

2000 Fall meeting

2000 FALL NATIONAL ACS MEETING

Washington, DC (August 20-25, 2000)

Program Meeting Chair: [Warren Ford](#)

Abstract/Preprint Deadline: April 17, 2000

Important Dates for Washington

April 18, 2000 Preprint and abstract submission closes.

Scanning Probe Microscopy of Polymers: The Next Generation

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Electroactive Polymers for Corrosion Control/Prevention

Peter Zarras, NAWCWPNS, Code 4B2200D, China Lake, CA 93555, (760) 939-1396, fax (760) 939-1617, zarrasp@navair.navy.mil; John D. Stenger-Smith, NAWCWPNS, Code 4B2200D, China Lake, CA 93555, (760) 939-1661, fax (760) 939-1617, stengersmijd@navair.navy.mil; Yen Wei, Dept. of Chemistry, Drexel Univ., Philadelphia, PA 19104, (215) 895-2650, fax (215) 895-1265, weiyen@drexel.edu.

Macromolecular Synthesis by Selective Chemical Modification

Marc A. Hillmyer, Dept. of Chemistry, U of Minnesota, Minneapolis, MN 55455, 612-625-7834, fax (612) 626-7541, hillmyer@chem.umn.edu; Steve F. Hahn, Central R&D, Dow Chemical, 1707 Bldg, Midland, MI 48674, (517) 636-3802, fax (517) 638-9547, shahn@dow.com.

Emerging Frontiers in Polyolefins

P. Arjunan, Exxon Chemical Company, Baytown Polymers Center, 5200 Baytown Drive, Baytown, TX 77522, (281) 834-1533, fax (281) 834-2480, Pal.Arjunan@Exxon.sprint.com; J. E. McGrath, Virginia Tech; T. L. Hanlon, Albemarle Corp.

4th International Biorelated Polymers Symposium

A. Kabanov, Dept. of Pharmaceutical Science, School of Pharmacy, U of Nebraska, Omaha, NE 68198-6021, (402)559-5320, fax (402)697-7385, akabanov@home.com; Ray Ottenbrite, Department of Chemistry, Virginia Commonwealth U, Richmond, VA 23284, (804) 828-7513, fax (804) 367-8599, ottenbri@saturn.vcu.edu.

Polymers in Museums: Preservation for the Next Millenium

Mary Baker, Chemonics International, Egypt MVE - Mary T. Baker, 1133 20th Street, NW, Suite 600, Washington, DC 20036, Phone/fax: 202-777-2649x1286 mtbaker@zdnetwork.com.

Enviro-compatible Syntheses and Processes: Targeting Sustainability (cosponsored by PMSE)

Richard A. Gross, Polytechnic University, Polymer Research Institute, Six Metrotech Center, Brooklyn, N.Y. 11201, Fax (718) 875-9646, rgross@poly.edu; H.N. Cheng, Hercules Inc., Research Center, 500 Hercules Rd, Wilmington, DE 19808-1599, (302)-995-3505, Fax (302)-995-4135, hcheng@herc.com; Graham Swift, 215 Winged Foot Dr., Blue Bell, PA 19422, (610)239-7345, grahamswift@aol.com.

Organic Thin Films for Photonic Applications (PMSE, Optical Society of America)

Robert Twieg, Dept. of Chemistry, Kent State U, Kent, OH 44242, (330) 672-2791, fax (330) 672-3816, rtwieg@ci.kent.edu.

Industrial Sponsors

General Papers

DIVISION OF POLYMER CHEMISTRY

Final Program

2000 Fall meeting

W. Ford, *Program Chair*

OTHER SYMPOSIA OF INTEREST:

Interfacial Adhesion and Molecular Composites (*see Division of Colloid & Surface Chemistry*, Mon, page xx)

Polymer Interfaces: Adsorption, Self-Assembly, and Blend Interfaces (*see Division of Colloid & Surface Chemistry*, Tue, Wed, Thu, page xx)

Surfactants, Polymers, and Colloids in the Aquatic Environment (*see Division of Colloid & Surface Chemistry*, Sun, Mon, page xx)

Functional Nanostructures (*see Division of Industrial & Engineering Chemistry*, Sun, Mon, Tue, page xx)

SOCIAL EVENTS:

Social Hour, Sun, Tue

Reception, Tue

BUSINESS MEETING:

Sun

SUNDAY MORNING

Section A

JW Marriott
Grand Salon I

Scanning Probe Microscopy of Polymers: The Next Generation

Overviews and Introduction

V. V. Tsukruk, N. D. Spencer, *Organizers*

D. Reneker, N. Spencer, *Presiding*

8:30—Introductory Remarks.

8:40—**1.** Overview of state-of-the-art SPM of crystalline polymers. **M. J. Miles**, J. K. Hobbs, T. J. McMaster, A. A. Baker, P. J. James, S. T. Blakely, M-N. Aissaoui

9:25—**2.** Visualization of nanoscale architecture of ordered polymers with atomic force microscopy. **S. Magonov**

10:10—Intermission.

10:30—**3.** Nanoindentation of polymers: Overview. **M. R. VanLandingham**, J. S. Villarrubia, G. F. Meyers

11:15—**4.** Molecular dynamics modeling of scanning probe microscopy experiments. **J. A. Harrison**

Section B

JW Marriott
Capitol Salon E

Macromolecular Synthesis by Selective Chemical Modification

Hydrogenation and Other Selective Modifications

M. A. Hillmyer, S. Hahn, *Organizers*

S. F. Hahn, *Presiding*

8:00—Introductory Remarks.

8:30—**5.** Control of structure and properties in polyphosphazenes by selective chemical reactions. **H. R. Allcock**

9:00—**6.** Influence of the tacticity on the esterification of syndio and atactic poly(methacrylic acid)s. **P. Gramain**, C. Chovino

9:30—**7.** Synthesis of well-defined maleic anhydride grafted PE, PP, EP, and s-PS polymers via selective modifications of metallocene-prepared polyolefin copolymers. B. Lu, G. Xu, J. Y. Dong, **T. C. Chung**

10:00—Intermission.

10:15—**8.** Catalytic hydrogenation of nitrile butadiene rubber. **G. Rempel**

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10:45—9. Catalytic modification of polymers: Hydrogenation routes to amine functional materials. **B. M. Novak**, Y. Aoyama

11:15—10. Diimide hydrogenation of emulsified unsaturated polymers: Past, present, and future. **D. K. Parker**

11:45—11. Soluble polymers with controlled levels of secondary and tertiary amine functional groups. **M. P. McGrath**, E. D. Sall, S. J. Tremont

Section C

JW Marriott
Grand Salon II

4th International Biorelated Polymers Symposium

Tutorial Session: Polymers in Biorelated Fields

A. V. Kabanov, R. M. Ottenbrite, *Organizers*

A. V. Kabanov, T. Ouchi, *Presiding*

8:00—Introductory Remarks.

8:05—12. Controllable design of block copolymer vehicles for drug delivery. P. Lim Soo, O. Terreau, R. Savic, C. Allen, D. Maysinger, **A. Eisenberg**

8:45—13. Bioinspired polymeric conjugates for biotechnologies. **P. Stayton**, A. Hoffman, N. Murthy, C. Cheung, C. Lackey, Z. Ding, T. Shimoboji, O. Press

9:25—Intermission.

9:40—14. Synthetic polymers as vectors for gene delivery. **E. H. Schacht**, V. Toncheva, L. DeKie, P. Dubruel

10:10—15. Thermodynamic investigation of the interaction of polycations with DNA. T. K. Bronich, B. I. Kankia, A. V. Kabanov, **L. A. Marky**

10:40—16. What happens to negatively charged vesicles upon interacting with polycation species? **A. Yaroslavov**, V. Kabanov

11:10—17. Grafted polymer layers and their interactions with proteins. **I. Szleifer**

Section D

JW Marriott
Capitol Salon F

Electroactive Polymers for Corrosion Control/Prevention

Tutorial and Overview of Corrosion Protection

P. Zarras, J. D. Stenger-Smith, Y. Wei, B. Wessling, *Organizers*

P. Zarras, J. D. Stenger-Smith, B. C. Benicewicz, *Presiding*

8:15—Introductory Remarks.

8:20—18. Tutorial on the use of electroactive polymers as corrosion-inhibiting materials. **P. Zarras, J. D. Stenger-Smith**

9:00—19. Corrosion-protective coatings from electroactive polymers. **K. G. Thompson**, B. C. Benicewicz

9:30—20. Synthesis and characterization of polymers with oligoaniline side chains. **B. C. Benicewicz, R. Chen**

10:00—Intermission.

10:10—21. Experimental evidence for passivation by the organic metal. **B. Wessling**, J. Posdorfer

10:40—22. Fully sulfonated polyaniline (NSPAN) and aluminum interface: An ESCA study. **A. J. Epstein**, J. A. O. Smallfield,

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H. Guan, M. Fahlman

11:10—23. Corrosion prevention of cold rolled steel using water-dispersible lignosulfonic acid-doped polyaniline. **B. C. Berry**, A. U. Shaikh, T. Viswanathan

11:40—24. Corrosion inhibition by aniline trimers via charge transfer: A DFT approach. **L. T. Sein Jr.**, Y. Wei, S. A. Jansen

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

SUNDAY AFTERNOON

Section A

JW Marriott
Grand Salon I

Scanning Probe Microscopy of Polymers: The Next Generation

Microthermal and Chemical Probing

V. V. Tsukruk, N. D. Spencer, *Organizers*

A. Takahara, A. Karim, *Presiding*

1:30—25. Lateral distribution of functional groups at polymer surfaces by chemical force microscopy: Force-titration and force-volume measurements. **G. J. Vancso**, H. Schönherr, M. van Os, Z. Hruska, J. Kurdi, R. Förch, F. Arefi-Khonsari, W. Knoll

2:15—26. Microthermal characterization of polymers. **M. Reading**, D. M. Price, D. Grandy, H. M. Pollock, A. Hammiche

3:00—Intermission.

3:20—27. Characterization of the surface structural, mechanical, and thermal properties of benzocyclobutene dielectric polymers using scanned probe microscopy. **G. F. Meyers**, M. T. Dineen, E. O. Shaffer II, T. M. Stokich Jr., J-H. Im

3:50—28. Microthermal probing of polymers: Dynamic localized thermomechanical analysis, localized IR spectroscopy. **H. M. Pollock**, A. Hammiche, E. Dupas, D. M. Price, M. Reading, L. Bozec

4:20—29. Mapping chemically heterogeneous polymer system using chemical modification and atomic force microscopy. **D. Raghavan**, X. Gu, M. VanLandingham, T. Nguyen

Section B

JW Marriott
Capitol Salon E

Macromolecular Synthesis by Selective Chemical Modification

Block Copolymers

M. A. Hillmyer, S. F. Hahn, *Organizers*

M. A. Hillmyer, *Presiding*

1:30—30. Thermodynamics, kinetics, and mechanisms of the formation of multiple block copolymer morphologies. **A. Eisenberg**

2:00—31. Organically modified ceramic precursors for nanostructured block copolymer/inorganic hybrid materials. **U. B. Wiesner**

2:30—32. Selectively functionalized block copolymers for modification of thermosets. **F. S. Bates**, R. B. Grubbs, J. M. Dean, M. E. Broz, W. S. Saad

3:00—Intermission.

3:15—33. Morphological behavior and self-assembly of semicrystalline linear-dendritic block copolymers. M. A. Johnson, **P. T. Hammond**

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3:45—34. Synthesis and characterization of diblock copolymers containing surface-modifying moieties for nonbiofouling materials. S. H. Kang, **C. K. Ober**, E. J. Kramer

4:15—35. Synthesis and characterization of controlled architecture ionic/neutral block copolymer. J. Yang, **J. Mays**

4:45—36. Hydrogenation of styrenic block copolymers. **K. A. Johnson**

Section C

JW Marriott
Grand Salon II

4th International Biorelated Polymers Symposium

Biocompatible and Biodegradable Polymer Materials

R. M. Ottenbrite, A. V. Kabanov, *Organizers*

V. Labhasetwar, I. Szleifer, *Presiding*

1:30—Introductory Remarks.

1:35—37. Improved synthesis of ethyl α -hydroxymethylacrylate, a unique isomeric analog of HEMA. **J. M. Antonucci**, J. W. Stansbury, B. O. Fowler

2:05—38. Degradation behavior of porous poly(α -hydroxy acids)/hydroxyapatite composite scaffolds. **R. Zhang**, **P. X. Ma**

2:25—39. Polymer-ceramic composites for bone graft applications. **S. Bose**, A. Bandyopadhyay, H. L. Hosick, T. Myers

2:45—40. Potentially more blood-compatible polymers using nitric oxide release fumed silica fillers. **H. Zhang**, M. M. Batchelor, M. E. Meyerhoff

3:05—Intermission.

3:20—41. Evaluation of clustering effect of partial structure in heparin. **Y. Suda**, S. Koshida, A. Arano, T. Morichika, Y. Fukui, S. Kusumoto, M. Sobel

3:50—42. Structural studies of biorelated polymers derived from natural PHA and their synthetic analogs with the aid of electrospray multistage mass spectrometry. **M. Kowalczyk**, G. Adamus, W. Sikorska, J. Rydz

4:10—43. New matrices for controlled drug delivery. **A-C. Albertsson**, U. Edlund

4:30—44. Water-soluble ampholytic polymers as oral controlled-release carriers. M. Bari, **C-J. Kim**

4:50—45. Glucose-specific polymeric molecular imprints. **W. Wizeman**, P. Kofinas

Section D

JW Marriott
Capitol Salon F

Electroactive Polymers for Corrosion Control/Prevention

Synthesis and Mechanistic Studies

P. Zarras, J. D. Stenger-Smith, Y. Wei, B. Wessling, *Organizers*

B. C. Benicewicz, K. G. Thompson, Y. Wei, *Presiding*

1:30—46. Corrosion protection with conducting polymers: Protection mechanism, application guidelines, and its validity for commercial products. **F. A. Lux**

2:00—47. Polyaniline oxidation states and anticorrosion. **L. Chigirinskaya**, K. Levon

2:30—48. Stabilization and anticorrosion property of phenyl-capped and aniline tetramer as additives to common coating. **W. Zhang**, C. Wang, J. Gao, C. Chen, H. Qui, Y. Yu, L. Chen, Z. Wu

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3:00—49. De-doping/re-doping study of organic soluble polyaniline: Impact on corrosion protection. A. Dominis, G. Spinks, L. A. P. Kane-Maguire, **G. G. Wallace**

3:30—Intermission.

3:40—50. Assessment of electronic factors necessary for corrosion inhibition: An analysis of substituted aniline oligomers. **S. A. Jansen**, L. T. Sein, Y. Wei, T. Duong

4:10—51. Corrosion protection on mild steel using polyaniline emeraldine base by solvent-free technique. **X. Wang**, Y. Wang, J. Li, J. Lu, X. Jing, F. Wang

4:40—52. Polyaniline-metal interfaces: Implications for corrosion protection of steel and aluminum alloys. **M. Fahlman**, X. Crispin, H. Guan, S. Li, J. A. O. Smallfield, Y. Wei, A. J. Epstein

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

SUNDAY EVENING

Section A

Grand Hyatt
Independence Ballroom A

Poster Session

Characterization

R. B. Moore, *Organizer*

5:30—7:30

53. Core-shell morphology prediction via interfacial energy estimation and its application to polyacrylate-polysiloxane latex particles. **C. Kan**, X. Z. Kong, D. Liu

54. Curing behavior and thermal properties of cyanate ester-cured rigid rod epoxy resin. **W-F. Su**, C-M. Chuang

55. Interaction study of fullerene and single-wall carbon nanotubes with a conducting polyaniline. C-H. Song, B. C. Berry, T. Viswanathan, **W. Zhao**

56. Investigation of IR laser-induced photopolymerization of multifunctional acrylate by real-time FTIR spectroscopy. **S. Zhang Sr.**, B. Li, L. Tang, R. Yang, **Q. Zhou**

57. Thermal stability of thick tubular HDPE pipe with temperatures and heat-transfer fluids. **S. O. Han**, D. W. Lee, S. K. Woo

58. Wettability and protein adsorption on epoxidized HTPB-based polyurethane membrane. **J. M. Yang**, H. T. Lin

59. Novel ferromagnetic conducting lignosulfonic acid-doped polyaniline nanocomposite. **B. C. Berry**, D. Lindquist, J. P. Smith, T. Viswanathan

60. Interaction and plasticization of dioctyl phthalate in low-density polyethylene. **Y-T. Shieh**, C-M. Liu

61. Compressible RPA and its application to a phase segregating polymer blend. **J. Cho**

62. All-optical poling of a side-chain poly(urethane-imide) for second-order nonlinear optics. X. Yu, Y. Sui, **J. Yin**, Q. Li, X. Zhong, Y. Chen, Z. Zhu, Z. Wang

63. Side-chain poly(urethane-imide)s for second-order nonlinear optics. Y. Sui, **J. Yin**, Z. Hou, N. Zhu, J. Lu, Z. Zhu, Z. Wang

64. Central functionalized asymmetric triblock copolymers for surface modification with switchable surface properties. **J. Wang**, T. E. Long, T. C. Ward

65. Clustering behavior in three different acrylate ionomers. J-S. Kim, **J. Kim**, Y. H. Nah

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66. Positron annihilation lifetime (PAL) spectroscopy as a tool to study polyisoprene vulcanizate network structures. **P. E. Mallon**, Y. C. Jean, C. M. Huang, H. Chen, R. Zhang, M. H. S. Gradwell
67. Compatibilization of blends of poly(butylene-2,6-naphthalenedicarboxylate) and polycarbonate. **B. J. Chisholm**, R. Hendrix, P. M. Fong, M. Larsen
68. Controlled adsorption of end-functionalized polystyrene to tris(trimethylsiloxy)silyl binary mixed monolayers. **C. M. Stafford**, A. Y. Fadeev, T. P. Russell, T. J. McCarthy
69. Structural changes during swelling of poly[2-(*N,N*-dimethylamino)ethyl methacrylate-*l*-polyisobutylene (PDMAEMA-*l*-PIB) amphiphilic co-network. A. Domján, **B. Iván**, K. Süvegh, A. Vértes
70. Effect of hard segments on morphology of polyurethanes. **W. Kang, J. O. Stoffer**
71. Effect of thermal treatment on the morphology and physical properties of Nafion/dendrimer blends. **E. P. Taylor**, R. B. Moore
72. Hydrogel prepared from cationic copolymer. **Y. Zhong**, J. Jachowicz, P. Wolf, R. McMullen
73. Influence of orientation of functional bridge on the properties of liquid-crystalline polyacetylenes. **F. Salhi**, J. W. Y. Lam, J. A. K. Cha, B. Z. Tang
74. Development of fluorescence-based fiber-optic sensors for determining the degree of cure in thermosetting resins. S. K. Pollack, **C. A. James**
75. Ion-conductive polymer multilayers for electrochromic applications. **D. M. DeLongchamp**, P. T. Hammond
76. Matrix isolation effect of water-soluble poly(*p*-phenylenevinylene) in a lyotropic liquid-crystal nanocomposite. **K. Yonezawa**, D. L. Gin
77. Mean-square radius of gyration of poly(ethylene-*co*-propylene)s. Z. Zhou Sr., J. Li, X. Cai, **D. Yan**
78. Intercalation and mechanical properties of the SBS block copolymer and clay hybrid composites. **J. S. Park, S. Lee**, K. Lee, E. Kim, H. Lee
79. Morphologies of PC12 cells cultured on some polymeric membranes prepared by Langmuir-Blodgett and casting methods. **M. Hara**, T. Asakura, C-S. Cho, T. Akaike, A. Higuchi
80. Peptide-amphiphile induction of α -helical structures. P. Forns, **G. B. Fields**
81. Fluorescence studies of solvent-polymer interactions at poly(acrylic acid) grafts and their derivatives on polyethylene films. **G. Tao**, M. L. Liu, D. E. Bergbreiter
82. Melt crystallization of bisphenol A polycarbonate in polycarbonate/ionomer blends. **L. Xu**, R. A. Weiss
83. Miscible blends of a liquid-crystalline polymer and a sulfonated polystyrene ionomer. **H-S. Lee**, R. A. Weiss
84. Molecular ordering within ordered supermolecular structure. **L. Zhu**, S. Z. D. Cheng, Q. Ge, R. P. Quirk, B. Hsiao, F. Yeh
85. Monte Carlo simulation of single chain of high-performance polymer. S. Zhu, **D. Yan**
86. Random perfluorocyclobutyl copolymers with controlled optical properties. D. W. Smith Jr., **A. B. Hoeglund**, H. V. Shah, J. Ballato, C. Langhoff, S. F. Macha, P. A. Limbach
87. Solid-state ^{13}C NMR study of poly(methyl acrylate) ionomer. **J-S. Kim**, A. R. Lim
88. Structural investigation on physical aging in bisphenol A polycarbonate. **J. Lu**, Y. Wang, D. Shen
89. Synthesis and characterization of high T_g organo-soluble side-chain copolyimides containing a triazine-based azo chromophore. Y. Sui, **J. Yin**, X. Guo, Y. Liu, J. Gao, Z. Zhu, D. Huang, Z. Wang

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- 90.** Studies on in situ composites and properties of poly(ether ether ketone) and novel poly(aryl ether ketone) liquid crystalline containing fluorine. G. Wang, C. Chen, **Z. Jiang**, C. Yu, L. Zhang, W. Zhang, Z. Wu
- 91.** Experimental study of release and uptake in well-defined imprinted polymer films. **K. Das**, D. J. Duffy, S. L. Hsu, J. Penelle, V. M. Rotello
- 92.** Study on molecular movement and compatibility of polypropylene/polyester semi-interpenetrating polymer networks. F. Li, **J. Wang**, Y. Li, J. Jin, X. Tang
- 93.** Synthesis and study of a new polyorganophosphazene with pendant carbazolyl groups. **J. Wang**, F. Li, Y. Li, X. Tang
- 94.** Study on surface photovoltage properties of α -terthiophene derivatives. **C. Wang**, C. Cao, Y. A. Cao, Y. H. Shi, Z. M. Guo, T. J. Li
- 95.** Nature of aluminum deposited on a urethane-substituted polythiophene. J. E. Whitten, **H. Ahn**, H. Seung
- 96.** Rheological characterization of poly(ethylene oxide)/clay nanocomposites. **H. J. Choi**, S. G. Kim, Y. H. Hyun, M. S. Jhon
- 97.** Self-assembling morphologies of amphiphilic polyacetylenes containing amino acid moieties. **F. Salhi**, J. W. Y. Lam, K. K. L. Cheuk, J. A. K. Cha, B. Z. Tang
- 98.** Silver nanostructures on PEN and PET films. **B. Hu**, **R. M. Ottenbrite**, J. A. Siddiqui
- 99.** Graft polyelectrolyte layers on PEN and PET films. **B. Hu**, I. Germanenko, **R. M. Ottenbrite**, J. A. Siddiqui
- 100.** Stimuli-responsive release from porous silica/stimuli-responsive gel hybrid particle. **K. Suzuki**, T. Yumura, Y. Tanaka, M. Akashi
- 101.** Structure and morphology of poly(*meta*-phenylene isophthalamide) nanofibers produced by electrospinning. **W. Liu**, Z. Wu, D. H. Reneker
- 102.** Studies of chain conformation in triblock oligomers and multiblock copolymers of ethylene and ethylene oxide. **Y. Ding**, J. F. Rabolt, K. L. Olson, Y. Chen, G. L. Baker

Section B

Grand Hyatt
Independence Ballroom A

Poster Session

Synthesis

R. B. Moore, *Organizer*

5:30–7:30

- 103.** Accurate structure control of graft copolymers via well-defined polyfunctional macroinitiators for nitroxide-mediated "living" free-radical polymerization. **C. Cheng**, N-L. Yang
- 104.** Biocompatible macroligands: New subunits for the assembly of metal-containing polymers. **P. S. Corbin**, J. E. McAlvin, M. P. Webb, S. Shenoy, C. L. Fraser
- 105.** Development of polymerization processes based on palladium-mediated reactions. **Z. Wu**, D. Wang, P. Wei, J. Xu, X. Bi
- 106.** Norbornene polymerization with half-titanocene/MAO catalyst: Dependence of structure of the polymer on polymerization conditions. **Q. Wu**, J. He, Y. Lu, Z. Lu
- 107.** Soluble polyimides containing naphthalene structure. **C. S. Wang**, T. S. Leu
- 108.** Surface modification of poly(tetrafluoroethylene-*co*-hexafluoropropylene) (FEP) by adsorption of poly(L-lysine) and poly(acrylic acid). **W. Chen**, M. E. Evangelista, R. M. Y. Yeung
- 109.** Synthesis, characterization, and microstructure of poly(ethylene terephthalate) copolymers containing

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nitroterephthalic units. **D. P. R. Kint**, A. Martínez de Ilarduya, S. Muñoz-Guerra

110. Anionic living polymerization of *n*-hexyl isocyanate. S-Y. Kim, J-H. Ahn, Y-D. Shin, **J-S. Lee**

111. Triarylphosphine oxide-based benzazole polymers for potential space applications. **T. D. Dang**, N. C. Thiesing, W. A. Feld, N. Venkatasubramanian, C. A. Cerbus, F. E. Arnold

112. Use of carbohydrate reagents for the polymerization and oligomerization of dicyanoalkenes and -arenes. **D. J. Sandman**, M. A. Rixman, Z. Tsai, D. Wu, I-B. Kim

113. Gel formation between thermoplastic polyurethane and poly(ethylene-*co*-vinyl alcohol) during blend processing. **D. D. Jiang**, R. F. Storey

114. New initiating system for controlled radical polymerization of butyl methacrylate. **W. Wang**, D. Yuping, L. Qianshu

115. Anionic synthesis and characterization of poly(styrene-*block*-1-butene oxide) block copolymers and their application in anionic dispersion polymerization. **Q. Ge**, R. P. Quirk

116. Anionic polymerization of 3-nitro-9-ethylcarbazolyl methacrylate. **Y-S. Cho**, J-S. Lee

117. Bergman cyclopolymerization of bisphenol-A-derived tetraynes. D. W. Smith Jr., **K. P. U. Perera**, K. A. Abboud

118. Chemical modification of buried interfaces using supercritical carbon dioxide. **X. Jia**, T. J. McCarthy

119. Chiral induction in radical polymerization of maleimide derivatives using optically active cobalt(II) complexes. **T. Nakano**, D. Tamada, J-I. Miyazaki, K. Kakiuchi, Y. Okamoto

120. Convenient method for the preparation of poly(ethylene oxide) and poly(ethylene oxide) block copolymers. **D. H. Adamson**

121. Cycloliner phosphazenes via acyclic diene metathesis polymerization. **E. C. Kellam III**, M. A. Hofmann, H. R. Allcock

122. End-group functionalization of regioregular head-to-tail poly(3-alkylthiophene)s. **J. Liu**, **R. D. McCullough**

123. Free-radical grafting of hindered phenol antioxidants onto low molecular weight PE. T. H. Kim, **D. R. Oh**

124. Influence of bisphenol structure on the direct synthesis of sulfonated poly(arylene ether)s. **W. Harrison**, F. Wang, J. B. Mechem, K. O'Connor, J. E. McGrath

125. Linear and star liquid-crystalline polymers prepared using atom transfer radical polymerization. S. M. Ruder, **A. Datta**, S. D. Allen

126. Poly(styrene-divinylbenzene)-bound platinum complex in hydrosilylation of unsaturated hydrocarbons. C. Kan, **X. Z. Kong**, D. Liu

127. Polycyclotrimerization of internal diynes: Synthesis of hyperbranched poly(alkenophenylenes). **K. Xu**, H. Peng, Y. Huang, Z. Xu, B. Z. Tang

128. Polymerization of poly(propylene glycol)methacrylate by ATRP. **B. L. Sadicoff**, A. E. Acar, L. J. Mathias

129. Inclusion complexes of α -cyclodextrin and (AB)_n block copolymers. **K. L. Olson**, Y. Chen, G. L. Baker

130. New approaches to polyethylene-functionalized ligands for atom transfer radical polymerization. **M. E. Pallack**, S. Liou, W. J. Brittain

131. Segmented amine-epoxy-based thermosetting elastomers. D. W. Smith Jr., **T. W. Baughman**, E. J. Nelson, S. H. Foulger

132. New methacrylate derivatives based on pyroglutamic acid. **T. J. Smith**, L. J. Mathias

133. Phosphatidylcholine-functional surfaces via sequential grafting reactions. S. K. Pollack, **Y. S. Bullen**

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- 134.** Photoconductive polyimides based on bisphenyl-porphyrin: Synthesis and characterization. B. Zhu, **Z. Xu**, Y. Xu
- 135.** Synthesis and characterization of a novel AB₂ monomer and corresponding hyperbranched poly(arylene ether phosphine oxide)s. **Q. Lin**, T. E. Long
- 136.** Photoconductive polyimides based on bisphenyl-porphyrin: Structure and photoconductive properties of polyimide and their precursor films. B. Zhu, **Z. Xu**, Y. Xu
- 137.** Synthesis and characterization of polyimides prepared from sulfone, carbonyl, and phosphine oxide-containing diamines. **D. J. Klein**, R. G. Bryant
- 138.** Photolysis of iodonium salts in the presence of 1-naphthol and 1-methoxynaphthalene. **H. Gu**, W. Zhang, D. C. Neckers
- 139.** Synthesis and characterization of novel fluorine-containing polyarylate. B. Liu, Y. Dong, W. Hu, **C. Chen**, G. Wang, Z. Wu
- 140.** Poly(*p*-phenylene)s with poly(ethylene oxide) as pendant groups. **F. H. Asfour**, C. Ruud, G. L. Baker
- 141.** Synthesis and luminescent properties of a novel rigid-rod alternating copolymer containing oligo(ethylene oxide) side chains. **H. Cheng**, H. Wei, G. Jian, Y. Chang-zheng
- 142.** Synthesis and optical properties of naphthalene-containing conjugated polymers. **Z. Peng**, Y. Pan
- 143.** Synthesis and polymerization of phosphorus-containing acrylates. **D. Avci**, L. J. Mathias
- 144.** Polysilsesquioxanes through base-catalyzed redistribution of oligomethylhydridosiloxanes. **K. Rahimian**, D. P. Lang, D. A. Loy
- 145.** Synthesis and polymerization of styryloxycyclophosphazene derivatives. **D. Hernández-Rubio**, C. W. Allen
- 146.** Synthesis and characterization of polyphosphazenes with sulfur-bearing substituents. H. Ma, **Y. Li**, S. Liu, J. Wang, X. Tang
- 147.** Radical reactions of 3,4-dimethoxy-1-butene in the presence of a redox initiator system. **Y. Yoo**, L. K. Johnson, A. J. Pasquale, T. E. Long
- 148.** Synthesis of block copolymer containing poly(styrene-*alt*-*N*-phenylmaleimide) by stable free-radical polymerization. **C-G. Cho**, T. E. Chang, K-D. Ahn
- 149.** Synthesis of polyols of various structures with narrow molecular weight distribution for different applications. **O. N. Piraner**, **M. Balasubramanian**
- 150.** Effects of increasing P₂O₅ content in polyphosphoric acid by POCl₃. **Y-H. So**, M. T. Bishop, R. M. VanEffen, B. L. Kaliszewski
- 151.** Ring-opening polymerization of 1,1-dicyanocyclopropane. **L. Kagumba**, J. Penelle
- 152.** Toward the synthesis of C-glycoside dendrimers. M. J. Panigot, **S-U. Kim**, **M. W. Arnold**, A. Bailey, D. Bailey, J. L. Faulkner, J. Middleton
- 153.** Stereospecific polymerization of methylmethacrylate with bisindenyl-lanthanide complexes. **S. Y. Knjzhaniski**, H. R. López-González, L. Larios-López, G. Cadenas
- 154.** Study on synthesis and LC behaviors of novel ternary polyurethanes. Y. Lian, **D. Liu**, Q. Zhou
- 155.** Sulfonated aromatic diamines as precursors for polyimides for proton-exchange membranes. **H. K. Shobha**, M. Sankarapandian, T. E. Glass, J. E. McGrath
- 156.** Surface-initiated atom transfer radical polymerization on gold at ambient temperature. **J-B. Kim**, M. L. Bruening, G. L.

2000 Fall meeting

Baker

- 157.** Surface-initiated radical polymerization on gold using stabilized initiator monolayers. **W. Huang**, S. Ganesan, M. L. Bruening, G. L. Baker
- 158.** Syndiospecific radical polymerization of methyl methacrylate in the presence of syndiotactic poly(methyl methacrylate). **M. Nodono**, T. Makino, K. Nishida
- 159.** Synthesis and characterization of copoly(acrylate)s with silane functional groups in the side chain. **S. Hait**, D. E. Nikles
- 160.** Synthesis and characterization of novel biodegradable poly(ester-carbonates). R. F. Storey, **B. D. Mullen**
- 161.** Synthesis and characterization of novel chlorosilyl functional polyisobutylene. **I-J. Kim**, R. Faust
- 162.** Synthesis and characterization of polymers containing diketopiperazine. **D. A. Parrish**, L. J. Mathias
- 163.** Synthesis and microstructural analysis of poly(alkyl 1-cyanocyclopropanecarboxylates). **L. Kagumba**, J. Penelle
- 164.** Synthesis of polymer brushes on silicate substrates by reversible addition fragmentation chain-transfer technique. **M. Baum**, W. J. Brittain
- 165.** Synthesis of soluble and controllable cross-linking poly(aryl ether ether ketone)s. Z. Gao, T. Ben, X. Liu, H. Cao, H. Qiu, **C. Chen**, Z. Wei, Z. Wu, W. Zhang
- 166.** Synthesis of stable and luminescent hyperbranched poly(alkenophenylenes) via copolycyclotrimerization of diynes and monoynes. **K. Xu**, H. Peng, P. P. S. Lee, Y. Dong, B. Z. Tang
- 167.** Thiophene polymerization in an ultrathin hyperbranched graft on a polyethylene film substrate. **M. L. Liu**, G. Tao, D. E. Bergbreiter

Section C

Grand Hyatt
Independence Ballroom A

Poster Session

Electroactive Polymers for Corrosion Control/Prevention

P. Zarras, J. D. Stenger-Smith, Y. Wei, B. Wessling, *Organizers*
P. Zarras, *Presiding*

5:30-7:30

- 168.** Scanning vibrating electrode study of chromated-epoxy coatings on steel and aluminum. **J. He**, V. J. Gelling, D. E. Tallman, G. P. Bierwagen
- 169.** Amine-quinone polyurethanes. M. Han, R. Sharma, Y. Hu, G. W. Warren, **D. E. Nikles**
- 170.** New amine-quinone polyimides for protecting iron against corrosion. **M. Han**, H. Bie, D. E. Nikles, G. W. Warren
- 171.** Adhesion properties of aniline oligomers and their epoxy resin-cured derivatives over cold rolled steel. Y. Wei, **H. Jamasbi**, S. Li, S. A. Jansen, L. T. Sein, S. Cheng
- 172.** Conducting polypyrrole on an epoxy substrate: Effect of surface pretreatment. **R. Van den Schoor**, M. Krupers, R. Van de Leur, H. De Wit
- 173.** Impedance studies of polyaniline epoxy coatings. **A. Talo**, T. Sammi, M. Tiitu, O. Ikkala, O. Forsén
- 174.** Regioregular polymerization of 3-semifluoroalkylthiophenes. **X. M. Hong**, J. C. Tyson, X. Wu, D. M. Collard
- 175.** Rubber-modified water-soluble polyaniline latex. **C. Kuo**, L. Y. Chiang, J. Kumar, L. Samuelson, S. K. Tripathy
- 176.** Study of poly(3-octyl pyrrole) for corrosion control of aluminum 2024-T3. **V. J. Gelling**, D. E. Tallman, G. P.

2000 Fall meeting

Bierwagen, G. G. Wallace

177. Synthesis and characterization of poly(aniline-*co*-anthranilic acid)s. **S. Baek**, M. Ree

Section D

JW Marriott
Grand Salon II

Business Meeting
6:30—Business Meeting.

MONDAY MORNING

Section A

JW Marriott
Grand Salon I

Scanning Probe Microscopy of Polymers: The Next Generation

Polymer Morphology and Microstructure

V. V. Tsukruk, N. D. Spencer, *Organizers*

M. J. Miles, G. J. Vancso, *Presiding*

8:30—178. Phase-separated microstructures in "all-acrylic" thermoplastic elastomers. **P. Leclère**, A. Rasmont, J-P. Aimé, R. Jérôme, J-L. Brédas, R. Lazzaroni

9:00—179. Atomic force microscopy studies of phase ordering in polymer blends and clay-filled systems. **V. Ferreira**, J. F. Douglas, A. Karim, G. Coulon

9:30—180. Evolution of lamellar structure during crystallization of a binary semicrystalline-amorphous blend: Time-resolved hot-stage SPM study. **D. A. Ivanov**, C. Basire

9:50—181. In situ AFM of the crystallization of polyethylene. **J. K. Hobbs**, M. J. Miles

10:10—Intermission.

10:30—182. Scanning probe imaging and nanoindentation studies of model pressure-sensitive adhesives and their aging. **M. D. Foster**, A. Paiva

10:50—183. Scanning force microscopy of polyester: Surface structure and adhesive properties. **G. J. Leggett**, B. D. Beake, N. J. Brewer

11:10—184. Elastomers from α,ω -dihydroxy polydimethylsiloxane and the ethoxysiloxane mixture "ES40": Bulk characterization and surface features. **J. Ulk**, S. Bullock, E. Johnston, K. J. Wynne, L. Merwin, S. Myers

11:30—185. Patterns in biopolymers and other biological systems as observed by atomic force microscopy. **I. V. Yaminsky**

Section B

JW Marriott
Capitol Salon E

Macromolecular Synthesis by Selective Chemical Modification

M. A. Hillmyer, S. F. Hahn, *Organizers*

M. A. Hillmyer, *Presiding*

8:15—186. Hyperbranched and dendrimer-like architectures by chemical modification of polymer termini. **Y. Gnanou**, D. Taton, S. Lecommandoux, M. Saule

8:45—187. Hyperbranched molecular objects elaborated via successive living ionic polymerization/chemical modification steps. **A. Defieux**, Z. Muchtar, M. Schappacher

2000 Fall meeting

9:15—188. Preparation of nanoscopically resolved amphiphilic networks from the hybridization of hyperbranched fluoropolymers and linear poly(ethylene glycol)s. **K. L. Wooley**, D. Gan

9:45—Intermission.

10:00—189. Postpolymerization ion-exchange and chemical modification of cross-linked lyotropic liquid-crystal networks. J. H. Ding, W-J. Zhou, D. H. Gray, **D. L. Gin**

10:30—190. Functionalized polymers for catalysis and polymer synthesis. **H. Alper**

11:00—191. ADMET polymerization in the preparation of hydrocarbon polymers containing amino acid-based functionalities. T. E. Hopkins, J. H. Pawlow, F. J. Gómez, S. M. Solivan, J. A. Davis, K. S. Deters, D. L. Koren, **K. B. Wagener**

11:30—192. Synthesis of new hydrophilic γ -substituted poly- ϵ -caprolactones. **P. Lecomte**, V. D'aloia, M. Mazza, O. Halleux, S. Gautier, C. Detrembleur, R. Jerome

Section C

JW Marriott
Grand Salon II

4th International Biorelated Polymers Symposium

Nanoparticles and Block Copolymers for Drug Delivery and Gene Therapy

A. V. Kabanov, R. M. Ottenbrite, *Organizers*
P. Alexandridis, E. H. Schacht, V. Alakhov, *Presiding*

8:30—Introductory Remarks.

8:35—193. SP1017: A nonviral carrier system for gene expression in skeletal muscle and dermal tissues. **V. Alakhov**, P. Lemieux

9:05—194. Transfection of Caco-2 cells by PLGA-nanoparticles. W-Z. Zhou, **V. Labhasetwar**

9:35—195. Architecture of polymer micelles from block copolymers of lactide and depsipeptide as drug carriers. **T. Ouchi**, H. Miyazaki, F. Tasaka, A. Hamada, Y. Ohya

10:05—196. Selective energy depletion and sensitization of multiple drug-resistant cancer cells by pluronic block copolymers. **E. V. Batrakova**, S. Li, V. Y. Alakhov, A. V. Kabanov

10:25—Intermission.

10:40—197. Novel drug delivery systems: Nanogel networks. **S. Vinogradov**, E. V. Batrakova, A. V. Kabanov

11:00—198. Thermally responsive amphiphilic block polypeptides for drug encapsulation. **Y. Zhou**, V. P. Conticello

11:20—199. Reactive stabilization of vesicles from cationic surfactants self-assembled on anionic block ionomer template. **T. K. Bronich**, M. Ouyang, A. Eisenberg, V. Kabanov, F. C. Szoka Jr., A. V. Kabanov

11:40—200. Solvation dynamics in unimolecular polymeric micelles. **L. Frauchiger**, H. Shirota, E. W. Castner Jr., K. Uhrich

Section D

JW Marriott
Capitol Salon F

Electroactive Polymers for Corrosion Control/Prevention

Synthesis and Testing

P. Zarras, J. D. Stenger-Smith, Y. Wei, B. Wessling, *Organizers*
S. C. Yang, B. Wessling, K. J. Wynne, *Presiding*

2000 Fall meeting

8:15—201. Scanning vibrating electrode study of electronically conducting polymers on aluminum alloy. J. He, V. J. Gelling, **D. E. Tallman**, G. P. Bierwagen

8:45—202. Electroactive polymers for corrosion inhibition of aluminum alloys. **S. C. Yang**, R. Brown, R. Racicot, Y. Lin, F. McClarnon

9:15—203. Corrosion protection properties of coatings of the aniline oligomers and their epoxy resin-cured derivatives based on salt spray and cyclic testing. **Y. Wei**, H. Jamasbi, S. Li, S. A. Jansen, L. T. Sein, S. Cheng

9:45—204. Amine-quinone polymers: A new class of corrosion-resistant coatings. H. Bie, M. Han, A. B. Helms, **G. W. Warren**, D. E. Nikles, S. C. Street

10:15—Intermission.

10:25—205. Unique method of aniline/DBSA polymerization in aqueous dispersions: Blending with polymers and encapsulation of fillers. **M. Narkis**, E. Segal, Y. Haba, W. Jia, A. Siegmann

10:55—206. Corrosion protection of mild steel with polyaniline. T. Schauer, **H. W. Greisiger**, C. D. Eisenbach

11:15—207. Functionalized conducting polymer for coatings on metals. **W. Li**, S. C. Yang

11:35—208. Sulfur-quinone polyurethanes and the protection of iron against corrosion. Y. Hu, A. B. Helms, **D. E. Nikles**, S. C. Street, G. W. Warren, D. Yang

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

MONDAY AFTERNOON

Section A

JW Marriott
Grand Salon I

Scanning Probe Microscopy of Polymers: The Next Generation

Thin Polymer Films

V. V. Tsukruk, N. D. Spencer, *Organizers*
A. J. Lovinger, M. H. Rafailovich, *Presiding*

1:30—209. AFM studies of confined dewetting on gradient patterned surfaces. **A. Karim**, A. Sehgal, E. J. Amis

2:00—210. Scanning force microscopic observation of the protein adsorption behavior onto the surface of organosilane monolayers prepared by the Langmuir-Blodgett method. **A. Takahara**, Y. Hara, K. Kojio, T. Kajiyama

2:30—211. Oligo(ethylene glycol)-terminated monolayers under electrolyte solution studied with scanning force microscopy. **G. Hähner**, C. Dicke, K. Feldman, W. Eck, S. Herrwerth

3:00—Intermission.

3:20—212. Characterization of poly(amidoamine) dendrimer packing by atomic force microscopy. **J. Li**, D. Qin, J. R. Baker Jr., D. A. Tomalia

3:40—213. Atomic force microscopy of tethered diblock copolymers. **W. J. Brittain**, B. Zhao, W. Zhou, S. Z. D. Cheng

4:00—214. Near-field scanning optical microscopy studies of nanoscale polymer ordering in thin films of poly(9,9-dialkylfluorene). **J. A. Teetsov**, D. A. Vanden Bout

4:20—215. Electrochemical AFM on surface-grafted poly(ferrocenylsilanes). **M. Péter**, M. A. Hempenius, R. G. H. Lammertink, M. T. van Os, G. J. Vancso

Section B

2000 Fall meeting

JW Marriott
Capitol Salon E

Macromolecular Synthesis by Selective Chemical Modification

M. A. Hillmyer, S. F. Hahn, *Organizers*
J. W. Mays, *Presiding*

1:20—216. Pyrenyl attachment to polyethylene is more selective with MeV-range particles than with eV-range photons. G. O. Brown, N. A. Guardala, J. L. Price, **R. G. Weiss**

1:40—217. Novel synthesis and modification of polymers via electron transfer. **Z. Jedlinski**, H. Janeczek, I. Bosek

2:00—218. Epoxidation of degraded poly(vinyl chloride). T. Szakács, **B. Iván**

2:20—219. Withdrawn.

2:20—220. Synthesis and catalytic hydrogenation of poly(1,3-cyclohexadiene) star-shaped polymers. D. T. Williamson, K. P. Brazhnik, J. F. Elman, A. J. Pasquale, **T. E. Long**

2:40—Intermission.

3:00—221. Chemical modification of polyolefins. **A. O. Patil**

3:20—222. Synthesis of biomedical graft-copolymers using polysaccharides as backbone polymers. **T. Ouchi**, T. Hirano, S. Maruhashi, H. Nishizawa, K. Shizuno, Y. Ohya

3:40—223. Synthesis of regioselectively functionalized polysaccharide esters avoiding protecting groups. **R. Dicke**, D. O. Klemm

4:00—224. Synthesis of novel branched polylactides and their biodegradation. **F. Tasaka**, H. Miyazaki, Y. Ohya, T. Ouchi

4:20—225. Nickel-mediated atom transfer radical polymerization of side-group siloxane-containing block copolymers for controlled wettability. **J. P. Youngblood**, T. J. McCarthy

Section C

JW Marriott
Grand Salon II

4th International Biorelated Polymers Symposium

Bioconjugated Nanocomposite Materials and Polymer Gels for Pharmaceutical Applications

A. V. Kabanov, R. M. Ottenbrite, *Organizers*
L. E. Bromberg, Y. Nagasaki, *Presiding*

1:30—Introductory Remarks.

1:35—226. Novel synthesis of PEG/polycation block copolymers possessing a reactive PEG-end group for high-performance gene targeting. **Y. Nagasaki**, D. Wakebayashi, Y. Akiyama, A. Harada, K. Kataoka

2:05—227. Creating functional groups on polymer surfaces with ω -functional surface-active block copolymers. **J. Chen**, Q. Fu, D. A. Smith, J. T. Koberstein

2:25—228. Reconstitution of thrombomodulin into polymerizable phospholipid vesicles. **J. Feng**, E. L. Chaikof

2:45—229. Preparation of liposomes containing dibranched amino acids and characterization of their glucose-binding properties. **H. Seong**, W-M. Choi, J-C. Kim, D. H. Thompson, K. Park

3:05—230. Bioconjugates of protein transduction domain and shell cross-linked nanoparticles: Nanostructured materials designed for cell delivery. **J. Liu**, Q. Zhang, K. L. Wooley

3:25—Intermission.

2000 Fall meeting

3:40—231. Modeling of drug release from polymer matrix via diffusion and erosion. S. S. Talukdar, L. Yang, **P. Alexandridis**

4:00—232. Diffusivity of 3-D, ionically cross-linked alginate hydrogels. **C. K. Kuo**, P. X. Ma

4:20—233. Predicting degradation behavior of PLA-*b*-PEG-*b*-PLA hydrogels. **A. T. Metters**, K. S. Anseth, C. N. Bowman

4:40—234. Engineering dynamic structure and activity in artificial protein hydrogels. **S. B. Kennedy**, T. P. Russell, D. A. Tirrell

5:00—235. Rheology of pressure-sensitive adhesive hydrogels designed for skin application. **S. V. Kotomin**, T. A. Borodulina, M. M. Feldstein, V. G. Kulichikhin

5:20—Concluding Remarks.

Section D

JW Marriott
Capitol Salon F

General Session

Novel Polymer Architectures

R. B. Moore, *Organizer*

K. L. Wooley, *Presiding*

1:30—236. Control of polymer structure: Organization by noncovalent interactions. **G. Clavier**, F. Ilhan, T. H. Galow, M. Gray, V. Rotello

1:50—237. Dendripore and dendrilock concepts: New controlled-delivery strategies. **R. Esfand**, D. A. Tomalia, A. E. Beezer, J. C. Mitchell, M. Hardy, C. Orford

2:10—238. Microgel formation in highly cross-linked polymers: Simulated and experimental results. **J. B. Hutchison**, K. S. Anseth

2:30—239. Radical-based preparation of block copolymers containing fluorine tags: Tools for detailed analysis of nanostructured materials. **M. L. Becker**, K. L. Wooley

2:50—240. Synthesis and characterization of novel nanostructured polymers enhanced by hydrogen bonding using liquid-crystal monomers. **W.-J. Zhou**, D. Gin

3:10—241. Pom-pom polystyrene by convergent living anionic polymerization. **D. M. Knauss**, T. Huang

3:30—242. Synthesis of functional star-shaped polymers by living cationic polymerization. **S. Kanaoka**, T. Higashimura

3:50—243. Interpolymer complexes through hydrophobic interactions: C₆₀-end-capped poly(ethylene oxide)/poly(acrylic acid) complexes. **X. D. Huang**, S. H. Goh

4:10—244. Synthesis of linear and hyperbranched poly(silyl ester)s via cross-dehydrocoupling-based polymerization. **M. Wang**, D. Gan, K. L. Wooley

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

TUESDAY MORNING

Section A

JW Marriott
Grand Salon I

2000 Fall meeting

Scanning Probe Microscopy of Polymers: The Next Generation

Microtribology and Applications

V. V. Tsukruk, K. J. Wahl, *Presiding*

8:30—245. Interfacial force microscopy: Application to polymer surfaces. **J. E. Houston**, R. M. Winter

9:00—246. Molecular-level interpretations of frictional force data collected with atomic force microscopy: Chain-length effects in self-assembled organic monolayers. **S. S. Perry**, S. Lee, T. R. Lee, M. Graupe, A. Puck, R. Colorado, R. Colorado Jr., I. Wenzl

9:30—247. Nanometer-scale structural, tribological, and optical properties of ultrathin poly(diacetylene) films. **R. W. Carpick**, D. Y. Sasaki, A. R. Burns

10:00—Intermission.

10:20—248. AFM study of positive chemically amplified resists. **Q. Lin**, R. Sooriyakumaran, W-S. Huang

10:40—249. Sliding friction between cellulose and silica surfaces. **G. Bogdanovic**, F. Tiberg, M. W. Rutland

11:00—250. AFM analysis of mass-produced nanostructures. **D. A. Chernoff**, C. S. Cook, D. L. Burkhead

11:20—251. Indentation behavior of the polymer third body generated in a PMMA/steel contact. **A. Chateauinois**, B. J. Briscoe, D. Parsonage

Section B

JW Marriott
Capitol Salon E

Industrial Sponsors Award

E. Sybertz, *Organizer, Presiding*

9:00—Introductory Remarks. **G. Whitesides**

9:25—252. New generation of nonabsorbed, lipid-lowering polymers. **W. H. Mandeville**

9:50—253. Polymers as novel drug delivery systems. **K. E. Uhrich**

10:15—254. Current research in polymeric pharmaceuticals. **S. R. Holmes-Farley**

10:40—255. Second-generation PEG-protein pharmaceuticals. **M. J. Roberts**, M. D. Bentley, J. M. Harris

11:05—256. Self-assembly of block copolypeptides. **T. J. Deming**

11:30—257. Synthetic and biosynthetic polymers with stimuli-responsive microdomains in aqueous media. **C. L. McCormick**, R. S. Armentrout, G. C. Cannon, G. G. Martin

Section C

JW Marriott
Grand Salon II

General Session

Composites and Blends

R. B. Moore, *Organizer*
K. R. Carter, *Presiding*

8:30—258. Composite prepared from epoxidized soybean oil. **P. Lu**, J. O. Stoffer, R. A. Babcock, L. R. Dharani

8:50—259. Fabrication and properties of new aramid fiber-cyanate ester composites. **M. Sankarapandian**, P. Shih, V. Gabara, G. L. Hendren, A. C. Loos, J. E. McGrath

2000 Fall meeting

9:10—260. Self-encapsulation of poly-2,7-fluorenes in a dendrimer matrix. D. Marsitzky, R. Vestberg, C. J. Hawker, **K. R. Carter**

9:30—261. Molecular weight and temperature dependence of the interfacial tension of PS/PDMS blends using imbedded fiber retraction method. **G. Biresaw**, C. J. Carriere

9:50—262. Polymer-mediated "bricks-and-mortar" self-assembly of nanoparticles into discrete structured arrays. **F. Ilhan**, A. K. Boal, V. Rotello

10:10—263. Phosphine oxide containing polymer-based metal salt/polymer and silica/polymer hybrid nanocomposites. **S. Wang**, H. Zhuang, M. Sankarapandian, H. K. Shobha, A. R. Shultz, J. E. McGrath

10:30—264. Macromolecular engineering using novel alkoxyamines. **Y. Gnanou**, S. Robin, O. Guerret, J. L. Couturier

10:50—265. Rod/coil blends via specific interactions: Miscibility and properties. **D. R. Dean**, N. Venkatasubramanian, T. D. Dang, G. E. Price, F. E. Arnold

11:10—266. Synthesis of aminopropyltriethoxysilane catalyzed organo-silica hybrid nanoparticles. R. M. Ottenbrite, **J. S. Wall**, J. A. Siddiqui

Section D

JW Marriott
Capitol Salon F

General Session

Functional Polymeric Materials

R. B. Moore, *Organizer*
K. E. Uhrich, *Presiding*

8:30—267. Azobenzene containing photodynamic polymers from post-azo-coupling reaction. Y. He, H. Yang, **X. Wang**, Q. Zhou

8:50—268. Thermomorphic systems for Heck catalysis and metal sequestration. **J. D. Frels**, D. E. Bergbreiter, P. L. Osburn

9:10—269. Enzymatic synthesis of poly(4-hydroxystilbene): A new class of luminescent material. **P. Wu**, W. Liu, S. Balasubramanian, J. Kumar, L. Samuelson, S. K. Tripathy

9:30—270. Photocurable polymers based on methacrylates and dimethacrylates containing carbazole. J. E. McGrath, **L. Rasmussen**, H. Shobha, M. Sankarapandian, K. E. Uhrich

9:50—271. Polymer electrolytes based on ethylene oxide-segmented microblock copolymers. K. A. Swan, **M. K. Stowe**, Y. Chen, J. Qiao, G. L. Baker

10:10—272. Synthesis of novel, degradable polyanhydrides containing *para*-aminosalicylic acid as drug delivery devices for tuberculosis treatment. **T. J. Anastasiou**, K. E. Uhrich

10:30—273. Synthesis and characterization of novel silicone magnetic materials. J. S. Riffle, **M. Rutnakornpituk**, M. Vadala, K. S. Wilson, J. K. Hoyt

10:50—274. Mechanism of interactions between unimolecular polymer micelles and lipid bilayers. **L. N. Albers**, K. E. Uhrich

11:10—275. Synthesis and characterization of phosphine oxide diol modified epoxy adhesives. **M. A. Hickner**, A. Banthia, J. E. McGrath

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

TUESDAY AFTERNOON

2000 Fall meeting

Section A

JW Marriott
Grand Salon I

Scanning Probe Microscopy of Polymers: The Next Generation

Micromechanical Probing

V. V. Tsukruk, N. D. Spencer, *Organizers*

J. E. Houston, G. F. Meyers, *Presiding*

1:30—276. Relationship between the increase of vibrating cantilever dissipation and relaxation processes at the molecular scale. G. Couturier Sr., **J-P. Aimé**, J. Salardenne, A. Gourdon, S. Gauthier

2:00—277. Sliding transitions, mechanics, and dissipation in nanoscale contacts. **K. J. Wahl**, S. A. S. Asif, R. J. Colton

2:30—278. Tapping mode atomic force microscopy study of elastomers: Dynamics of tip-sample interaction. **G. Bar**, L. Delineau, R. Brandsch, M-H. Whangbo

3:00—Intermission.

3:20—279. Size and confinement effects in thin polymer films. **R. M. Overney**

3:50—280. Scaling relationships for indentation measurements. **Y-T. Cheng**, C-M. Cheng

4:20—281. Viscoelastic energy dissipation and time-dependent adhesion hysteresis of polydimethylsiloxane networks on the nanometer scale with atomic force microscopy. **J. P. Pickering**, D. Krüger, B. Anczykowski, H. Fuchs, G. J. Vancso

4:40—282. New directions in tapping mode AFM of polymers: Toward full control of tip-sample forces and high resolution. **T. Kowalewski**

5:00—Concluding Remarks.

Section B

JW Marriott
Capitol Salon E

Enviro-Compatible Syntheses and Processes: Targeting Sustainability

Tutorial Lectures

Cosponsored with Division of Polymeric Materials: Science & Engineering

R. A. Gross, H. N. Cheng, G. Swift, *Organizers*

H. N. Cheng, *Presiding*

1:30—283. Biotechnology: The third wave. **B. L. Marrs**

2:15—284. In vitro enzyme-catalyzed polymer synthesis. **R. A. Gross**, A. Kumar, B. Kalra

3:00—Intermission.

3:15—285. CO₂ technology platform for sustainable manufacturing. **J. M. DeSimone**

4:00—286. Green chemistry and the polymer industry. **G. Swift**

Section C

JW Marriott
Grand Salon II

Emerging Frontiers in Polyolefins

Tutorials

T. E. Hanlon, P. Arjunan, *Organizers, Presiding*

2000 Fall meeting

1:30—Introductory Remarks.

1:35—287. Overview of synthesis and basic chemical structure/physical property relationships in polyolefins. **J. E. McGrath**

2:05—288. Advances in single-site catalysis for olefin polymerization. **P. Brant**

2:50—289. Role activators in single-site olefin polymerization. **T. J. Marks**

3:35—Intermission.

3:45—290. Olefin polymerization by nonmetallocene group 4 metal complexes. **R. R. Schrock**

4:30—291. Advanced polyolefin characterization: Molecular architecture to solid-state microstructure. **A. H. Tsou**, T. Sun, M. L. Lyon, W. Hu, D. W. Abmayr Jr.

Section D

JW Marriott
Capitol Salon F

Polymer Materials for the 21st Century: Industrial Sponsors Program

M. Jaffe, R. M. Ottenbrite, *Organizers*

M. Jaffe, *Presiding*

2:00—Introductory Remarks. **M. Jaffe**

2:15—Making substantial that which is superficial: The future of adhesion and polymer-based additives. **A. V. Pocius**

2:55—Polymer science and knowledge intensity in coatings systems. **D. Engel**

3:35—NASA: Polymers for the future. **A-M. McGowan**

4:15—New polyolefin structures by coordination polymerization of ethylene and propylene monomers. **P. Brant**

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

TUESDAY EVENING

Section A

Convention Center
Exhibit Hall D

Joint PMSE/POLY Poster Session

4th International Biorelated Polymers Symposium

A. Kabanov, R. M. Ottenbrite, *Organizers*

6:00–8:00

292. Permeation of γ -globulin through microporous membrane under existence of trace DNA. **K. Hirano**, A. Komuro, M. Hara, M. Yokogi, S-I. Manabe, A. Higuchi

293. Synthesis of dendritic amphiphilic block copolymers by ATRP. **S-G. An**, C-G. Cho

294. Use of poly(ethylene oxide) nonionic surfactants as templates for enzyme-containing mesoporous sol-gel materials. **J. Xu**, H. Dong, Q. Feng, Y. Wei

295. Development of phase structure during the processing of poly(L-lactic acid) scaffolds for tissue engineering. **S-H. Zhu**, P. X. Ma

296. Cyclic voltammetric analysis of methyl viologen in water and sulfonated polymer membranes. **S. Kaur**, D. Michalak,

2000 Fall meeting

G. M. Florio

- 297.** Selective anion sorption and recovery from wastewater by polyelectrolyte hydrogels. **D. R. Kioussis**, P. Kofinas
- 298.** Affinity photocross-linking for the efficient identification and isolation of heparin-binding proteins. **Y. Suda**, K. Mori, M. Nakamura, S. Kusumoto, M. Sobel
- 299.** Antimicrobial nylon. **J. Lin**, C. Winkelmann, S. D. Worley, R. M. Broughton, J. F. Williams, J. Bickert
- 300.** Attachment of proteins to poly(vinyl alcohol) for biomedical applications. **C. R. Nuttelman**, K. S. Anseth
- 301.** Chitosan macroporous scaffolds for cell culture. **H. Seong**, H-J. Baek, I-C. Kwon, S-Y. Jeong, E-H. B. Lee
- 302.** Confinement effects in polymers under an applied field. **R. Wenczel**, C-Y. Shew
- 303.** Conformational behavior of an isolated polymer chain labeled with an elastic ball. **Y. Chen**, C-Y. Shew
- 304.** Enhanced production of antigen (CEA) and human antibody by mammalian cells cultured on various polymeric films. **S. Adachi**, M. Hara, M. Kamei, S. Hashizume, A. Higuchi
- 305.** Evaluation of kinetic parameters of polylactide-*co*-polyethylglycolide. **C. Wang**, Y. Mao, G. L. Baker
- 306.** Experimental studies of phase transitions in solutions of random heteropolymers. **M. McCormick**, J. A. Reimer
- 307.** IFN- β production of fibroblast cells cultured on various polymeric membranes. **Y. Takanashi**, T. Ohno, M. Hara, T. Asakura, A. Higuchi
- 308.** Microfabrication of hydrogels as polymer scaffolds for tissue-engineering applications. **T. Yu**, F. Chiellini, **D. Schmaljohann**, R. Solaro, **C. Ober**
- 309.** Molecular recognition of vesicles containing pyrene compounds using fluorescence spectroscopy. **H. Kofune**, M. Hara, M. Maekawa, T. Nohmi, T. Kinoshita, A. Higuchi
- 310.** Physicochemical aspects of drug release from poloxamer block copolymer gels. L. Yang, S. S. Talukdar, **P. Alexandridis**
- 311.** Polymer matrix effects on the properties of amorphous calcium phosphate-filled composites. **D. Skrtic**, J. M. Antonucci, D. E. Eanes
- 312.** Preparation of various surface-modified membranes and their optical resolution of amino acids. **H. Yomogita**, M. Hara, S. Maniwa, M. Saito, A. Higuchi
- 313.** Self-aggregation phenomena in human mucin. **L. E. Bromberg**, D. P. Barr
- 314.** Size exclusion chromatography of high molecular weight polymers: Effects of flow rate and the creation of a universal calibration curve. **Y. Cheng**, R. K. Prud'homme
- 315.** Stereoselective polymerization using a racemic catalyst. **C. P. Radano**, G. L. Baker, M. R. Smith III
- 316.** Structurally controlled polymers from academia to industry: Poly- ϵ -caprolactone-based block copolymers. **S. K. Varshney**, J. X. Zhang
- 317.** Synthesis and characterization of pH and temperature-sensitive silk-elastinlike block copolymers for controlled drug delivery. **A. Nagarsekar**, J. Crissman, M. Crissman, F. Ferrari, J. Cappello, H. Ghandehari
- 318.** Synthesis of aromatic polyanhydrides for controlled drug delivery. **A. J. Sanders**, F. W. Harris
- 319.** Synthesis of novel hydrophilic biopolymers. **E. B. Walsh**, M. J. Sheehy, M. W. Grinstaff
- 320.** Synthesis of photocross-linkable biopolymers for in situ applications. **K. A. Smeds**, M. W. Grinstaff

2000 Fall meeting

321. Synthesis, characterization, and evaluation of urethane derivatives of bis-GMA. **C. A. Khatri**, J. M. Antonucci, J. W. Stansbury, C. R. Schultheisz

322. Transport of macromolecular drug carriers across microvascular beds. **M. El-Sayed**, M. Naimark, M. F. Kiani, H. Ghandehari

323. UV-induced radical grafting of hydrophilic monomers from dithiocarbamated polymer surfaces. **N. Luo**, J. B. Hutchison, N. P. Nartin, C. N. Bowman, K. S. Anseth

Section B

Convention Center
Exhibit Hall D

Joint PMSE/POLY Poster Session

Emerging Frontiers in Polyolefins

P. Arjunan, *Organizer*

P. Arjunan, T. E. Hanlon, J. E. McGrath, *Presiding*

6:00–8:00

324. Applications of cobalt(II) porphyrins in controlled radical polymerizations of acrylates in organic and aqueous media. **L. Basickes**, G. F. Parks, B. B. Wayland

325. Elementary reactions in the zirconocene activation process by methylaluminumoxane. **A. Deffieux**, H. Cramail, J-N. Pédeutour

326. Homo- and copolymerization of macromonomers via coordination polymerization. **P. J. Lutz**, F. Breitling, J-F. Lahitte, F. Peruch, S. Plentz Meneghetti, F. Isel

327. Novel aluminum-based, transition-metal-free, catalytic systems for homo- and copolymerization of alkenes. **J. S. Kim**, A. Sen

328. Rapid monomer consumption during initiation of living cationic polymerization of olefins: Varying monomer/initiator combinations. R. F. Storey, **Q. A. Thomas**

329. Study of initiation effects in the living cationic polymerization of styrene using real-time ATR-FTIR monitoring. R. F. Storey, **S. J. Jeskey**

330. Withdrawn.

331. Withdrawn.

332. Synthesis of syndiotactic polyaminostyrene derivatives by using cationic metallocene/borate catalysts. **G. Xu**, T. C. Chung

333. Synthesis and properties of double-bond-terminated isotactic polypropylene. **P-F. Fu**, S. Glover, R. K. King, C-L. Lee, M. R. Pretzer, M. K. Tomalia

334. Zirconocene/MAO-catalyzed polymerization of ethene and 1-hexene: The influence of methyl substitution pattern on the cyclopentadienyl ligand. **H. Wigum**, L. Tangen, J. A. Støvneng, E. Rytter

Section C

Convention Center
Exhibit Hall D

Joint PMSE/POLY Poster Session

Enviro-Compatible Syntheses and Processes: Targeting Sustainability

Cosponsored with Division of Polymeric Materials: Science & Engineering

R. A. Gross, G. Swift, H. N. Cheng, *Organizers*

6:00–8:00

2000 Fall meeting

- 335.** Chemoenzymatic synthesis of nucleoside-branched poly(vinyl alcohol). **Y. Tokiwa**, H. Fan, T. Raku, M. Kitagawa
- 336.** Effect of DMSO on selective acylation of allopyranose catalyzed by protease. **M. Kitagawa**, Y. Tokiwa, T. Raku, H. Fan
- 337.** Control of polyester-chain scission by lipase-catalysis. **M. Bankova**, A. Kumar, R. A. Gross, G. Impallomeni, A. Ballistreri
- 338.** Exploiting lipase-catalysis to prepare an A₂B hetero-arm block copolymer from glycerol. **Y. Mei**, A. Kumar, R. A. Gross
- 339.** Functional bioresorbable copolymers from lipase-catalysis. **A. Mahapatro**, A. Kumar, R. A. Gross
- 340.** HRP-mediated polymerizations of acrylamide and sodium acrylate. **B. Kalra**, R. A. Gross
- 341.** Lipase-catalysis facilitates copolymerizations that were otherwise difficult or impossible by alternative chemical approaches. **A. Kumar**, K. Garg, W. Gao, R. A. Gross
- 342.** Lipase-catalyzed pentadecalactone/caprolactone copolymerizations. **A. Kumar**, B. Kalra, A. Dekhterman, R. A. Gross
- 343.** Lipase-catalyzed grafting reactions on polysaccharides. **Q-M. Gu**
- 344.** Methylated- β -cyclodextrin mediated aqueous polymerization of hydrophobic methacrylic monomers. **P. H. Madison IV**, T. E. Long
- 345.** Patternable low-k dielectrics developed using supercritical CO₂. **G. L. Weibel**, H. Pryce Lewis, K. K. Gleason, C. Ober
- 346.** Radical polymerization of methyl methacrylate initiated with a thermal iniferter. S. H. Qin, **K. Y. Qiu**, **G. Swift**, W. Lau, D. G. Westmoreland, S. Wu
- 347.** Reworkable thermosets: Enabling disassembly of microelectronic components. **J-S. Chen**, C. K. Ober, M. D. Poliks
- 348.** Sol-gel process of microencapsulation of reactive chemicals. **M. Temchenko**, C. Westmark, T. Tiano, R. Kovar, W. Zukas, N. Landrau
- 349.** Study of thermomechanical properties of polyester with vinyl ether side chains before and after photocuring. D. E. Nikles, **T. Woo**, J-Y. Huh

Section D

Convention Center
Exhibit Hall D

Joint PMSE/POLY Poster Session

Macromolecular Synthesis by Selective Chemical Modification

M. A. Hillmyer, S. F. Hahn, *Organizers*

6:00-8:00

- 350.** Polyetherimide/dicyanate semi-interpenetrating polymer networks having morphology spectrum. **Y. S. Kim**, S. C. Kim
- 351.** Synthesis and electric properties of VDF/TrFE/HFP terpolymers. A. Petchsuk, **T. C. Chung**
- 352.** Synthesis of novel macrocycles and polymers based on restricted rotation. **Y. S. Chong**, K. D. Shimizu
- 353.** Molecular design of polyimides toward high proton conducting materials. Y. Zhang, **M. H. Litt**, R. F. Savinell, J. S. Wainright, J. Vendramini
- 354.** Synthesis of syndiotactic polystyrene graft copolymer by atom transfer radical polymerization. **S. Liu**, A. Sen
- 355.** Wholly aromatic five- and six-membered ring polyimides containing pendant sulfonic acid functional groups. **N. Gunduz**, J. E. McGrath
- 356.** Readily, continuously, and reversibly tunable helical preference of optically active poly(phenylacetylenes). **K. K. L.**

2000 Fall meeting

Cheuk, F. Salhi, J. W. Y. Lam, B. Z. Tang

- 357.** Regiospecific hydrolysis of poly(enaminonitriles) and model compounds. **J. A. Moore, Z. Li**
- 358.** Entirely hydrophilic shell cross-linked Knedel-like nanoparticles. **Q. Ma**, E. E. Remsen, T. Kowalewski, K. L. Wooley
- 359.** Syntheses of polyethylene-based graft copolymers by atom transfer radical polymerization. **S. Liu**, A. Sen
- 360.** Synthesis of optically active siloxane derivatives containing cyclopentene units. **A. A. Vaidya**
- 361.** Coupling the affinity spectrum method with selective chemical postmodification for the improvement of imprinted polymers. K. D. Shimizu, **R. J. Umpleby II**
- 362.** Dendrimers based on melamine. E. E. Simanek, **W. Zhang**
- 363.** Effect of degree of saponification on the physicochemical properties of high molecular weight syndiotactic poly(vinyl alcohol) solution. W. S. Lyoo, **J. H. Choi**
- 364.** Functionalization of regioregular head-to-tail poly(3-alkylthiophenes) side chain. **L. Zhai**, R. McCullough
- 365.** Hydrogen-bonding effects on molecular ordering and polymerization of mesogenic disklike diacetylenes. **S. J. Lee**, J. Y. Chang, M. J. Han
- 366.** Imageable polymers using fluorocarbinol containing polydienes. **Y. C. Bae**, J. Dai, G. L. Weibel, C. K. Ober
- 367.** Modification of the thermal cure of aryl-ethynyl end-capped imide oligomers. **D. A. Schorzman**, M. E. Wright, L. E. Pence
- 368.** New poly(phenylacetylene)s bearing amino acid moieties. **F. Salhi**, K. K. L. Cheuk, J. W. Y. Lam, B. Z. Tang
- 369.** Syndiotactic polystyrene grafting branched polyethylene with $[\text{Ni}(\pi\text{-methallyl})(\text{Br})_2]/\text{AlCl}_3$ catalyst. **S. Liu**, A. Sen
- 370.** Synthesis and thermal properties of new thermosetting polysiloxanes containing Si-H and C-C moieties on the silicon atom. **P. N. Reddy**, T. Hayashi, M. Tanaka, M. Itoh
- 371.** Mild route to highly fluorinated model polymers. **Y. Ren**, M. A. Hillmyer, T. P. Lodge
- 372.** Block copolymerization of isobutylene with pivalolactone using site-transformation technique. **Y. Kwon**, R. Faust
- 373.** Synthesis of well-defined polymers having linear polyethylene blocks via ROMP and hydrogenation. S. T. Trzaska, **L. B. W. Lee**, R. A. Register
- 374.** Selective method for hydroxylation and derivatization of interior sites of polyolefinic films. **C. Wang**, R. G. Weiss
- 375.** Synthesis of liquid-crystalline poly(oxyethylene)s containing (6-nonylsulfonyl)hexylsulfonyl side groups by chemical modification of poly(epichlorohydrin). **J.-C. Lee**, Y. G. Kim, H.-B. Lee, K. Oh, S.-Y. Park, B. L. Farmer

Section E

Convention Center
Exhibit Hall D

Joint PMSE/POLY Poster Session

Scanning Probe Microscopy of Polymers: The Next Generation

V. V. Tsukruk, N. D. Spencer, *Organizers, Presiding*

6:00–8:00

- 376.** In situ biodegradation study of polyhydroxyalkanoate thin films using AFM. **B. H. Augustine**, C. J. Rossini, E. R. McCarney, M. Flythe, S. F. Baron, D. E. Dennis
- 377.** Highly regular organization of conjugated polymer chains via block copolymer self-assembly. **P. Leclère**, D. Marsitzky, V. Francke, S. Setayesh, K. Müllen, J.-L. Brédas, R. Lazzaroni

2000 Fall meeting

- 378.** Effects of monolayer disorder on the friction of anchored alkane chains. J. A. Harrison, S. J. Stuart, **P. T. Mikulski**, A. B. Tutein
- 379.** Langmuir monolayers from azobenzene-containing dendrons. **A. Sidorenko**, C. Houphouet-Boigny, A. Greco, O. Villavicencio, M. Hashemzadeh, D. V. McGrath, V. Tsukruk
- 380.** Atomic force microscopy studies of low- and high-density polyethylene held in tensile deformation. **A. M. Opdahl**, G. A. Somorjai
- 381.** In situ crystallization study in PET films by elevated temperature AFM/UFM. **V. N. Bliznyuk**, K. Kirov, H. E. Assender, G. A. D. Briggs, Y. Tsukahara
- 382.** Autocorrelation function analysis of the surface structure of amorphous PMMA. **V. N. Bliznyuk**, V. M. Burlakov, H. E. Assender, G. A. D. Briggs, Y. Tsukahara
- 383.** Microthermal analysis of ultrathin polymeric films with scanning thermal microscopy. **V. V. Gorbunov**, N. Fuchigami, V. V. Tsukruk
- 384.** Microthermal analysis with scanning thermal microscopy. **V. V. Gorbunov**, N. Fuchigami, V. V. Tsukruk
- 385.** Stability of microdomain morphology in tethered block copolymer monolayers. **I. Luzinov**, D. Julthongpiput, V. V. Tsukruk
- 386.** Microtribological behavior of tethered block copolymer monolayers. **I. Luzinov**, D. Julthongpiput, V. Gorbunov, V. V. Tsukruk
- 387.** Surface organization of hyperbranched polymer molecules, as studied by atomic force microscopy. **P. Viville**, A. Deffieux, M. Schappacher, P. Leclère, J-L. Brédas, R. Lazzaroni

WEDNESDAY MORNING

Section A

JW Marriott
Grand Salon I

General Session

Synthesis

R. B. Moore, *Organizer*
A. E. Acar, *Presiding*

- 8:30—388.** Air-induced (reverse) atom transfer radical polymerization of phenethyl methacrylate in the absence of an added initiator. **A. E. Acar**, M. B. Yagci, L. J. Mathias
- 8:50—389.** Coupling reactions of polystyryllithium and dibromomethane: Comparisons with other dihalomethanes. **E. S. Tillman**, T. E. Hogen-Esch
- 9:10—390.** Determining stereochemical relationships in polylactide: Synthesis and characterization of polylactide hexads. **E. E. Paske**, G. L. Baker
- 9:30—391.** Effects of chelating agents on the quasilinging carbocationic polymerization of isobutylene. P. Werner Groh, **B. Iván**, M. Szesztay, F. de Jong, T. Graafland
- 9:50—392.** Novel dehydroalanine derivatives: Homopolymers and MMA copolymers. **H. Yagci Acar**, L. J. Mathias
- 10:10—393.** Palladium (II)-catalyzed copolymerization of norbornene with polar vinyl monomers. **A. D. Hennis**, A. Sen
- 10:30—394.** Perfectly alternating poly(arylene ether phosphine oxide)-*b*-poly(dimethylsiloxane) copolymers. **W. D. Polk**, S. Wang, Y. Kim, M. Sankarapandian, T. E. Glass, J. E. McGrath

2000 Fall meeting

10:50—395. Retarded anionic polymerization: 5-Influence of alkyl substituents in PSLi/MgR₂ initiating systems on the characteristics of high-temperature styrene polymerization. **A. Deffieux**, S. Menoret, S. Carlotti, P. Desbois, C. Schade, M. Fontanille

11:10—396. Synthesis and characterization of controlled molecular weight sulfonated aminofunctional poly(arylene ether sulfone)s prepared by direct polymerization. **J. B. Mecham**, H. K. Shobha, F. Wang, W. L. Harrison, J. E. McGrath

Section B

JW Marriott
Capitol Salon E

Enviro-Compatible Syntheses and Processes: Targeting Sustainability

Development of Novel Methodologies

Cosponsored with Division of Polymeric Materials: Science & Engineering

R. A. Gross, H. N. Cheng, G. Swift, *Organizers*
A. Steinbüchel, *Presiding*

8:30—397. Generation of environmentally compatible polymer libraries via combinatorial biocatalysis. **J. S. Dordick**, D-Y. Kim, X. Wu

9:00—398. Synthesis and cationic photopolymerization of biorenewable monomers and oligomers. **J. V. Crivello**

9:30—399. Continuous application of enzymes and synzymes in membrane reactors. **C. Wandrey**, S. Laue

10:00—Intermission.

10:15—400. Evolving and screening enzymes for new activities on polymer substrates. **D. C. Youvan**, W. J. Coleman, E. J. Bylina

10:45—401. Enzymatic polymer modification. **J. T. Kellis Jr.**

11:15—402. Toward the "greening" of adipic acid: Genes are only the beginning. Y. Hasegawa, T. Tokuyama, **P. C. K. Lau**

Section C

JW Marriott
Grand Salon II

Emerging Frontiers in Polyolefins

Catalysis

P. Arjunan, *Organizer*
T. E. Hanlon, P. Arjunan, *Presiding*

8:30—Introductory Remarks.

8:35—403. Next-generation nickel catalysts. **P. B. Mackenzie**, L. S. Moody, C. M. Killian, J. A. Ponasik Jr., G. G. Lavoie, J. C. Pearson, T. W. Smith, L. A. Tucker, M. R. Moore, A. K. Farthing, G. A. King, M. D. Meadows, C. S. Sass, E. P. Savitski

9:05—404. Structure, mechanism, and reactivity in single-site olefin polymerization catalysis. **T. J. Marks**

9:35—405. Using electrophile-functionalized metallocene intermediates in the design of olefin polymerization catalysts. **P. A. Deck**, O. W. Lofthus, X. Cheng

10:05—Intermission.

10:15—406. Binuclear constrained geometry catalysts and binuclear bisborate cocatalysts for olefin polymerization. **L. Li**, T. J. Marks, L. M. Liable-Sands, A. L. Rheingold, M. V. Metz

10:45—407. Variation of isospecific active sites on MgCl₂-supported Ziegler catalysts. **M. Terano**, H. Matsuoka, B. Liu

2000 Fall meeting

11:15—408. 1- and 2-Substituted (η^3 -allyl)palladium(II) catalysts for the addition polymerization of norbornene. W. Risse, **F. Peruch**

11:45—409. Bis-amides and amine bis-amides as ligands for olefin polymerization catalysts based on V(IV), Cr(IV), and Mn(IV): A density-functional theory study. **T. K. Firman**, T. Ziegler

Organic Thin Films for Photonic Applications *cosponsored with Division of Polymeric Materials: Science & Engineering (see page xx)*

WEDNESDAY AFTERNOON

Section A

JW Marriott
Grand Salon I

General Session

New Materials

R. B. Moore, *Organizer, Presiding*

1:30—410. Aliphatic polyesters containing symmetrical glutamic acid diketopiperazines. **L. S. Somlai Jr.**, D. A. Parrish, L. J. Mathias

1:50—411. Study of crystallization kinetics in Zenite thermotropic liquid-crystalline polymer. **P. K. Pallathadka**, T-S. Chung

2:10—412. Synthesis and characterization of poly(4,4'-oxydiphthalic anhydride-co-2,2'-dimethyl-4,4'-diaminobiphenyl)amic acid and its imide-kinetic study. **P. S. G. Krishnan**, R. H. Vora, T-S. Chung

2:30—413. Solid supports for CO₂ applications. **S. A. Cr  tt  **, J. M. DeSimone, R. G. Carbonell, W. Tumas, J. T. Brady

2:50—414. Synthesis of pom-star polystyrene. D. M. Knauss, **T. Huang**

3:10—415. Synthesis of random solution SIRs using distributed monomer feed systems. **G. Xu**, M. L. Kerns, S. Christian

3:30—416. Synthesis of sulfonated poly(phenylene sulfide sulfone)s via direct polymerization. **F. Wang**, J. B. Mechem, W. Harrison, J. E. McGrath

3:50—417. Kinetic models for hyperbranched polymerization and copolymerization. **D. Yan**

4:10—418. Photoresponsive self-assembled multilayers of three new azo polyelectrolytes. X. Tuo, Z. Chen, L. Wu, **X. Wang**, D. Liu

4:30—419. Preparing a brominated poly(*p*-methylstyrene-co-styrene)-*block*-poly(ethylene-co-butene)-*block*-poly(*p*-methylstyrene-co-styrene). **R. C-C. Tsiang**, C-Y. Tsai

Section B

JW Marriott
Capitol Salon E

Enviro-Compatible Syntheses and Processes: Targeting Sustainability

Biocatalytic Routes to Polyesters and Polycarbonates

Cosponsored with Division of Polymeric Materials: Science & Engineering

R. A. Gross, H. N. Cheng, G. Swift, *Organizers*
J. S. Dordick, *Presiding*

1:30—420. In vivo and in vitro metabolic engineering of PHA biosynthesis pathways. **A. Steinb  chel**

2:00—421. Controlling the polymer microstructure of biodegradable polyhydroxyalkanoates. **A. S. Kelley**, F. Srien

2000 Fall meeting

- 2:25—422. Enzyme-catalyzed direct polyesterification. **K. F. Brandstadt**, J. C. Saam, A. Sharma
- 2:50—423. Green synthetic process of aliphatic polycarbonates from CO₂ and their biodegradabilities. **M. Ree**, Y-T. Hwang, H. Kim
- 3:15—Intermission.
- 3:30—424. Enantio- and regioselective polymerization with lipase catalysis to polyesters. **S. Kobayashi**, H. Uyama
- 4:00—425. Lipase-catalyzed transesterification: New synthetic routes to copolyesters. **A. Kumar**, R. A. Gross
- 4:25—426. Functional polycarbonate synthesis: Enzymatic approach. **K. S. Bisht**, T. F. Al-Azemi

Section C

JW Marriott
Grand Salon II

Emerging Frontiers in Polyolefins

Synthesis

P. Arjunan, *Organizer*
P. Arjunan, T. E. Hanlon, *Presiding*

- 1:30—Introductory Remarks.
- 1:35—427. C₂-Symmetric zirconocenes for high molecular weight amorphous polypropylene. D. Balboni, G. Moscardi, I. E. Nifant'ev, G. Baruzzi, D. Angeli, **L. Resconi**
- 2:05—428. Kinetics of propylene polymerization using bis(2-phenylindenyl)zirconium dichloride/MAO. R. M. Waymouth, **S. Lin**
- 2:35—429. Long-chain branched polypropylene via macromer incorporation. **W. Weng**, E. J. Markel, A. H. Dekmezian
- 3:05—Intermission.
- 3:15—430. Metallocene polymerization with reactive chain-transfer agent: Synthesis of telechelic polyolefin and functional polyolefin diblock copolymers. G. Xu, J. Y. Dong, **T. C. Chung**
- 3:45—431. New chemistry for surface modification of polyethylene. **D. E. Bergbreiter**
- 4:15—432. Synthesis and properties of polyolefin hybrid copolymers containing polyhedral oligosilsesquioxane. L. Zheng, R. J. Farris, **E. B. Coughlin**

THURSDAY MORNING

Section A

JW Marriott
Grand Salon I

Polymers in Museums: Preservation for the Next Millennium

M. T. Baker, *Organizer, Presiding*

- 8:55—Introductory Remarks.
- 9:00—433. Polymers in time capsules: A tutorial. **M. T. Baker**, D. van der Reyden, D. C. Williams
- 10:15—434. Permanence of plasticizers in polyvinyl chloride objects in the museum environment. **Y. Shashoua**
- 10:45—Intermission.
- 11:00—435. Saving America's treasures: Threatened artifacts from the *Apollo* era. **L. A. Young**

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11:30—436. Imitation leather coverings in early car production: The Wanderer W10/II. **I. Carow**

Section B

JW Marriott
Capitol Salon E

Enviro-Compatible Syntheses and Processes: Targeting Sustainability

Advances in Polysaccharides

Cosponsored with Division of Polymeric Materials: Science & Engineering

R. A. Gross, H. N. Cheng, G. Swift, *Organizers*
R. A. Gross, *Presiding*

8:30—437. Synthesis and modification of carbohydrates through biotechnology. W. Xie, **P. G. Wang**

9:00—438. Enzymatic degradation of a water-soluble polysaccharide. **Y. Cheng**, R. K. Prud'homme

9:25—439. Grafting renewable chemicals to functionalize chitosan. **G. F. Payne**, L. Vachoud, T. Chen, J. Govar

9:50—440. Characterization of polysaccharides by solution NMR spectroscopy: Bacterial polysaccharide vaccines. **C. A. Bush**

10:20—Intermission.

10:30—441. Assessment of the environmental impact of Mater-Bi starch-based materials in specific industrial applications. **C. Bastioli**, L. Marini

11:00—442. Enzymatic modifications of water-soluble polymers. **H. N. Cheng**, Q-M. Gu

11:25—443. In vitro biosynthesis of plant β -glucans. J. Lai Kee Him, H. Chanzy, L. Pelosi, J-L. Putaux, **V. Bulone**

Section C

JW Marriott
Grand Salon II

Emerging Frontiers in Polyolefins

Synthesis/Characterization

P. Arjunan, *Organizer*
P. Arjunan, T. E. Hanlon, *Presiding*

8:30—Introductory Remarks.

8:35—444. Synthesis and characterization of maleic anhydride-cyclic olefin alternating copolymers. A. J. Pasquale, R. Karro, R. D. Allen, **T. E. Long**

9:05—445. Study of the uptake of *endo*- versus *exo*-norbornenes in insertion polymerization. **A. D. Hennis**, A. Sen

9:35—446. In vitro enzyme-catalyzed vinyl polymerization. **B. Kalra**, R. A. Gross

10:05—Intermission.

10:15—447. Kinetics of isothermal melting of isotactic polypropylenes with different degrees of stereoregularity. **R. G. Alamo**, W. T. Huang, L. Mandelkern

10:45—448. Melting and crystallization behavior of polyethylene copolymers: Relationship to temperature rising elution fractionation. **F. M. Mirabella Jr.**

11:15—449. Sequence control of ethylene- α -olefin copolymers with bridged metallocenes. R. M. Waymouth, **W-H. Fan**, M. Leclerc

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THURSDAY AFTERNOON

Section A

JW Marriott
Grand Salon I

Polymers in Museums: Preservation for the Next Millennium

M. T. Baker, *Organizer*
Y. Shashoua, *Presiding*

1:30—Introductory Remarks.

1:35—450. Laser ablation of artificially aged dammar layers of controlled thickness: Spectroscopic studies on the degree of aging. **S. Boyatzis**, A. Kaminari, A. Manousaki, V. Zafirooulos

2:05—451. Investigation of Laropal A81: Paraloid B72 polymer blends as picture varnishes. **J. M. Arslanoglu**

2:35—452. Can artists' oil paints be accelerated aged? D. Erhardt, **C. S. Tumosa**, M. F. Mecklenburg

3:05—Intermission.

3:20—453. Characterization of plant fibers by IR spectroscopy. **P. Garside**, P. Wyeth

3:50—454. Staying in shape: The stability of structural proteins in natural history museum storage fluids. **D. W. Von Endt**

Section B

JW Marriott
Capitol Salon E

Enviro-Compatible Syntheses and Processes: Targeting Sustainability

Biorelated Reactions and Applications

Cosponsored with Division of Polymeric Materials: Science & Engineering

R. A. Gross, H. N. Cheng, G. Swift, *Organizers*
G. Swift, *Presiding*

1:30—455. Biochemical synthesis of water-soluble conducting molecular complex of polyaniline and lignosulfonate. **S. K. Tripathy**, F. F. Bruno, L. Samuelson, R. Nagarajan, J. Kumar

2:00—456. Gel formation by enzyme-selective cross-linking of tyramine-decorated poly(aspartamide). **B. Kalra**, A. Kumar, R. A. Gross

2:25—457. Synthesis and polymerization of new monomers derived from itaconic anhydride and pentaerythritol. **M. Ramos**, S. J. Huang

2:50—458. Global warming reduction by polymers in automotive fuels. **P. F. Waters**

3:15—Intermission.

3:30—459. Polymer-modulated, diffusion-controlled enzyme kinetics on monolayers. K. Tanaka, **H. Yu**

4:00—460. Controlled/"living" polymerization of 2-(*N*-morpholino) ethyl methacrylate by atom transfer radical polymerization in aqueous solution at 20 °C. **F. L. G. Malet**, N. C. Billingham, S. P. Armes

4:25—461. Vinyl radical polymerization with a multifunctional iniferter technique. S. H. Qin, **K. Y. Qiu**

Section C

JW Marriott
Grand Salon II

2000 Fall meeting

Emerging Frontiers in Polyolefins

Structure/Property Relationships

P. Arjunan, *Organizer*

P. Arjunan, T. E. Hanlon, *Presiding*

1:30—Introductory Remarks.

1:35—462. Properties of isotactic poly(propylene): Some old, some new. **L. Mandelkern**

2:05—463. LCB polymer-chain dimensions: Application of topology to the Zimm-Stockmayer model. **D. Bonchev**, E. J. Markel, A. H. Dekmezian

2:35—464. Crystallization, melting, and morphology at ambient and high pressures of homogeneous ethylene copolymers with high comonomer contents. **V. B. F. Mathot**, S. V. Eynde, G. Höhne, H. Reynaers

3:05—Intermission.

3:15—465. Investigation on the structural parameters of polyethylenes obtained using a Pd catalyst. **P. J. Lutz**, S. Plentz Meneghetti, J. Kress, A. Lapp, M. Duval

3:45—466. Cessation of spherulitic growth in phase-separating polyolefin blends. **H. Wang**, C. C. Han