Morgan**
82. Preparation of porous carbon microspheres with thermosetting resin. **R. Matsushima, Y. Takizawa, M. Suzuki, H. Tomosaka, M. Ota**
83. Synthesis of controlled functional nanoparticles. **P. Driva, J. Mays, D. Baskaran, V. Urban, G. Sakellariou**
84. Well defined base layers for clicking polymer brushes. **J. P. Hinestrosa, B. Lokitz, J. M. Messman, J. Anknner, S. M. Kilbey II**
85. Synthesis and application for electrolyte membrane of multiblock polysulfone derivatives with sulfonic acid groups in the main chain. **Y. Teraji, K. Fukagawa, T. Hayakawa, M-A. Kakimoto, S. Suehiro, K. Terada, S-I. Shimada**
86. Development of a one pot hydrophobic modification of chitosan toward the development of a ferrocene-mediated laccase biocathode. **J. Wildrick, P. A. Jelliss, S. D. Minter**
87. One-pot synthesis of stereoregular ω-chain end functional star-shaped poly(lactide)s. **M. J. Stanford, A. P. Dove**
88. Thermodynamics of complementary molecular interaction of sodium carboxymethylcellulose with natural and synthetic polyelectrolytes. **R. S. Tillaev, K. I. Akbarov, B. Umarov, N. Zokirova**
89. Synthesis and characterization of flexible fluorinated multiblock SPTES-based copolymers as proton exchange membranes. **Z. Bai, B. E. Taylor, S. Juhl, L. F. Drummy, M. Durstock, T. Dang**
90. Tailoring the degree of branching in hyperbranched poly(arylene ether sulfone)s prepared via an A₂ + BB'B' approach. **S. Raghavapuram, Z. Yu, M. Simons, E. Fossum**
91. Synthesis of di(3-azido-2-hydroxypropyl) ether of bisphenol-A under mild aqueous conditions. **I. E. Gorman, A. J. D. Magenau, R. L. Willer, R. F. Storey**
92. Synthesis and characterization of primary amine omega-functionalized polystyrene. **J. M. Messman, D. L. Pickel, D. W. Uhrig, J. W. Mays**
93. 1-Butyl-3-methylimidazolium acetate as a solvent media for functionalization of chitosan. **C. Stefanescu, W. H. Daly, I. I. Negulescu**
94. Asymmetric polymerization of maleimide bearing amino acid derivative and optical resolution ability of their polymers. **T. Oishi, K. Yamabuki, K. Onimura**
95. Synthesis and characterization of poly 2-vinyl-4,4-dimethylazlactone (PVDMA) brushes. **B. Lokitz, J. M. Messman, J. P. Hinestrosa, J. Anknner, S. M. Kilbey II**
96. Photopolymerization on peptide microtube surfaces. **E. M. Smoak, I. A. Banerjee**
97. Crosslinking reaction of amorphous aliphatic diacetylene-containing polymers. **T. Ogawa, M. F. Beristain, M. E. Hernandez-Rojas**
98. Oligomerization of diphenylbutadiene by gamma ray irradiation in molten state. **M. F. Beristain, T. Ogawa, Y. Maekawa, E. Mufoz**
99. Controlled cationic copolymerization of benzaldehyde or its derivatives with vinyl ethers in the presence of an added base. **Y. Ishido, R. Aburaki, S. Kanaoka, S. Aoshima**
100. Living cationic polymerization of styrene derivatives using SnCl₄/EtAlCl₂ in the presence of a Lewis base. **J. Ashida, H. Yamamoto, M. Yonezumi, S. Kanaoka, S. Aoshima**
101. Heterogeneous living cationic polymerization using heteropoly acids in the presence of an added base. **Y. Matsuo, S. Kanaoka, S. Aoshima**
102. Synthesis and architectural analysis of arborescent (dendritic) polystyrenes. **A. J. Heidenreich, J. E. Puskas**
103. Synthesis and characterization of N-vinyl triazoles based monomer and polymers. **H. B. Nulwala, K. Takizawa, C. J. Hawker**
104. Novel branched poly(ethylene glycol) derivatives for bioconjugate. **Y. Yamamoto, H. Yoshioka, T. Takehana, S. Yoshimura, K-I. Nakamoto, K. Kubo**
105. Effect of monomer geometry on extent of cyclization in polycondensation reactions. **A. M. Elsen, E. Fossum**
106. Highly active and recyclable catalytic system for CO₂/(propylene oxide) copolymerization. **S. Sujith, A. Cyriac, J. Seong, B. Y. Lee**
107. Crosslinking reaction of poly(vinyl alcohol) with glyoxal. **Y. Zhang, P. Zhu, D. Edgren**
108. A mild and efficient route for the conversion of thiol to aldehyde function in glucosaminoglycans. **O. P. Varghese, D. A. Ossipow, J. Hilborn**
109. Isocyanate, thiol, epoxide and hydroxy functionalized silane coated alumina/wheat gluten blends. **S. Hemsri, A. P. Simpson, R. Parnas, A. D. Asandei**
110. Star-shaped poly(acrylic acids) via atom transfer radical polymerization for improved dental cements. **J. Zhao, D. Xie**
111. Comparing epoxide, aldehyde, halide and peroxide initiators for the Cp₂TiCl₂-catalyzed styrene living radical polymerization. **A. D. Asandei, Y. Chen, G. Saha, I. W. Moran**
112. Carbonyl initiated Cp₂TiCl₂-catalyzed controlled radical polymerization of isoprene. **A. D. Asandei, A. Ulumide, H. S. Yu, C. P. Simpson, M. Gilbert**
113. Synthesis and characterization of thermostable poly(N-isopropylacrylamide)-polymeric soybean oil conjugates. **A. Aili, B. Hazer**
114. Self condensing polymerization of a novel macromonomer initiator based on polyethylene glycol via atom transfer radical polymerization. **A. Aili, B. Hazer**
115. Synthesis of new phenyl-ethynyl end-capped poly-p-phenylene high-performance composite resins. **M. E. Wright, E. T. Abernethy, J. Cash, A. J. Guenther, G. Yandek**

116. Synthesis and properties of novel poly(9,9-dihexylfluorene-2,7-diyl-co-9,9-dihexylfluorene-3,6-diyl)s and their model oligomers. **N. Fomina**, T. E. Hogen-Esch
117. Doping of polyaniline by carboxylic acid- and sulfonic acid-terminated poly(etherketone). **S.-W. Kang**, I. Y. Jeon, L. S. Tan, J.-B. Baek
118. Purification of carbon nanopowders and diamond nanopowders in polyphosphoric acid/phosphorous pentoxide. **J.-K. Lim**, L. S. Tan, J.-B. Baek
119. Efficient thermal transformation of poly(methylsilene) to SiC ceramics via crosslinking process catalyzed by group 4 and 6 complexes. **H.-G. Woo**, M.-H. Kim, K.-S. Yang, M.-S. Cho, Y.-C. Ko, H. Li
120. Intermediary layer crosslinked micelles from photocrosslinkable amphiphilic ABC triblock copolymers. **J. S. Kim**, H. J. Jeon, M. S. Park, Y. C. You, S. H. Kim, J. H. Youk
121. Reduced excimer formation in polyfluorenes by introducing coil-like poly(penta(ethylene glycol) methyl ether methacrylate) block segments. **Y. S. Ko**, H. S. Kim, H. S. Park, H. J. Kim, M. S. Kim, K. B. Kim, J. H. Oh, Y. K. Kwon
122. Immobilization of titanium complex with bis(phenoxy-imine) ligands on silica for the preparation of ultrahigh molecular weight polyethylene. **J. H. Woo**, Y.-S. Ha, Y.-J. Shin, S. C. Hong
123. Enzymatic surface modification of polyester fabrics. **H. Li**, J. Gong, J. Zhang
124. Effect of particle size on self-organized film-formation of emulsifier-free fluorinated polyacrylates latex blends. **Y. Chen**, H. Zhou
125. Novel pH-sensitive and freeze-thawed carboxymethyl chitosan/poly(vinyl alcohol) blending hydrogel for protein delivery. **Y. Du**, Y. Li
126. Synthesis and thermal behaviors of side-chain liquid crystalline poly[1-(((4-methoxyazobenzene-4'-oxy)alkyl)thio)-2,3-epithiopropene]. **C. He**, **C. Zhang**
127. Effect of sequence distribution of PES/PEES copolymers on excimer formation in solution. **X.-M. Zhou Sr.**
128. Copolymerization of 5,6-dihydrodicyclopentadiene and ethylene. **S. J. Na**, J. Yoo, B. Y. Lee
129. Binding constant of inclusion association between pyrene and beta-cyclodextrin grafted to poly(acrylic acid) determined by fluorescence spectroscopy. **P. Liu**, L. Li, H. Ke, **X. Guo**

Section C

Salt Palace Convention Center
Hall 5

Ion-Containing Polymers for New Technologies

R. B. Moore, T. E. Long, and R. H. Colby, *Organizers*

6:00–8:00

130. Proton conducting sulfonated poly(styrene-*b*-ethylene/butylene-*b*-styrene)/silicated nanocomposite membranes as models for polymer electrolyte membranes. **H. Chen**, K. A. Mauritz
131. Sulfonated polyarylenes via Friedel-Crafts catalysis: Synthesis and characterization. **S. M. Budy**, D. A. Loy

Section D

Salt Palace Convention Center
Hall 5

Undergraduate Research in Polymer Science

S. E. Morgan and S. Nazarenko, *Organizers*

6:00–8:00

132. Clay aerogel supported metallic nanoparticles for the purpose of liquid and gas phase hydrogenation. **J. J. Griebel**, M. D. Gawnryla, D. A. Schiraldi

‡ Cooperative Cosponsorship

133. Controlled free radical polymerization of triethylamine styrene sulfonate. **K. L. Pollock**, K. A. Cavicchi
134. Creating a library of complex patterns of Au nanostructures via harnessing the elastic instability of a single PDMS membrane. **J. C. Reed**, Y. Zhang, S. Yang
135. Nucleophilic aromatic substitution behavior of 3,5-difluorobenzophenone: Synthesis of poly(arylene ether)s with pendant benzoyl groups. **D. van Beek**, E. Fossum
136. Preparation of polymersomes from ABA triblock polymers for biodetection applications. **S. A. Sullivan**, B. Yuan, S. Heinhorst, G. C. Cannon, S. E. Morgan
137. Polymers containing π -binding pendant substituents for association to single walled carbon nanotubes. **A. M. Savage**, R. M. Walczak, M. Ertas, R. K. Das, S. Vasilyeva, M. Craps, B. Liu, E. M. van der Aa, A. G. Rinzler, J. R. Reynolds
138. Polymer encapsulated green fluorescent protein. **I. Lee**, A. P. Platt, S. L. Goh, Z. C. Dinu, J. Dordick
139. Production of the FluA(Δ 1-160) deletion mutant for use in biosensor applications. **L. M. Harris**, G. C. Cannon, S. Heinhorst, S. E. Morgan
140. Synthesis and aggregation studies of PEG-peptide block copolymers. **J. R. Taft**, K. E. Rutledge, A. P. Platt, S. L. Goh

MONDAY MORNING

Section A

Sheraton
Seasons Ballroom Three Seasons

ACS Award in Polymer Chemistry: Symposium in Honor of Takuzo Aida

G. N. Tew, *Organizer*S. I. Stupp, E. W. Meijer, and D. Tirrell, *Organizers, Presiding*

- 8:30 141. Molecular design of functional nanostructures. **S. Hecht**
- 9:00 142. Aqueous assembly of amphiphilic rods into dynamic nanostructures. **M. Lee**
- 9:30 143. Chemiresistive polymers and materials for chemical sensors. **T. M. Swager**
- 10:00 144. Complex nanostructures for imaging and therapeutic delivery in the diagnosis and treatment of high-grade gliomas in children. **W. Du**, A. M. Nyström, R. Shrestha, S. Taylor, Z. Xu, S. Stewart, J. Leonard, **K. L. Wooley**
- 10:30 145. Harnessing multiple self-assembly processes for the fabrication of complex nanostructures. **C. J. Hawker**, G. H. Fredrickson, E. J. Kramer, C. Tang, M. D. Dimitriou
- 11:00 146. Precision radical polymerization toward new functional materials and beyond. **M. Sawamoto**, T. Terashima, M. Ouchi
- 11:30 147. Controlling macromolecular heterogeneity by atom transfer radical polymerization. **K. Matyjaszewski**

Section B

Sheraton
Seasons Ballroom South

Polymers and Carbon Nanotubes Processing of Composites Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

W. T. Ford, P. M. Ajayan, and R. Krishnamoorti, *Organizers*B. P. Grady, *Organizer, Presiding*

- 8:30 148. Properties of carbon nanotube fibres and their composites. **V. Juan**, M. Raphael, **A. H. Windle**
- 9:00 149. High-performance polymer/carbon nanotube composite fibers. **M. L. Minus**, H. G. Chae, S. Jagannathan, Y. H. Choi, R. Jain, Y. Liu, E. Ford, **S. Kumar**
- 9:30 150. Electrospinning of polyurethane nanofibers containing aligned multiwalled carbon nanotubes. **B. J. Roach**, M. T. Hunley, S. M. Ramirez, T. E. Long

- 9:50 151. Molecular dynamics simulations of nanocomposites comprised of single-walled carbon nanotubes in various polymer environments. **M. A. Pasquini**, S. S. Tallury
- 10:10 Intermission.
- 10:25 152. Melt processed polymer-carbon nanotube composites as materials for liquid sensing applications. **P. Pötschke**, T. Villmow, T. Andres, K. Kobashi, R. Rentenberger, H. Brüning, D. Fischer, L. Häussler
- 10:55 153. Dispersion of carbon nanotubes in epoxy through exfoliated nanoplatelets. **D. Sun**, **H.-J. Sue**
- 11:15 154. Comparison of epoxy composites containing covalently and noncovalently polyethyleneimine-functionalized carbon nanotubes. **L. Liu**, **K. C. Etika**, K.-S. Liao, D. Bergbreiter, J. C. Grunlan, L. Hess
- 11:35 155. Damping capacity in carbon nanotubes-epoxy elastomers. **C. Uzunpinar**, M. L. Auad, Y. Gowayed, M. A. Mosiewicz, R. Williams

Section C

Sheraton
Executive Room B

Excellence in Graduate Polymer Research Cosponsored by PROF, SOCED, YCC, and PRES

E. H. Martin and C. J. Ellison, *Organizers*T. E. Long and H. N. Cheng, *Organizers, Presiding*

8:30 Introductory Remarks.

- 8:35 156. Polynorborenes prepared by pulsed-addition ring-opening metathesis polymerization. **J. B. Matson**, S. C. Virgil, R. H. Grubbs
- 9:00 157. Kinetic and mechanistic studies of N-heterocyclic carbene-mediated zwitterionic polymerization of cyclic esters. **E. J. Shin**, W. Jeong, D. A. Culkun, J. L. Hedrick, R. M. Waymouth
- 9:25 158. Site-isolation of polymer bound catalysts from small, ionic molecules and their use in one-pot cascade reactions using PDMS membranes. **A. L. Miller II**, N. B. Bowden
- 9:50 159. Sulfonium ion adducts from quasiliving polyisobutylene and alkyl mono- or di-sulfides. **D. Morgan**, C. Stokes, R. F. Storey
- 10:15 Intermission.
- 10:30 160. Concurrent and/or sequential ATRP and RAFT polymerization: Taking the best of each world. **R. Nicolay**, K. Matyjaszewski
- 10:55 161. Construction of degradable end-linked polymer networks using ATRP and click chemistry. **J. A. Johnson**, J. T. Koberstein, N. J. Turro
- 11:20 162. Construction of functionalizable, crosslinked nanostructures. **G. Sun**, N. S. Lee, W. L. Neumann, J. N. Freskos, J. J. Shieh, R. B. Dorchow, K. L. Wooley

Section D

Sheraton
Market Street Room

General Papers Polymer Synthesis and Applications

D. Garcia, *Organizer*A. C. Greene, *Organizer, Presiding*

- 8:00 163. Synthesis of cyclic polymers via ring-expansion metathesis polymerization. **A. J. Boydston**, R. H. Grubbs
- 8:20 164. Reactivity of allyl pentosides in UV-initiated free radical copolymerization with acceptor monomers. **L. Pichavant**, C. Guillermain, S. Duchiron, **X. Coqueret**
- 8:40 165. Synthesis of alkoxyamines bearing an *N*-phenyl moiety for use in nitroxide-mediated polymerization. **A. C. Greene**, R. B. Grubbs

- 9:00 166. Synthesis of an ester-functional alkoxyamine: Polymerization efficacy and nitroxide fidelity studies. **A. C. Greene**, R. B. Grubbs
- 9:20 167. Synthesis of poly(methyl methacrylate)-block-poly(tetrahydrofuran) through photoliving radical polymerization by 2,2,6,6-tetramethylpiperidine-1-oxyl supported on a polymer chain end. **E. Yoshida**
- 9:40 Intermission.
- 9:50 168. Covalent multifunctionalization of copolymers. **S. K. Yang**, M. Weck
- 10:10 169. Dendrimers and hyperbranched polymers based on 2,2-bis(hydroxymethyl)propionic acid and their potential application in noncovalent interaction. **E. Zelenitsova**, D. Appelhans, H. Komber, B. Voit
- 10:30 170. Linear-hyperbranched block copolymers: A progress report. **F. Wurm**, H. Frey
- 10:50 171. Modular covalent multifunctionalization of hyaluronic acid for the production of biomimetic hydrogels. **D. A. Ossipov**, O. P. Varghese, J. G. Hilborn
- 11:10 172. Synthesis, characterization, and antimicrobial properties of graft copolymers containing blocks of biocidal moieties. **S. Alam**, B. J. Chisholm
- 11:30 173. Well-defined multifunctional fluorocopolymers having both amphiphilic structure and reactive sites. **J. Ma**, C. Cheng, K. L. Wooley

Applications in Nanoscience Gold Particles and Surfaces Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

MONDAY AFTERNOON

Section A

Sheraton
Seasons Ballroom Three Seasons

ACS Award in Polymer Chemistry: Symposium in Honor of Takuzo Aida

G. N. Tew, *Organizer*E. W. Meijer, D. Tirrell, and S. I. Stupp, *Organizers, Presiding*

- 1:00 174. Structure control of polysaccharide derivatives for efficient resolution of enantiomers. **Y. Okamoto**
- 1:30 175. Supramolecular assemblies of helical polymers and oligomers. **E. Yashima**
- 2:00 176. The molecular structure of helical supramolecular dendrimers. **V. Percec**
- 2:30 177. Materials for lithographic patterning. **H. Ito**
- 3:00 178. Reinterpreting the genetic code: Implications for macromolecular chemistry. **D. A. Tirrell**
- 3:30 179. Amplification of chirality in helical supramolecular polymers. **E. W. Meijer**
- 4:00 180. Synergistic self-assembly of small molecules, polymers, and inorganics. **S. I. Stupp**
- 4:30 181. Award Address (ACS Award in Polymer Chemistry, sponsored by Exxon-Mobil Chemical Company). Molecular programming for advanced polymeric and supramolecular materials. **T. Aida**

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Section B

Sheraton
Seasons Ballroom South

Polymers and Carbon Nanotubes Properties of Composites Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

W. T. Ford, B. P. Grady, and P. M. Ajayan, *Organizers*

R. Krishnamoorti, *Organizer, Presiding*

- 1:00 182.** Tailoring carbon nanotube microstructure through noncovalent interactions. **J. C. Grunlan**
- 1:20 183.** Nanotube and nanocomposite mechanics: A guide to the perplexed. **H. D. Wagner, X. Sui**
- 1:50 184.** Evaluation of interfacial load transfer in carbon nanotube composites using polarized Raman spectroscopy. **J. Bull, R. Duncan, P. M. Ajayan, L. S. Schadler**
- 2:20 185.** Effect of single-walled carbon nanotubes (SWCNTs) on glass transition behavior. **B. P. Grady, W. T. Ford, A. Paul**
- 2:40 186.** Polymeric/carbon nanocomposites as thermal conductive materials. **Y.-P. Sun**
- 3:10 187.** Local electric field distribution in electromechanical polymer nanocomposites. **R. A. Vaia, A. T. Sellinger, H. Koerner, Z. Ounaies, R. Krishnamoorti**

Section C

Sheraton
Executive Room B

Excellence in Graduate Polymer Research Cosponsored by PROF, SOCED, YCC, and PRES

H. N. Cheng and T. E. Long, *Organizers*

C. J. Ellison and E. H. Martin, *Organizers, Presiding*

- 1:15** Introductory Remarks.
- 1:20** Recognition of Poster Presenters.
- 1:30 188.** Architecture effects on multivalent binding by helical polypeptide-based glycopolymers. **S. Liu, M. Bergström, S. Ohlson, K. L. Kiick**
- 1:55 189.** Silica-poly(benzyl-L-glutamate) core-shell particles of controlled shell content. **E. Soto-Cantu, P. S. Russo**
- 2:20 190.** Neutron scattering analysis of the dynamics and structure of semiflexible, self-assembled peptide chain networks. **M. C. Branco, D. J. Pochan, J. P. Schneider, N. Wagner**
- 2:45 191.** Polymerization for signal amplification of antibody-based biodetection. **H. J. Avens, C. N. Bowman**
- 3:10** Intermission.
- 3:25 192.** Imprint lithography based hydrogel particles and the effect of shape and size on biodistribution. **K. P. Herlthy, T. J. Merkel, J. Nunes, C. L. Brannen, J. M. DeSimone**
- 3:50 193.** Novel thieno-[3,4-b]thiophene semiconducting polymers for high performance solar cells. **Y. Liang, D. Feng, L. Yu**
- 4:15 194.** High gas barrier from confined crystallization of polyethylene oxide in nanolayer assemblies. **H. Wang, J. K. Keum, A. Hiltner, E. Baer, B. D. Freeman**
- 4:40** Concluding Remarks.
- Bruce E. Bursten**, ACS Immediate Past President.
- 4:50** Networking Reception.

Section D

Sheraton
Market Street Room

Active and Responsive Surfaces Polymer Brushes and Thin Films Cosponsored by PMSE[†]

W. T. S. Huck and R. C. Hayward, *Organizers, Presiding*

- 1:25** Introductory Remarks.
- 1:30 195.** Adaptive and switchable polymer brushes: Control of protein adsorption and liquid separation. **M. Stamm**

- 2:00 196.** Directed single polymer diffusion along surface energy gradients. **P. Burgois, Z. Zhang, R. Golestanian, G. J. Leggett, M. Geoghegan**
- 2:30 197.** Design, development and characterization of responsive surfaces. **J. Baghdachi, H. Perez**
- 2:50 198.** Fabrication of novel polymer brush microstructures using microcontact printing as a tool. **T. Chen, S. Zauscher**
- 3:10** Intermission.
- 3:20 199.** Smart surfaces with switchable wettability. **K. Cho, H. S. Lim**
- 3:50 200.** Environmentally-responsive nanoporous colloidal films. **O. A. Schepelina, I. Zharov**
- 4:10 201.** Single molecule tracking as a probe of free volume transitions in polymer brushes grafted by atom transfer radical polymerization. **P. W. Bohn, L. Elliott**
- 4:40 202.** Thickness-dependent properties of polyzwitterionic brushes. **N. Cheng, A. A. Brown, O. Azzaroni, W. T. S. Huck**

Applications in Nanoscience

Films and Surfaces Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

Frontiers in Imaging Biological

Nanostructures Sponsored by BIOL, Cosponsored by ANYL, COLL, PHYS, POLY, and NANO[‡]

Health and Safety Concerns of Polymeric Nanomaterials Sponsored by CHAS, Cosponsored by POLY[†] and NANO

Nanoscience: Characterization and Applications

Energy and Magnetism Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

Undergraduate Research Poster Session: Polymer Chemistry Sponsored by CHED, Cosponsored by PMSE, POLY, and SOCED

MONDAY EVENING

Section A

Salt Palace Convention Center
Hall 5

Sci-Mix

G. N. Tew, K. L. Kiick, and J. G. Linhardt, *Organizers*

- 8:00-10:00**
49, 51, 53, 55, 62, 64, 72, 76-78, 88-89, 92, 96, 130-131. See previous listings.
262-263, 271, 274, 276, 278-280, 284, 295-297, 299, 305. See subsequent listings.

TUESDAY MORNING

Section A

Sheraton
Granary Room

Earle B. Barnes Award for Leadership in Chemical Research Management: Symposium in Honor of Gregg A. Zank

D. Katsoulis and G. Burns, *Presiding*

- 8:00** Introductory Remarks.
- 8:05 203.** Design, syntheses and applications of organopolysiloxane precursors to advanced ceramic materials. **L. G. Snead, M. Guron, X. Wei, M. J. Pender, K. M. Forsthoefel, U. Kusari**
- 8:40 204.** Molecular engineering applications in the growth of SiC-based thin films by chemical vapor deposition. **M. Loboda**
- 9:00 205.** New chemical transformations involving transition metal-silicon systems and applications to hydrosilylation. **T. D. Tilley**
- 9:35 206.** Monocrystalline silicon: Using an old material in new ways. **J. A. Rogers**
- 10:10** Intermission.
- 10:20 207.** Organosilanes as synthons for constructing unconventional and printable organic, organometallic, and inorganic electronic circuitry. **T. J. Marks**

- 10:55 208.** Siloxanes and silicon for photonic applications. **J. V. Degroot Jr.**
- 11:15 209.** Organometallic perspectives on hydrogen processing. **T. B. Rauchfuss**
- 11:50 210. Award Address**
(Earle B. Barnes Award for Leadership in Chemical Research Management, sponsored by The Dow Chemical Company). Seeing around the corner: Lessons learned in leading research. **G. A. Zank**

Section B

Sheraton
Seasons Ballroom South

Polymers and Carbon Nanotubes Applications Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

W. T. Ford, B. P. Grady, and R. Krishnamoorti, *Organizers*

P. M. Ajayan, *Organizer, Presiding*

- 8:30 211.** Using "sticky polymers" to improve SWNT thin film electrochromic and charge storage devices. **R. M. Walczak, A. M. Savage, S. Vasilyeva, M. Ertas, R. K. Das, T. T. Steckler, M. Craps, E. Donoghue, B. Liu, E. M. van der Aa, A. G. Rinzler, J. R. Reynolds**
- 8:50 212.** Carbon nanotube-polyfluorene composites for high performance organic displays. **D. Carroll**
- 9:20 213.** Conjugated polymer and carbon nanotube dispersion forming lyotropic liquid crystalline phase and transparent electrodes. **Z. Bao, H. Lee, W. You, S. Hellstrom, S. Barman, M. LeMieux**
- 9:40 214.** Functionalization of carbon nanotubes for multifunctional applications. **D. Chang, L. Ding, L. Dai**
- 10:10** Intermission.
- 10:25 215.** Selective nitric oxide optical sensor based on single-walled carbon nanotube-polymer hybrid. **J.-H. Kim, D. A. Heller, H. Jin, M. S. Strano**
- 10:45 216.** Carbon nanotubes composites made by the layer-by-layer assembly: From ultrastrong materials to stellar cells and devices for neural interface. **N. A. Kotov, B. S. Shim, J. Zhu**
- 11:15 217.** Gecko-inspired carbon nanotube-based adhesives. **S. Sethi, L. Ge, A. Goyal, P. M. Ajayan, A. Dhinojwala**
- 11:45 218.** Carbon nanostructures for applications in biopolymer nanocomposites: Functionalization strategies. **M. J. Sobkowitz, J. R. Dorgan, K. W. Gneshin, A. M. Herring, J. T. Mckinnon**

Section C

Sheraton
Executive Room B

Polymers for Photonics and Optoelectronics Multidimensional Patterning Cosponsored by PMSE and NANO

P. V. Braun, *Organizer*

G. G. Malliaras, *Organizer, Presiding*

- 9:00 219.** Tutorial: Patterning of polymers in 3-D for photonics and optoelectronics. **P. V. Braun**
- 9:45 220.** Photonic polyethylene from self-assembled mesophases of polydisperse olefin block copolymers. **P. L. Roberts, P. D. Hustad, B. G. Landes, L. Liu, G. R. Marchand, E. Garcia-Melitin, J. D. Weinhold**

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

- 10:05 221.** Polycyclohexylsilane as a printable precursor to silicon for photovoltaics. **R. M. Laine, D. Nielsen, S. Sulaiman**
- 10:25** Intermission.
- 10:40 222.** Conformal phase mask lithography for 3-D photonic crystals. **J. A. Rogers**
- 11:10 223.** Fabrication of 3-D silica-like structures with high fidelity through interference lithography of epoxy functionalized polyhedral oligomeric silsesquioxanes. **Y. Xu, X. Zhu, S. Yang**
- 11:30 224.** Orthogonal processing for organic electronics. **C. K. Ober, J. K. Lee, A. A. Zakhidov, H. H. Fong, P. G. Taylor, J. DeFranco, H. S. Hwang, M. Chatzichristidi, A. B. Holmes, G. G. Malliaras**

Section D

Sheraton
Market Street Room

Active and Responsive Surfaces Polymer Brushes and Thin Films Cosponsored by PMSE[†]

R. C. Hayward and W. T. S. Huck, *Organizers*

R. Toomey, *Presiding*

- 8:30 225.** Design rules for thermally responsive polymer brushes. **D. Leckband, K. Plunkett, X. Zhu, F. M. Winnik, J. S. Moore**
- 9:00 226.** Collapse transition of homogeneous and nanopatterned thermoresponsive polymer brushes. **A. M. Jonas**
- 9:30 227.** Synthesis of responsive surfaces by covalent layer-by-layer assembly. **D. Bergbreiter, J. D. Batteas, H. Fu, A. Wan, K.-S. Liao**
- 9:50** Intermission.
- 10:00 229.** Volume-phase transitions in responsive polymer networks and implications for surface-confined structures. **R. Toomey, A. Vidyasagar, S. DuPont**
- 10:30 230.** Precision engineered control of biomolecules at interfaces by polymer brushes. **A. Chilkoti**
- 11:00 231.** Stimuli responsive surface segregation of well-defined end functionalized polymers. **L. R. Hutchings, R. L. Thompson**
- 11:20 232.** Nanoengineered self-segregating additives for reactive coatings. **A. M. Rawlett, G. Martin, J. A. Orlicki, J. J. LaScala, N. E. Zander, J. D. Demaree, W. E. Kosik, K. Andrews, M. Baranoski, N. Rice, L. Kagumba, A. Giaya**

Health and Safety Concerns of Polymeric Nanomaterials Sponsored by CHAS, Cosponsored by POLY[†] and NANO

Nanoscience: Characterization and Applications Biological and Biomedical Applications Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

TUESDAY AFTERNOON

Section A

Sheraton
Granary Room

Polymerization in Nanostructured and Nanocomposite Systems New Frontiers in Nanotechnology Cosponsored by PMSE and NANO

C. A. Guymon and C. N. Bowman, *Organizers*

D. J. Broer and D. L. Gin, *Presiding*

- 1:30 233.** Nanopatterned thiol-ene substrates using step and flash imprint lithography. **C. N. Bowman, V. S. Khire**
- 2:00 234.** Silica aerogel polymer nanocomposites using ATRP from surface bound initiators. **D. J. Boday, P. Y. Keng, J. Pyun, D. A. Loy**
- 2:25 235.** Grafting of polyacrylonitrile from surfaces of large-pore ordered mesoporous silicas using atom transfer radical polymerization. **M. Kruk, B. Dufour, K. Matyjaszewski, L. Cao**

- 2:50 Intermission.
- 3:10 **236.** Nanostructure in alkyl/acrylate materials produced via hybrid miniemulsion polymerization. **F. J. Schork**, J. Guo, J. G. Tsavalas
- 3:40 **237.** Reaction mechanism to morphology control of polyaniline nanomaterials. **Z. Ding**, D. Yang, S. J. Obrey, R. P. Currier, Y. Zhao
- 4:05 **238.** Preparation of nanostructured inclusion complexes in amylose-forming polymerization. **J.-I. Kadokawa**, Y. Kaneko
- 4:30 **239.** Mechanical instabilities in porous elastoplastic solids. **S. Singamaneni**, K. Bertoldi, S. Chang, J.-H. Jang, M. Boyce, E. L. Thomas, V. V. Tsukruk

Section B

Sheraton
Seasons Ballroom South

Nanostructured Materials for Future Therapy Chemistry and Structures Cosponsored by PMSE, BTEC, and NANO

Y. Yeo, *Organizer*

S. Lin-Gibson and X. Jia, *Organizers, Presiding*

- 1:30 Introductory Remarks.
- 1:35 **240.** Supramolecular biomaterials: A modular approach to bioactivity. **E. W. Meijer**
- 2:05 **241.** Micron-scale features for impacting biological reaction. **B. Ratner**
- 2:35 **242.** Monitoring of elongation and orientation of osteoblast cells directed by anisotropic nanopatterns. J. Sun, Y. Ding, N. J. Lin, H. W. Ro, C. Soles, M. T. Cicerone, **S. Lin-Gibson**
- 2:55 Intermission.
- 3:15 **243.** Antibacterial peptide-hydrogels. **J. P. Schneider**
- 3:45 **244.** Silver-loaded shell crosslinked nanoparticles for antimicrobial applications. Y. Li, J. B. Taylor, M. J. Panzner, Z. Li, K. Zhang, Y. Lin, C. Cannon, W. J. Youngs, K. L. Woolley
- 4:05 **245.** Antimicrobial activity of thin films containing cetyltrimethylammonium bromide. G. Sukhonosova, **J. C. Grunlan**, C. Dvoracek
- 4:25 **246.** Tunable bacteria adhesion with polymer brushes. **B. Zdyrko**, V. Klep, X. Li, Q. Kang, S. Minko, H. Wen, I. Luzinov

Section C

Sheraton
Executive Room B

Polymers for Photonics and Optoelectronics Applications Cosponsored by PMSE and NANO

G. G. Malliaras, *Organizer*

P. V. Braun, *Organizer, Presiding*

- 1:30 **247.** High performance polymer recording materials for holographic storage. **L. Dhar**
- 2:00 **248.** Polyimide-lanthanide conjugates for optical gain applications. **S. Fallis**, A. J. Guenther, M. E. Wright

- 2:20 **249.** New fused-ring polymers with low-bandgap and good charge mobility for solar cells. H. A. Becerri, Y. Jiang, N. Miyaki, T. Okamoto, **R. Mondal**, S. Hong, S. Ko, S. Lee, J. Parmer, A. C. Mayer, M. D. McGehee, Z. Bao
- 2:40 Intermission.
- 3:00 **250.** Printing of OLEDs: Electroluminescence with colloidal particles. C. F. Huebner, **S. F. Foulger**
- 3:30 **251.** Tunable electrochromic color using simple conjugated azomethines. **W. G. Skene**, S. Dufresne, A. Bolduc
- 3:50 **252.** Divided pi-ways: Oxacylophane scaffolded pi-system assemblies. A. Mangalum, J. M. Hanley, L. Hawkins, B. P. Morgan, J. T. Smith, **R. C. Smith**
- 4:10 **354.** Luminescence color tuning for difluoroboron β -diketonate-polyacrylate biomaterials. **G. Zhang**, S. J. Payne, S. E. Kooi, J. N. Demas, C. L. Fraser

Section D

Sheraton
Market Street Room

Active and Responsive Surfaces Tuning Biological Interactions Cosponsored by PMSE[†]

W. T. S. Huck, *Organizer*

R. C. Hayward, *Organizer, Presiding*

- 1:30 **254.** Elastic responses of matrices are felt by adherent cells. **D. E. Discher**
- 2:00 **255.** The effects of surface chemistry on epidermal stem cell differentiation. **W. T. S. Huck**, J. Gautrot, F. Watt
- 2:30 **256.** Engineering of peptide-polymer interfaces for active manipulation of cell-surface contacts. **M. A. Biesalski**, S. Petersen, O. Prucker, J. Rùhe
- 2:50 **257.** Thermoresponsive nanocomposite hydrogels with cell-releasing behavior. Y. Hou, J. C. Burkes, S. D. Lee, A. Bulick, M. S. Hahn, **M. A. Grunlan**
- 3:10 Intermission.
- 3:20 **258.** Studying the emergence of multicellular behavior of bacteria using polymers. **D. Weibel**
- 3:50 **259.** Dynamic substrates for cell biology. **M. Mrksich**
- 4:20 **260.** Active surfaces affect tissue culture growth rates: Chemistry and film thickness effects. **D. Bhattacharyya**, H. Xu, K. T. Nguyen, R. B. Timmons
- 4:40 **261.** Phospholipid molecular recognition at the monomer boundaries of copolymer surfaces: Spectroscopic and ab initio studies. **M. Yu**, M. W. Urban

Applications in Nanoscience Processes Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

Nanoscience: Characterization and Applications Tubes, Rods, and Ribbons Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

TUESDAY EVENING

Section A

Salt Palace Convention Center
Hall 5

Polymerization in Nanostructured and Nanocomposite Systems Cosponsored by NANO and PMSE

C. A. Guymon and C. N. Bowman, *Organizers*

- 6:00–8:00
- 262.** Functional micropatterns generated using molecularly imprinted polymer. **K. M. Choi**, K. Shea
- 263.** Silver-gold polymer composite nanocob structures. **R. Gunawidjaja**, S. Peleshanko, H. Ko, V. V. Tsukruk
- 264.** Investigating reversibility in fluorescence resonance energy transfer. **C. S. Evans**, X. Li, P. Kohli

- 265.** Biocompatible nanocomposite hydrogels with tunable adhesion. Y. Sun, L. Li, **X. Guo**
- 266.** DNA-templated polymerization of styrene derivatives in water: New nanomaterial composites. **L. Barreda**, B. M. Porta, J. C. Noveron
- 267.** Photopolymerization kinetics and exfoliation behavior of organoclay systems with different functional groups. **S. K. Kim**, K. Owusu-Adom, C. A. Guymon
- 268.** Polymer microrod arrays prepared by nondestructive molding evaluated by real space image analysis. R. Hillebrand, **S. Grimm**, R. Giesa, H.-W. Schmidt, K. Mathwig, U. Gösele, M. Steinhart
- 269.** Self-assembling aromatic amine-based 3-D-functional polymer structures. **M. V. Lee**, J. R. King, J. P. Hill, K. Ariga
- 270.** Study of the partitioning effect of monomers at the nanofiber-epoxy interphase region. **M. L. Aued**, C. Uzunpinar, R. Williams, M. A. Mosiewicki
- 271.** Surface initiated polymerization from self-assembled peptide nanotubes. **R. V. Gokhale**, Y. Egorov, J. Couet, M. A. Biesalski
- 272.** Tailoring elastic properties of silica aerogels crosslinked with an isocyanate. **B. N. Nguyen**, M. A. Medora, A. Medoro, B. Shonkwiler, L. McCorkle
- 273.** Thiol-functionalized multiwalled carbon nanotube/gold nanoparticle composites. **H.-J. Choi**, I.-Y. Jeon, L. S. Tan, J.-B. Bae

Section B

Salt Palace Convention Center
Hall 5

Nanostructured Materials for Future Therapy Cosponsored by NANO, PMSE, and BTEC

X. Jia, S. Lin-Gibson, and Y. Yeo, *Organizers*

6:00–8:00

- 274.** Bone targeting HPMA copolymer–prostaglandin conjugates. **H. Pan**, **P. Kopeckova**, J. Liu, **J. Yang**, D. Wang, S. Miller, **J. Kopecek**
- 275.** Design and preparation of stimuli-responsive hybrid biomaterials. **J. Yang**, L. Wu, K. Wu, W. Yuan, P. Kopeckova, J. Kopecek
- 276.** Growth and microstructure of antimicrobial layer-by-layer thin films. **J. C. Grunlan**, G. Sukhonosova, C. Dvoracek
- 277.** Hydrogel nanostructure fabrication using electron beam lithography. **M. Bae**, R. Divan, D. C. Mancini, R. A. Gemeinhart
- 278.** Preparation and characterization of Fe₃O₄/SiO₂ nanocomposites. **Y. Zhai**, Q. Zhang, A. Dong, R. Li, F. Liu, G. Gao

Section C

Salt Palace Convention Center
Hall 5

Polymers for Photonics and Optoelectronics Cosponsored by PMSE and NANO

P. V. Braun and G. G. Malliaras, *Organizers*

6:00–8:00

- 279.** Behavior of semiconductor conjugated polymer-quantum dot nanocomposites at the air/water interface and their performance in thin film solar cells. **M. D. Goodman**, J. Xu, J. Wang, Z. Lin
- 280.** Design of multilayered nanostructures at donor-acceptor hetero junctions in polymer-based organic solar cells. **H. Bente**, M. Ogawa, H. Ohkita, S. Ito
- 281.** Donor-acceptor-donor oligomers for near-infrared emission in polymer-based light emitting devices. **K. R. Graham**, S. Ellinger, T. T. Steckler, R. T. Farley, K. S. Schanze, J. R. Reynolds
- 282.** High-efficiency light-emitting diodes based on silole-containing polymers. **Z. Liu**

- 283.** Improvement of photocurrent in bulk heterojunction polymer solar cells by introduction of dye molecules. **S. Honda**, S. Yokoyama, T. Nogami, H. Ohkita, H. Benten, S. Ito
- 284.** Low band-gap polymers based on fused aromatic thienopyrazine for photovoltaic applications. **S. Ko**, N. Miyaki, R. Mondal, H. A. Becerri, J. Parmer, A. C. Myer, M. D. McGehee, Z. Bao
- 285.** Monitoring degree of imidization via fluorescence quench of an embedded two-photon-absorbing chromophore by an aromatic polyimide. **D. H. Wang**, R. Rao, R. Kannan, B. Maruyama, J. Q. Buquoi
- 286.** Role of regioregularity on temperature-induced conformational switching in poly(N-isopropylacrylamide) grafted polythiophenes. **J. Choi**, E. E. Nesterov
- 287.** Synthesis and characterization of a Ge-containing macrocycle. A. Sengupta, S. Ghosh, K. Albyankar, **R. M. Peetz**
- 288.** Synthesis and characterization of high refractive index polyimides derived from 3,6-Bis(4-aminophenylsulfanyl)pyridazine. **N.-H. You**
- 289.** Synthesis and characterization of novel aromatic imide polymer and copolymers containing diphenylaminofluorene-benzothiazole as two-photon chromophoric units. **M. J. Dalton**, R. Kannan, R. Jakubiak, J. E. Haley, J. Q. Buquoi
- 290.** Synthesis and thermal properties of polyepichlorohydrin-based liquid crystalline polymers containing azobenzene in the side-chain. C. He, **C. Zhang**
- 291.** Synthesis of organo-inorganic hybrid materials for flexible optical waveguide applications. **J. H. Oh**, Y. S. Ko, K. B. Kim, M. S. Kim, Y. K. Kwon
- 292.** Synthesis of well-defined polystyrene-*b*-poly(2-vinylpyridine-co-4-vinylpyridine) for the fabrication of metal oxide nanocomposites. R. P. Quirk, **C. A. Garces**, M. Olechnowicz
- 293.** Conducting polymer tethered on surface via grafting from approach. **S. Saha**, G. L. Baker

Section D

Salt Palace Convention Center
Hall 5

Active and Responsive Surfaces Cosponsored by PMSE[†]

R. C. Hayward and W. T. S. Huck, *Organizers*

6:00–8:00

- 293.** Effective adsorption of hydrophobic molecule on a cotton cloth by amphiphilic polysulfobetaine, and its solving behavior to saline. **T. Sugiyama**, M. Isoda, M. Komatsu, I. Toki, N. Yamamoto
- 294.** Freely standing magnetic polymer nanomembrane. **S. Santer**, C. Schlemmer
- 295.** Guiding cells with biofunctional peptide-polymer monolayers. **S. Petersen**, M. A. Biesalski, O. Prucker, J. Rùhe
- 296.** Molecular sensing medium based upon nanoporous syndiotactic polystyrene. J. P. Brandt, **M. Kaushik**, B. G. Olson, S. Heinhorst, G. C. Cannon, S. Nazarenko
- 297.** Photocrosslinked polyelectrolyte films of varying mechanical stiffness to control cell adhesion. C. Pozos Vazquez, T. Boudou, V. Dulong, C. Nicolas, C. Picart, **K. Glinel**
- 298.** Stimuli responsive properties of photopolymerized hydrogels based on reactive lyotropic liquid crystals. **L. Stevens-Figueroa**, C. A. Guymon
- 282.** Surface-initiated polymerization of phosphoramines: A route to hybrid inorganic-organic poly(phosphazene) brushes. J. Li, A. LeBlanc, J. Huber, **D. L. Patton**

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Section E

Salt Palace Convention Center
Hall 5

Polymers and Carbon Nanotubes

Cosponsored by NANO, COLL, I&EC, PHYS,
and PMSE

W. T. Ford, B. P. Grady, P. M. Ajayan, and
R. Krishnamoorti, *Organizers*

6:00-8:00

299. Preparation of urea functionalized carbon
nanotubes. **S. M. Ramirez**, T. E. Long
300. Composites of single-wall carbon nano-
tubes and styrene latices.
I. Chavez-Sumarriva, B. P. Grady

301. Functionalization of 3,4-diaminobenzoic
acid onto the surface of carbon nanotube
in polyphosphoric acid/phosphorus pentox-
ide medium. **J.-Y. Kang**, S.-M. Eo,
L. S. Tan, J.-B. Baek

302. Inkjetting single walled carbon nanotubes
for net 3-D structures. **A. R. Hopkins**

303. Preparation of CP2 polyimide nanocom-
posite films containing pristine and amine-
functionalized carbon nanotubes.
D. H. Wang, **J. Q. Buquoi**, R. A. Vaia,
G. E. Price, L. S. Tan

304. Pyrene containing polystyrene based
block copolymers for the noncovalent
surface modification of as-prepared carbon
nanotubes and their applications.
S. C. Hong, I. H. Choi, H. J. Choi

305. Tailoring carbon nanotube microstructure
using pH-responsive polymers in aqueous
suspensions. J. C. Grunlan, **K. C. Etika**

306. Vapor grown carbon nanofibers and
epoxy nanocomposites: functionalization,
preparation and characterization.
D. H. Wang, S. Sihn, J.-B. Baek, A. Roy,
J. Q. Buquoi

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Nanoscience Synthesis Sponsored by
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NANO

WEDNESDAY MORNING

Section A

Sheraton
Granary Room

Polymerization in Nanostructured and Nanocomposite Systems

Nanocomposites Cosponsored by PMSE
and NANO

C. A. Guymon, *Organizer*

T. Kato, *Presiding*

C. N. Bowman, *Organizer, Presiding*

8:30 307. Photopolymerization in lyotropic
liquid crystals and nanocomposites.
C. A. Guymon, K. Owusu-Adom,
L. Sievens-Figueroa, J. D. Clapper,
M. A. DePiero

9:00 308. Combinatorial characterization of
photopolymerizable nanocomposites:
Effect of filler type and content on proper-
ties. **S. Lin-Gibson**, L.-P. Sung,
A. M. Forster, H. Hu, N. J. Lin

9:25 309. Abnormal mechanical behavior of
exfoliated montmorillonite/poly(methyl
acrylate-co-methyl methacrylate)
nanocomposite films. **K.-J. Lin**, C.-H. Lee,
K.-F. Lin

9:50 Intermission.

10:10 310. Thiol-ene and nanostructuring.
C. E. Hoyle, J. P. Phillips, J. Shin,
L. Kwisnek, C. Comer, T. S. Clark,
S. Nazarenko, B. S. Confait

10:40 311. Polysiloxane antimicrobial coat-
ings containing quaternary ammonium-
functionalized POSS. **P. Majumdar**,
E. Lee, A. Kallam, N. Gubbins,
S. J. Stafshien, J. Daniels, C. J. Thorson,
B. J. Chisholm

11:05 312. Synthesis, characterization, and
applications of metallic nitride fullerene
polymer nanocomposites. **J. P. Phillips**,
C. E. Hoyle, B. S. Confait,
D. M. McCluskey, H. Ahmed, S. Stevenson

11:35 313. Plasma surface modified nano-
particles for synthesis of chemically
bonded inorganic-organic nanocomposite
materials. **N. Mukherjee**, D. Wavhal,
R. B. Timmons

Section B

Sheraton
Seasons Ballroom South

Nanostructured Materials for Future Therapy

Nanostructured Materials for Tissue Engineering Cosponsored by PMSE, BTEC,
and NANO

X. Jia and S. Lin-Gibson, *Organizers*

Z. Lin, *Presiding*

Y. Yeo, *Organizer, Presiding*

8:15 314. Nanostructured materials for
biomedical applications. **G. Gupta**,
K. Staggs, G. A. Montaño, **G. P. Lopez**

8:45 317. Silk blending for osteoblastic
attachment. **A. W. Morgan**, K. E. Roskov,
S. Lin-Gibson, D. Kaplan, M. L. Becker,
C. G. Simon Jr.

9:15 316. Insect cuticle-inspired PEGDA-
agarose semi-interpenetrating network
hydrogels for tissue engineering.
J. Lomakin, M. S. Detamore, **S. G. Hehrle**

9:35 315. Nanostructured hydrogels for
treatment of central retinal vein occlusion.
J. D. Clapper, **C. A. Guymon**

9:55 Intermission.

10:15 318. Nanoscale properties of aggrecan
produced by equine mesenchymal stem
cells. H.-Y. Lee, P. W. Kopecky, L. Daher,
A. Mosquera, D. Frisbie, J. Kisiday,
A. J. Grodzinsky, **C. Ortiz**

10:45 319. Synthesis and characterization of
elastin mimetic hybrid copolymers with
alternating molecular architecture.
S. E. Grieshaber, K. L. Kick, **X. Jia**

11:05 320. Fabrication of conducting com-
posite materials of polypyrrole-polycap-
rolactone fumarate for nerve regeneration.
M. B. Runge, M. Dadsetan,
M. J. Yaszemski

11:25 321. Functional PEG-PLLA networks
for dental bone repair: Effect of network
chemistry on properties and performance.
H. Peng, X. Chua, I. Blakey, B. Dargaville,
F. Rasoul, A. Symons, S. Varanasi,
A. K. Whittaker

11:45 322. Methodology for characterizing
fibrillar collagen assembled in vitro under
various initial collagen concentrations.
Y.-J. Hwang, J. Lyubovitsky

Section C

Sheraton
Executive Room B

Polymers for Photonics and Optoelectronics

Properties by Design Cosponsored by
PMSE and NANO

P. V. Braun and G. G. Malliaras,
Organizers

S. Foulger, *Organizer, Presiding*

8:45 323. Tutorial: Materials design for high
performance thin film transistors. **Z. Bao**

9:30 324. Application of tunable thieno[3,4-
b]pyrazine building blocks to new low band
gap materials. J. P. Niefeld,
S. J. Evenson, L. Wen, **S. C. Rasmussen**

9:50 325. Poly(thiopheneamide)s: A new
class of photoactive and conjugated poly-
mers. **J. Klos**, S. Hlif, A. F. M. Kilbinger

10:10 326. ADMET synthesis of homologous
Si-, Ge-, and Sn-containing conjugated
polymers. N. Mukherjee, S. Ghosh,
R. M. Peetz

10:30 Intermission.

10:50 327. Near infrared light-emitting
devices based on donor-acceptor-donor
oligomers. **J. R. Reynolds**, K. R. Graham,
S. Ellinger, T. Steckler, R. T. Farley,
Y. Yang, S.-H. Eom, J. Xue, K. Schanze,
J. Sommer

11:20 328. Conjugated organoborane poly-
mers as optoelectronic materials. H. Li,
A. Sundararaman, P.-K. Chen, **F. Jäkke**

11:40 329. Controlling β -phase formation in
chiral polyfluorene. **G. Lakhwani**,
S. C. J. Meskers

Section D

Sheraton
Market Street Room

Active and Responsive Surfaces

Electrical and Optical Control Cosponsored
by PMSE[†]

R. C. Hayward and W. T. S. Huck,
Organizers

J. Frechette, *Presiding*

8:30 330. Dynamic response of ion-pair
monolayers. G. K. Olivier, D. Shin,
J. B. Gilbert, **J. Frechette**

9:00 331. Electrochemical surface plasmon
resonance study of nanostructured multi-
layer assemblies on redox-active self-
assembled monolayers. **B. Davis**,
Q. Cheng

9:20 332. Influence of electrostatic fields in
self assembly. **N. A. Melosh**

9:50 333. Nanograss, nanobricks, nanonails,
and other things useful in your nano-
landscaping. **T. Krupenkin**

10:20 Intermission.

10:30 334. Optical tweezer manipulation of
photosensitive colloidal particles to form
nonequilibrium structures. **N. S. Bell**,
C. Brotherton, T. Koehler, A. M. Grillet

11:00 335. Reversible colorimetric sensors
using spiropyran polymer brushes.
J. Locklin, K. H. Fries, S. Samanta,
S. V. Orski

11:20 336. Light induced structuring and
ablation of azopolymer brushes. **S. Santer**,
C. Schuh, J. Rühle, J. Donges

11:40 337. Orientational modes of molecular
transport in a polyanionic polymer brush
via single molecule fluorescence spectroscopy.
C. G. Reznik, C. Landes

Applications in Nanoscience

Diagnostics and Delivery Sponsored by
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NANO

WEDNESDAY AFTERNOON

Section A

Sheraton
Granary Room

Polymerization in Nanostructured and Nanocomposite Systems

Liquid Crystalline and Structured Systems
Cosponsored by PMSE and NANO

C. N. Bowman, *Organizer*

C. Hoyle, *Presiding*

C. A. Guymon, *Organizer, Presiding*

1:30 338. Crosslinking of nanoporous lyo-
tropic liquid crystal assemblies for separa-
tion and transport applications. **D. L. Gin**,
M. Zhou, X. Lu, R. L. Kerr,
C. S. Pecinovsky, E. S. Hatakeyama,
B. R. Wiesenauer, B. J. Elliott, R. D. Noble

2:00 339. Polymerization in functional nano-
structured liquid-crystalline assemblies.
T. Kato, Y. Hirai, Y. Sagara, M. Yoshio,
K. Kishimoto, T. Ichikawa, H. Ohno

2:30 Intermission.

2:45 340. Nanostructured smectic networks
toward integrated nanomembranes.
D. J. Broer, C. Luengo, C. Bastiaansen,
J. Lub

3:15 341. Impact of helical structure retention
in phototunable polymer stabilized chole-
steric liquid crystals. **T. J. White**,
L. V. Natarajan, R. L. Bricker, Q. Li,
N. V. Tabiryan, T. J. Bunning

3:45 342. Tailoring polymethacrylate network
structures through polymerization-induced
phase separation. **J. Stansbury**,
C. S. Pfeifer

Section B

Sheraton
Seasons Ballroom South

Nanostructured Materials for Future Therapy**Functional Materials and Drug Delivery**

Cosponsored by PMSE, BTEC, and NANO

X. Jia, *Organizer*

Y. Yeo and S. Lin-Gibson, *Organizers*,
Presiding

1:30 343. Nanostructured polymer brushes
for life science applications. **C. K. Ober**,
A. Rastogi, R. Dong, M. Tanaka,
E. N. Chiang, G. Bernos, S. Nad, N. Smith,
L. Blum, Y. Bisharyan, Y. Liu, K. Berberian,
T. Clark, J. Appleton, B. A. Baird,
M. Lindau, H. D. Abruña

2:00 344. Dendrimers based on triazines:
From flecks in the flask toward molecules
in the clinic. **E. E. Simanek**

2:20 345. An efficient route to triazine den-
drimers containing 20-(S)-camptothecin for
cancer therapy. **V. J. Venditto**,
S. K. Lalwani, K. Allred, C. D. Allred,
E. E. Simanek

2:40 346. Development of well-defined
polyfunctional dendrimers for biological
applications. **C. Ornelas**, M. Weck

3:00 Intermission.

3:20 347. Ring-opening polymerization
mediated chemo- and regioselective
conjugation of doxorubicin to polylactide.
R. Tong, **J. Cheng**

3:40 348. Curcumin-surfactant as anticancer
prodrugs and drug carriers. H. Tang,
C. J. Murphy, B. Zhang, **Y. Shen**,
K. D. Creameans, E. A. Van Kirk,
W. J. Murdoch

4:00 349. Block copolyester micelles as
nanocarriers for sustained release of
camptothecin. **X. Wang**, L. Xiao, C. Liu,
X. Jia

4:20 350. pH-Triggered charge-reversal
polylysine for targeted cancer cell nuclear
drug delivery. **Z. Zhou**, Y. Shen,
E. A. Van Kirk, W. J. Murdoch

Section C

Sheraton
Executive Room B

Polymers for Photonics and Optoelectronics

Properties by Design Cosponsored by
PMSE and NANO

P. V. Braun and G. G. Malliaras,
Organizers

Z. Bao, *Organizer, Presiding*

1:30 351. Self-assembly and interface engi-
neering for high-performance organic
electronics. **A. K.-Y. Jen**

2:00 352. Oligo(thiopheneamide) graft-
copolymers by ROMP. **S. Hlif**, J. Klos,
A. F. M. Kilbinger

2:20 353. High metal loaded polymeric
complexes for optoelectronics. **J. Kallitsis**,
E. Petkianakis, A. Stefoopoulos,
A. Merziotis, A. Andreopoulos

2:50 Intermission.

3:10 355. Kinetics of crosslinking and chro-
mophore degradation in polyimide-based
high performance electro-optical materials.
A. J. Guenther, M. E. Wright, S. Fallis,
L. R. Cambrea, J. Cash, G. R. Yandek,
B. J. Petteys

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techprogram/](http://oasys2.confex.com/acs/237nm/techprogram/).

- 3:30 356.** New frontiers of organic electro-optics: From molecular engineering to technological innovation. **J. Luo**, X.-H. Zhou, Z. Shi, S. Huang, S.-H. Jang, B. Polishak, M. O'Connor, A. K.-Y. Jen
- 3:50 357.** Tunable high glass-transition electro-optical polymers by ring opening metathesis polymerization. **R. H. Lambeth III**

Section D

Sheraton
Market Street Room

Active and Responsive Surfaces
Interfacial Mechanics Cosponsored by PMSE[‡]

R. C. Hayward and W. T. S. Huck,
Organizers

A. J. Crosby, *Presiding*

- 1:30 358.** Mechanically-dynamic polymer nanocomposites. **C. Weder**, S. J. Rowan, J. R. Capadona, K. Shanmuganathan
- 2:00 359.** Reconfigurable surfaces for cell and molecular manipulation. **S. Takayama**
- 2:30 360.** Hydrogel surfaces with dynamic biomolecular patterns. **R. C. Hayward**, J. Kim, J. Yoon
- 2:50 361.** Bonding adhesion between flexible acrylate thermoplastic elastomer and poly (ethylene terephthalate) films. **J. Xu**, M. Cui, L. Xu, C. Jing, A. Salo, J. Qin, J. Fang, A. Liu
- 3:10** Intermission.
- 3:20 362.** Crumpling polymer films. **A. J. Crosby**, D. P. Holmes, C. Davis
- 3:50 363.** Buckled membranes in mixed-valence ionic amphiphiles. **M. Olvera de la Cruz**, G. Vernizzi, M. Greenfield, L. Palmer, S. I. Stupp
- 4:10 364.** Harnessing elastic instability on patterned polymer surfaces. **Y. Zhang**, J. Reed, D. Chandra, E. Matsumoto, R. D. Kamien, **S. Yang**
- 4:40 365.** Segmented shape memory polyurethanes. **T. Richardson**, M. L. Auad, M. A. Mosiewicki, M. I. Aranguren, N. E. Marcovich
- 5:00** Concluding Remarks.

Applications in Nanoscience
Particles and Quantum Dots Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

Nanoscience Synthesis Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

WEDNESDAY EVENING

Nanoscience: Characterization and Applications Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

THURSDAY MORNING

Section A

Sheraton
Granary Room

Nanostructured Materials for Future
Therapy
Functional Materials and Drug Delivery
Cosponsored by PMSE, BTEC, and NANO

Y. Yeo, *Organizer*

X. Jia and S. Lin-Gibson, *Organizers*,
Presiding

- 8:30 366.** Polymersome delivery of siRNA and antisense oligonucleotides. **D. E. Discher**

Please refrain from using cellular telephones and cameras during technical sessions.

- 9:00 367.** Poly(glycoamidoamine) DNA delivery vectors are internalized by multiple endocytic pathways. **P. M. McLondon**, K. M. Fichter, T. M. Reineke
- 9:20 368.** Self-assembled oligopeptide nanostructures for co-delivery of drug and gene: Achieving synergy in suppressing cancer cell proliferation. **Y.-Y. Yang**, N. Wiradhama, Y. W. Tong
- 9:40 369.** Polymeric gene delivery vectors: Role of molecular architecture. **S. Venkataraman**, W. L. Ong, C. Y. Ke, S. T. B. Mohamed, S. C. J. Loo, Y. Y. Yang
- 10:00** Intermission.
- 10:20 370.** Polysaccharides with tailored nanostructures for biomedical applications. **M. J. Kipper**, S. Boddhi, S. S. Yonemura
- 10:50 371.** Biodegradable temperature and pH-dually responsive poly(beta-amino ester)s and their nanoparticles for drug delivery. **X. Lu**, K. D. Cremeans, H. Tang, E. A. Van Kirk, W. J. Murdoch, **Y. Shen**
- 11:10 372.** Optimization of glucan particle mediated DNA transfection of macrophages. **E. Soto**, S. Amano, S. Kahlon, G. Ostroff
- 11:30 373.** Curcumin-containing polymers as anticancer prodrugs. **H. Tang**, C. J. Murphy, B. Zhang, K. D. Cremeans, E. A. Van Kirk, W. J. Murdoch, **Y. Shen**
- 11:50 374.** Polyvalent display of human holo-transferrin on bacteriophage Q β via oxime ligation and copper-catalyzed azide-alkyne cycloaddition click reaction. **D. Banerjee**, M. G. Finn

Section B

Sheraton
Seasons Ballroom South

General Papers
Polymer Characterization and Special Topics

D. Garcia, *Organizer*

H. Liu and K. C. Gupta, *Organizers*,
Presiding

- 8:00 375.** Multifrequency DSC applied to dynamic relaxation phenomena of natural polymers. **A. Mijs**, N. Guigo, L. Vincent, N. Sbirrazuoli
- 8:20 376.** Investigation of the composition and growth of in vitro natural rubber using high resolution size exclusion chromatography. **C. C. K. Chiang**, A. J. Heidenreich, W. Xie, C. M. McMahan, J. E. Puskas
- 8:40 377.** Use of mechanochemical devulcanized ground rubber tire powder (GRT) as a potential filler in epoxy composites. **S. Yagneswaran**, N. Tomar, D. W. Smith Jr., J. Cellura, G. Wallace
- 9:00 378.** Semifluorinated polymer system with ionic liquids. **R. Verma**, N. Tomar, D. W. Smith Jr.
- 9:20 379.** Quantum chemistry and molecular dynamics simulation studies of proton transport in the fluoroalkylphosphonic acid based electrolyte. **Q. Liu**, O. Borodin, G. D. Smith
- 9:40 380.** Thermally crosslinkable poly (acrylonitrile-co-1-vinylimidazole) as melt processable carbon fiber precursor. **W. Deng**, A. Lobovsky, S. T. Iacono, W. P. Hoffman, D. W. Smith Jr.
- 10:00** Intermission.
- 10:20 381.** Para-octaiodophenylsilsesquioxane, [p-C₈H₄SiO_{1.5}]_n, a nearly perfect nanobuilding block. **M. Roll**, M. Z. Asuncion, S. Sulaiman, J. Kampf, P. Mathur, R. M. Laine
- 10:40 382.** New flame-resistant rigid-rod random copolymers with flexibilizing structural units. **T. D. Dang**, Z. Bai, N. Venkatasubramanian, A. B. Morgan, J. A. Shumaker, M. D. Houtz
- 11:00 383.** Biodegradable poly(butylene succinate) copolymers containing minor amounts of succinate derived from other diols. H.-S. Hsu, Y.-C. Shih, **M. Chen**
- 11:20 384.** Thermoresponsive cellulose by ATRP graft copolymerization of comonomers. **K. C. Gupta**
- 11:40 385.** Nonthermal microwave effect on the ring opening polymerization of epsilon-caprolactone. **L. Liu**, S. Cai

Section C

Sheraton
Executive Room B

Polymers in Electrophotography

Y. Tong, T. W. Smith, and W. T. Ferrar,
Organizers

- 8:30 386.** Suspensions of pigment nanoparticles in aqueous solutions: Effect of pH and energy input on morphology and rheology. **A. Pacek**
- 9:00 387.** Design and properties of micro/nanostructured surfaces for digital color printing. **K.-Y. Law**, H. Zhao
- 9:30 388.** Efficient and robust charge-transporting polymers for highly efficient polymer light-emitting diodes. **F. Huang**, Y.-J. Cheng, M. S. Liu, P.-I. Shih, C. Shu, **A. K.-Y. Jen**
- 10:00** Intermission.
- 10:20 389.** Electron-transport agents in polyamides for organic photoreceptors. **W. T. Ferrar**, D. S. Weiss, M. F. Molaire, X. Jin, L. J. Sorriero
- 10:50 390.** Imide based resins. **G. Sacripante**
- 11:20 391.** Organic nanocomposite photoconductive materials with high photosensitivity. **H. Chen**

Applications in Nanoscience
One-Dimensional Materials Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

THURSDAY AFTERNOON

Section A

Sheraton
Granary Room

Nanostructured Materials for Future
Therapy
Nanoparticles Cosponsored by PMSE, BTEC, and NANO

S. Lin-Gibson, *Organizer*

X. Jia and Y. Yeo, *Organizers*, *Presiding*

- 1:30 392.** Multiplexed bioimaging of cancer biomarkers in human thyroid lesions. **M. L. Becker**, M. D. Roy, W. S. Goldner, W. W. West
- 2:00 393.** Nanoparticles for targeted PET imaging. **E. D. Pressly**, C. J. Hawker
- 2:20 394.** Photonic, cationic, pH-responsive shell-crosslinked nanoparticle probes for optical imaging and monitoring in vivo. **N. S. Lee**, G. Sun, W. L. Neumann, J. N. Freskos, J. J. Shieh, R. B. Dorshow, K. L. Wooley
- 2:40 395.** Polymer modified gadolinium nanoparticles as theragnostic devices for the targeted imaging and treatment of cancer. **M. D. Rowe**, S. G. Boyes, C.-C. G. Chang
- 3:00** Intermission.
- 3:20 396.** Synthesis and evaluation of novel partly-fluorinated block copolymers as MRI imaging agents. **H. Peng**, I. Blakey, B. Dargaville, F. Rasoul, S. Rose, **A. K. Whittaker**
- 3:40 397.** Targeted thermal elimination of cancer using radiofrequency heating of gold nanoparticles. **P. Cherukuri**, C. Moran, S. A. Curley
- 4:00 398.** Effects of a methacrylic silane on some physicochemical properties of resin-based biomimetic composite. **J. Antonucci**, D. Skritic
- 4:20 399.** Developing a new generation of nanostructured TiO₂ and hybrid based bone cements. **P. Charpentier**, S. Khaled, A. Rizkalla
- 4:40** Concluding Remarks.

‡ Cooperative Cosponsorship

Section B

Sheraton
Seasons Ballroom South

General Papers
Liquid Crystalline Polymers and Related Topics

D. Garcia, *Organizer*

M. B. Runge, *Organizer*, *Presiding*

- 12:30 400.** New liquid crystal diglycidyl ether bearing azomethine linkage cured by aromatic diamines. **A. M. Issam**, R. Ratnamalar
- 12:50 401.** Entropically driven smectic A and A₂ phases occurring in binary mixtures of rigid-rod helical polysilanes with different molecular weights. **K. Okoshi**, A. Suzuki, M. Tokita, M. Fujiki, J. Watanabe
- 1:10 402.** Poly(pyridinium salt)s derived from (alpha),(omega)-diaminoalkanes: Thermotropic liquid-crystalline and photoluminescence properties. **H. D. Mandal**, P. K. Bhowmik, H. Han, A. K. Nedeltchev
- 1:30 403.** Poly(pyridinium salt)s with organic counterions derived from aromatic diamine containing tetraethyleneoxy units exhibiting thermotropic liquid-crystalline and photoluminescence properties. **H. D. Mandal**, P. K. Bhowmik, H. Han, A. K. Nedeltchev, J. A. Jimenez-Hernandez, P. M. McGannon
- 1:50 404.** Prolate spheroid domains formed by 2 wt% amorphous segment in an asymmetric LC block copolymer/LC homopolymer mixture. **M. Tokita**, S. Masuyama, M.-A. Adachi, J. Watanabe
- 2:10** Intermission.
- 2:30 405.** Unusual formation of smectic A structure in crosslinked monodomain elastomer of main-chain LC polyester with 3-methylpentane spacer. **R. Ishige**, M. Tokita, Y. Naito, C. Y. Zhang, J. Watanabe
- 2:50 406.** Twisted intramolecular charge transfer molecule as a covalently integrated reporter of polymer dynamics. **J. D. Biberdorf**, C. W. Cone, D. A. Vanden Bout, **B. J. Holliday**
- 3:10 407.** Investigation of the self-assembly of diblock comb polymers into ordered arrays. **M. B. Runge**, C. E. Lipscomb, L. Ditzler, M. K. Mahanthappa, A. V. Tivanski, N. B. Bowden
- 3:30 408.** Hydrophobic shell loading of PB-b-PEO vesicles. **W. Mueller**, K. Koynov, K. Fischer, S. Hartmann, S. Pierrat, T. Basché, M. Maskos
- 3:50 409.** Fluorescence kinase and phosphatase assays using conjugated poly-electrolytes. **C. Tan**, Y. Xie, Y. Jiang

Section C

Sheraton
Executive Room B

Polymers in Electrophotography

Y. Tong, T. W. Smith, and W. T. Ferrar,
Organizers

- 1:30 410.** Organic photoreceptors. **D. S. Weiss**
- 2:00 411.** Polyester based toner resins. **G. Sacripante**
412. Withdrawn.
- 2:30 413.** Polymers in electrophotography. **G. P. Marshall**
- 3:00 414.** Single-layered photoreceptors based on photoconductive nanoparticles of phthalocyanines. **Y. Wang**
- 3:30 415.** Toner materials and manufacturing. **D. Tyagi**

Applications in Nanoscience
Novel Structures Sponsored by COLL, Cosponsored by POLY, INOR, and NANO