DPOLY Short Course

Advances in the Use of Atomic Force Microscopy for Studies of the Physics of Macromolecular Materials

Saturday, March 3rd 2007, 8:30 AM – 5:00 PM
Sunday, March 4th 2007, 8:30 AM – 3:00 PM

Registration fees: $400 ($200 for students); pre-registration required, no on-site registration.

Course description

Atomic force microscopy (AFM) is now a ubiquitous tool for studying the ultrastructure and physics of both technological and biological materials. This short course will cover recent advances in the application of AFM for studies of the physics of macromolecular materials (both synthetic and biological) including single macromolecules, assemblies of macromolecules, stimulus-responsive macromolecular films, single cells, and whole biological tissues. New instrumentation development will also be covered.

Who should attend

Graduate students and postdocs conducting research in this area or faculty and scientists from industry looking to begin to apply AFM methods to their current research areas. A B.S. level training in physical science or engineering and a general knowledge of the basics of AFM will be assumed.

Topics to be covered

A wide range of topics will be covered. On overview will be given contrasting the challenges in studying the physics of biological and synthetic macromolecular systems with AFM. For biological systems, topics will include; AFM for imaging, measuring and manipulating soft matter in the human body, single cell viscoelasticity, and the measurement of energy dissipation by sacrificial bonds in biological tissues. For synthetic systems, topics will include combinatorial material mechanics: high-throughput polymer synthesis and nanomechanical screening, and nanopatterning of functional macromolecules. Instrumentation lectures will be given on new advances in nanoindentation using AFM-based probes, integration of AFM with Raman, SEM, and FIB, developments in friction force measurements and calibration, and nanoelectro-mechanics of piezoresistive force microscopy.

Speakers list

Ueli Aebi (University of Basel, Switzerland), Phil Attard (University of Sydney, Australia), Paul Hansma (UCSB), Sergei V. Kalinin (Oak Ridge National Lab), Aaron Lewis (Hebrew University, Israel), Christine Ortiz (MIT), Krytyn van Vliet (MIT), Stefan Zauscher (Duke University)

Course Organizer

Christine Ortiz  Department of Materials Science & Engineering  Massachusetts Institute of Technology  Room 13-4022 77 Massachusetts Avenue  Cambridge, MA 02139 USA

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Legend:

- (B)  business meeting
- (C)  contributed session
- (F)  focus session
- (I)  invited session
- (P)  poster session

DBP  Division of Biological Physics
DCOMP Division of Computational Physics
DPOLY Division of Polymer Physics
DMP  Division of Materials Physics
FIAP  Forum on Industrial and Applied Physics
GSNP Topical Group on Statistical and Nonlinear Physics

Session A4.  Responsive and Adaptable Polymeric Materials (DPOLY/DMP/GSNP)
Monday morning, 8:00 AM, Colorado Convention Center, Korbel 2B-3B
Chair: Timothy Bunning, Air Force Research Laboratory

8:00 AM  A4.00001: Adaptive and Responsive Polymer NanoComposites
  Invited Speaker: Richard Vaia

  Invited Speaker: Stefan Zauscher

  Invited Speaker: Paul Hansma

9:48 AM  A4.00004: Cell micro rheology in health and disease* be suitable for your session
  Invited Speaker: Denis Wirtz

10:24 AM A4.00005: Is experimental heteropolymer sequence design practical, or does it belong to the realm of science fiction?
  Invited Speaker: Alexander Grosberg
Session A17. Charged and Ion-Containing Polymers (DPOLY)
Monday morning, 8:00 AM, Colorado Convention Center, 102
Chair: Bulent Ozbas, Princeton University

8:00 AM A17.00001: Solvent effects on polyelectrolyte charge and conformation in solution
Ralph Colby, Shichen Dou

8:12 AM A17.00002: Electrostatic Properties of an Entirely Hydrophilic Polyelectrolyte
David Hoagland, Alexei Popov

8:24 AM A17.00003: Formation, Structure and Electrochemical Impedance Analysis of Microporous Polyelectrolyte Multilayers
Jodie Luktenhaus, Kathleen McEnnis, Paula Hammond

8:36 AM A17.00004: Influence of humidity and crystallization time on the conductivity of nanoparticle-filled solid polymer electrolytes
Susan Fullerton, Janna Maranas

8:48 AM A17.00005: Counterion Effects on Ion Mobility and Mobile Ion Concentration of Doped Polyphosphazenes and Polyphosphazene Ionomers
Jim Runt, Robert Klein

9:00 AM A17.00006: Ion mobility and mobile ion concentration in PEO-based polyurethane ionomers
Daniel Fragiadakis, Shichen Dou, Ralph Colby, James Runt

9:12 AM A17.00007: Conformational structures in dry ionomers
Elshad Allahyarov, Philip Taylor

9:24 AM A17.00008: Water Diffusion in Ultrathin Ionomer Thin Films: Neutron Reflectivity Study
Lilin He, Erik B. Watkins, Jaroslav Majewski, Cy H. Fujimoto, Christopher J. Comelius, Dvora Perahia

9:36 AM A17.00009: Nanoscale Morphology of Sulfonated Polystyrene Ionomers
Nancy C. Zhou, Karen I. Winey

9:48 AM A17.00010: Morphology and Proton Transport in Polyimide-Polysiloxane Segmented Copolymers
Lijun Zou, Mitchell Anthamatten

10:00 AM A17.00011: Morphological Study of Model Poly(Ethylene-Acrylic Acid) Ionomers
Christopher D. Chan, Travis W. Baughman, Kathleen L. Opper, Kenneth B. Wagener, Karen I. Winey

10:12 AM A17.00012: Proton Conduction on Membranes from Fluorinated Poly(isoprene)-b-Sulphonated Poly(Sytrene): Structure and Transport Properties
Akinbode Isacs-Sodeye, Samuel Gido, Tianzi Huang, Jimmy Mays

10:24 AM A17.00013: Polyelectrolyte Interfacial Swelling and Film Stability
Vivek Praharu, Ashwin Rao, Shuhui Kang, Eric Lin, Sushil Satija

10:36 AM A17.00014: ATRP-derived functional polymers for electronic applications
Tracy Buchholz, Jong Eun Yoo, Sally Peng Li, Yueh-Lin Loo

10:48 AM A17.00015: The nature of water in hydrated acid-form Nafion membranes

Session A18. Photophysics of Electronic Polymers (DPOLY/DMP)
Monday morning, 8:30 AM, Colorado Convention Center, 103
Chair: Rachel Segalman, University of California, Berkeley

8:00 AM A18.00001: Identification of the Possible Defect States in Poly(3-hexylthiophene) Thin Films
Dangin Feng, Anthony Caruso, Yaroslav Losovyj, Douglas Schulz, Peter Dowben

8:12 AM A18.00002: Ab initio study of ladder-type metallic polymers
Simon Pesant, Guillaume Dumont, Sebastien Langevin, Michel Cote

8:24 AM A18.00003: Illumination induced metastable polaron-supporting phase in poly p-phenylene-vinylene films
E. Ehrenfreund, E. Gershman, Y. Eichen, T. Drori, C.X. Sheng, Z.V. Vardeny

8:36 AM A18.00004: Ultrafast and Nonlinear Optical Spectroscopies of Excited States in Pristine and Doped π-Conjugated polymers
Invited Speaker: Valy Vardeny

9:12 AM A18.00005: Temperature dependence and anisotropy of charge-carrier mobilities in crystalline durene
Frank Ortmann, Karsten Hannewald, Friedhelm Bechstedt

9:24 AM A18.00006: Ultrafast polarization memory dynamics of photoexcitations in π-conjugated polymers
Sanjeev Singh, Minghong Tong, Josh Holt, Zeev Vardeny

9:36 AM A18.00007: Experimental Determination of Charge/Neutral Branching Ratio in π-Conjugated Polymers by Broad-band Ultrafast Spectroscopy
Chuanxiang Sheng, Minghong Tong, Sanjeev Singh, Z. Valy Vardeny

9:48 AM A18.00008: In-situ characterization of the mesophase of a high performance semiconducting polymer
L.J. Richter, A.J. Moad, D.M. Delongchamp, R.J. Kline, D.J. Gundlach, D.A. Fischer

10:00 AM A18.00009: Electro-optic Measurements in Single-Crystal Films of a Combination of Materials involving DAST and IR-125
A. Narayanan, J. Titus, M. Thakur

10:12 AM A18.00010: Nonlinear Refractive Index in a Novel Nano-optical Material Based on the Nonconjugated Conductive Polymer, Poly(β-pinene)
A. Narayanan, J. Titus, Mrinal Thakur

10:24 AM A18.00011: Quadrupolar dyes for NLO applications: solvent-induced symmetry breaking and huge TPA cross-sections in aggregates
Anna Painelli, Gabriele D’Avino, Francesca Terezian

10:36 AM A18.00012: Infrared probe of charge dynamics in single crystal rubrene organic field-effect transistors
Zhiqiang Li, Vitaly Podzorov, Na Sai, Michael Martin, Michael Gershenson, Massimiliano DiVentra, Dimitri Basov
Session A24. Particle Dynamics & Organization: Polymer Mediated, Polymer Particles & Anisotropic Particles (DPOLY)

Monday morning, 8:00 AM, Colorado Convention Center, 201
Chair: Richard Register, Princeton University

8:00 AM  A24.00001: Self-Assembly of Amphiphilic Colloids
Invited Speaker: Steve Granick

8:36 AM  A24.00002: Dynamics of polymer microgel nanoparticles and polymer chains
Kiril Streletzky, John McKenna, Gerald Hillier

8:48 AM  A24.00003: Icosahedral packing of polymer-tethered nanospheres and stabilization of the gyroid phase

9:00 AM  A24.00004: Bicontinuous Morphologies in Block Copolymer-Nanoparticle Composites
Victor Pryamitsyn, Venkat Ganesan

9:12 AM  A24.00005: Control of Nanoparticle Distribution with Directed Assembly of Block Copolymer Films
Huiman Kang, Francois Detcheverry, Andrew Mangham, Mark Stoykovich, Robert Hamers, Juan de Pablo, Paul Nealey

9:24 AM  A24.00006: Controlling Nanoparticle Location and Morphology in Polymer Blend and Copolymer Films
Russell Composto, Aysenur Corlu, Ranjan Deshmukh, Hyun-joong Chung, Kohji Ohno

9:36 AM  A24.00007: Molecular Theory Studies of Polymer/Nanoparticle Blends Near Surfaces
Erin McGarrity, Amalie Frischknecht, Michael Mackay

9:48 AM  A24.00008: Particle Dynamics in Polymer/Metal Nanocomposite Thin Films on Nanometer Length Scales
Suresh Narayanan, Dong Ryool Lee, Aleta Hagman, Xuefa Li, Sunil Sinha, Jin Wang

10:00 AM A24.00009: Investigation of Gold nanoparticle Diffusion in Polymer Thin Films using X-ray Standing Waves
Martin Tolkeinh, Ward Lope, Xuefa Li, Suresh Narayanan, Aleta Hagman, Heinrich Jaeger, Jin Wang

10:12 AM A24.00010: The Effect of Nanoparticle Shape on Polymer-Nanocomposite Rheology and Tensile Strength
Scott T. Knauert, Jack F. Douglas, Francis W. Starr

10:24 AM A24.00011: Stabilization of nanorods in polymer melts by end-adsorbed chains
Amalie L. Frischknecht

10:36 AM A24.00012: Dispersion and Percolation Transitions of Nanorods in Polymer Solutions
Megha Surve, Victor Pryamitsyn, Venkat Ganesan

10:48 AM A24.00013: Self-assembly of anisotropic nanoparticles at oil/water interfaces
Jinbo He, Qingling Zhang, Suresh Gupta, Todd Emrick, Thomas Russell, Zhongwei Niu, Qian Wang

Session A25. Mechanical Properties, Fracture & Adhesion (DPOLY)

Monday morning, 8:00 AM, Colorado Convention Center, 203
Chair: Alfred Crosby, University of Massachusetts at Amherst

8:00 AM  A25.00001: Mechanics of polymer interfaces
Invited Speaker: Krystyn Van Vliet

8:36 AM  A25.00002: Investigation of molecular structure during sliding of an elastomer on solid surfaces
Kumar Nanjundiah, Ali Dhinojwala

8:48 AM  A25.00003: A novel approach to friction measurements using dewetted polymer droplets
Andrew B. Croll, Kari Dalnoki-Veress

9:00 AM  A25.00004: Capillary wrinkling of thin floating films
Jiangshui Huang, Wim H. de Jeu, Narayanan Menon, Thomas P. Russell

9:12 AM  A25.00005: Nanometer voids prevent crack growth in polymer thin films
Hideaki Yokoyama, Cedric Dutriez, Kotaro Satoh, Masami Kamigaito

Ottenden Oehlemacher, Gary Hamed

9:36 AM  A25.00007: Physical Aging and Non-Exponentialllly in a Crosslinked Coating Subjected to Degradative Weathering
B.M.D. Fernando, X. Shi, S.G. Croll

Arkadi Arinstein, Michael Burman, Eyal Zussman

10:00 AM A25.00009: Predicting Structure-Property Relationship in Segmented Polyurethanes
Valery Ginzburg, Alan Schrock, Christopher Christenson, Jozef Bicerano, Alexander Patashinski

10:12 AM A25.00010: Compliance Effects of a Modern Rheometer
Stephen Hutcheson, Gregory McKenna

10:24 AM A25.00011: Entanglements of End Grafted Polymer Brushes in a Polymeric Matrix
Gary S. Grest, Robert S. Hoy

10:36 AM A25.00012: High Strength Development at Incompatible Semicrystalline Polymer-Polymer Interfaces
C.H. Hong, Richard Wool

10:48 AM A25.00013: Elastic breakup in extensional flow of entangled melts
Yangyang Wang, Pouyan Boukany, Shi-Qing Wang
Session B6. Control and Architecture in Directed Macromolecular Self-Assembly (GSNP/DPOLY)

**Monday mid-day 15 AM, Colorado Convention Center, 207**

Chair: Alex Travesset, Iowa State University and Ames National Laboratory

- **11:15 AM** B6.00001: Geometry and universality in self-assembly
  *Invited Speaker: Mark Bowick*

- **11:51 AM** B6.00002: Colloidal atoms and molecules
  *Invited Speaker: David Pine*

- **12:27 PM** B6.00003: Colloidal Armor
  *Invited Speaker: Howard Stone*

- **1:03 PM** B6.00004: Recent Advances in Solution-state Assembly of Synthetic Polymers into Well-defined Nanostructures
  *Invited Speaker: Karen Wooley*

- **1:39 PM** B6.00005: Non-ionic micelles and encapsulation
  *Invited Speaker: Paschalis Alexandridis*

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Session B17. Pentacene and Field Effect Transistors (DMP/DPOLY)

**Monday mid-day, 11:15 AM, Colorado Convention Center, 102**

Chair: Chang Y. Ryu, Rensselaer Polytechnic Institute

- **11:15 AM** B17.00001: Organic Field Effect Transistors
  *Invited Speaker: C. Daniel Frisbie*

- **11:51 AM** B17.00002: Growth of pentacene on inorganic and organic dielectrics and sub-micron channel oTFT fabrication
  *G. Leising, B. Stadlober, U. Haas, A. Haase, H. Gold*

- **12:03 PM** B17.00003: The improvement of out of plane crystalline size of pentacene thin films on plastic substrates by transfer printing
  *S.A. Solin, Y. Shao, D.R. Hines, E.D. Williams*

- **12:15 PM** B17.00004: Enantiotropic Polymorphs in Pentacene
  *Theo Siegrist, Celine Besnard, Simon Haas, Mark Schiltz, Philip Pattison, Dmitry Chernyshov, Bertram Batlogg, Christian Kloc*

- **12:27 PM** B17.00005: Effect of impurities on pentacene thin film growth for field-effect transistors
  *Elba Gomar-Nadal, Brad R. Conrad, Ellen D. Williams*

- **12:51 PM** B17.00006: Aggregation of pentacene molecules on SiO2 substrates and its influence on the FET characteristics

- **12:51 PM** B17.00007: Orientation of Pentacene Molecules on SiO2: From a Monolayer to the Bulk
  *Fan Zheng, Byoung-Nam Park, Soonjoo Seo, Paul G. Evans, Franz J. Himpsel*

- **1:03 PM** B17.00008: Structure of a pentacene monolayer deposited on SiO2: (2)$\parallel$ Role of trapped interfacial water
  *Songtao Wo, Binran Wang, Hua Zhou, Yiping Wang, Jonathan Bessette, Randall L. Headricka, Alex C. Mayer, George G. Malliaras, Alexander Kazimirov*

- **1:15 PM** B17.00009: Molecular Scale Structure of Pentacene Interfaces
  *Soonjoo Seo, Paul Evans*

- **1:27 PM** B17.00010: Pentacene Molecules on Inert Surfaces
  *Yina Mo, Paul Maragakis, Efthimios Kaxiras*

- **1:39 PM** B17.00011: Charge-Transport Parameters in Molecular Organic Semiconductors
  *Veaceslav Coropceanu, Pavel Paramonov, Roel S. Sánchez-Carrera, Demetrio A. da Silva Filho, Jean-Luc Bredas*

- **1:51 PM** B17.00012: Scanning Tunneling Microscopy and Spectroscopy of Pentacene films Deposited on SiC
  *Sandeep Gaan, Roberto Duca, Randall Feenstra*

- **2:03 PM** B17.00013: Time Resolved Microscopy of Charge Trapping in Polycrystalline Pentacene
  *Michael Jaquith, Erik Muller, John Marohn*
Session B18. Structure and Dynamics in Polymer Nanocomposites (D POLY)
Monday mid-day, 11:15 AM, Colorado Convention Center, 103
Chair: Mitch Anthamatten, University of Rochester

11:15 AM  B18.00001: Externally Activated, Thermodynamically Governed Dispersion Behavior of Silica Nanoparticles in PMMA
Frederick Beyer, Philip Costanzo

11:27 AM  B18.00002: Single Chain Mean Field Theory (SCMF) in Polymer Nanocomposites
Sudeep Sen, Sanat Kumar, Igal Szleifer

11:39 AM  B18.00003: Improved Mechanical Properties by Grafting Nylon 6, 10 to Single Wall Carbon Nanotubes
M. Moniruzzaman, Jayanta Chattopadhay, William E. Billups, Karen I. Winey

11:51 AM  B18.00004: Mechanical properties of nanocomposite systems
George Papakonstantopoulos, Manolis Doxastakis, Mihail Vladkov, Jean-Louis Barrat, Juan de Pablo

12:03 PM  B18.00005: Morphological dependence on the conductance of polymer/MWNT electrospun mats
Derrick Stevens, Satyajeet Ojha, Wesley Roberts, Seth McCullen, Russell Gorga, Laura Clarke

12:15 PM  B18.00006: Effect of MWNT and Carbon Nanofiber Orientation in Polymer Nanocomposites on Electrical Conductivity
Karen I. Winey, Lai-Ching Chou, Minfang Mu

12:27 PM  B18.00007: Controlling the Average and Local Glass Transition Temperatures of PMMA-SWCNT Nanocomposites
Perla Rittigstein, T. Ramanathan, L. Catherine Brinson, John M. Torkelson

12:39 PM  B18.00008: The Aging Effect on Segmental Dynamics of PMMA brushes Studied by Incoherent Neutron Scattering
Pinar Akcora, Victoria Garcia-Sakai, Linda Schadler, Sanat Kumar

12:51 PM  B18.00009: Polymer Diffusion in Single Wall Nanotube / Polystyrene Nanocomposites
Minfang Mu, Russell J. Composto, Karen I. Winey

1:03 PM  B18.00010: Origin of dynamical properties in PMMA-C\textsubscript{60} nanocomposites
Jamie Kropka, Peter Green

1:15 PM  B18.00011: Instabilities in Nanoporous Media
Jiun-Tai Chen, Mingfu Zhang, Thomas Russell

1:27 PM  B18.00012: Dynamic Consequences of the Fractal Network of Nanotube - Poly(ethylene oxide) Nanocomposites
Tirtha Chatterjee, Ramanan Krishnamoorti

1:39 PM  B18.00013: Gelation of Freely Associating Single-Wall Carbon Nanotube Networks
Daniel Chen, Larry Hough, Mohammad Islam, Arjun Yodh

1:51 PM  B18.00014: Preparation and rheology of supercritical CO\textsubscript{2}-based dispersed polymer-clay nanocomposites
Rangaramanujam Kannan, Steven Horsch, Esin Gulari

2:03 PM  B18.00015: Insight into Surface Rheology of Soft-nano Composites
Jaydeep Basu, Sunita Srivastava

Session B24. Reversibly Associating Polymers: Theory & Experiments (D POLY/DBP)
Monday mid-day, 11:15 AM, Colorado Convention Center, 201
Chair: Sanat Kumar, Columbia University

11:15 AM  B24.00001: Reversible Associating Polymers as Biological Mimics
Invited Speaker: Virgil Percec

11:51 AM  B24.00002: Architectural effect on the self-assembly of supramolecular triblock copolymer melts
Won Bo Lee, Richard Elliott, Kirill Katsov, Glenn H. Fredrickson

12:03 PM  B24.00003: Osmotic Properties of Acrylic Triblock Copolymer Gels
Rafael E. Bras, Kenneth R. Shull

12:15 PM  B24.00004: Computational study of gel transition and jamming in an ensemble of reversible associating polymers
Arlette Bajon, Danny Flynn, David Krawzsenek

12:27 PM  B24.00005: Phase Behavior of Semi-Flexible Polymer Gels
Venkatram H. Padmanabhan, Sanat K. Kumar

12:39 PM  B24.00006: Modeling the Crystallization of Proteins
Hongjun Liu, Sanat Kumar, Shekhar Garde

Megan Greenfield, Yuri Velichko, Samuel Stupp, Monica Olvera de la Cruz

1:03 PM  B24.00008: Reversible and Tunable Network Formation of Ca\textsuperscript{2+}-Sensitive Biomaterials
Shana Topp, Vikram Prasad, Gianguido C. Cianci, Eric R. Weeks, Justin P. Gallivan

1:15 PM  B24.00009: Folding and Aggregation of Mucin Domains
Briga Urbanc, Rama Bansil, Bradley Turner

1:27 PM  B24.00010: Shape-Memory Network Polymers Containing Reversible H-Bonding Associating Groups
Jiahui Li, Mitchell Anthamatten

1:39 PM  B24.00011: Miscibility studies on blends containing telechelic supramolecular polymers
Michelle Wu, Mitchell Anthamatten

1:51 PM  B24.00012: Design and characterization of well-defined supramolecular polymers
Kathleen Schaefer, Matthew Kade, Craig Hawker, Edward Kramer

2:03 PM  B24.00013: Structure and stability of oligomer/\alpha-cyclodextrin inclusion complexes
Marcus Hunt, Silvia Villar, Marian Gomez, Alan Tonelli, Maury Balik
Session B25. Adhesion, Swelling, and Elastic Properties of Thin Polymer Films (DPOLY)
Monday mid-day, 11:15 AM, Colorado Convention Center, 203
Chair: Theresa Hermel-Davidock, Dow Chemical

Invited Speaker: Phil Attard

11:51 AM B25.00002: Surface wrinkling of grafted polymer brushes and its effect on interfacial adhesion
Christopher M. Stafford, Heqing Huang, Jun Young Chung

12:03 PM B25.00003: Experiments of compaction of an elastic sheet closely-packed in a rigid container
Deboeuf Stephanie, Boue Laurent, Adda-Bedia Mokhtar, Boudaoud Arezki

12:15 PM B25.00004: Dependence of the in-plane modulus of thin free-standing polymer films
Adam N. Raegen, Kari Dalnoki-Veress

12:27 PM B25.00005: Measuring Correlation Functions and Elastic Constants of 2D Layers of Block Copolymers by Single Crystal Diffraction
Gila Stein, Edward Kramer, Xuefa Li, Jin Wang

12:39 PM B25.00006: Polymer-Solid Interface Connectivity and Adhesion: Design of a Pressure Sensitive Adhesive
Shana P. Bunker, Richard P. Wool

12:51 PM B25.00007: Adhesion of soft polymers with gradients in composition
Clara Carelli, Costantino Creton, Fanny Deplace

1:03 PM B25.00008: Welding Immiscible Polymer with Supercritical Fluid
Xiaochu Wang, Isaac Sanchez

1:15 PM B25.00009: Off-Specular Neutron and X-ray Reflectometry for the Structural Characterization of Buried Interfaces
Kristopher Lavery, Vivek Prabhu, Eric Lin, Wen-li Wu, Kwang-Woo Choi, Sushil Satija, Matthew Worthington

1:27 PM B25.00010: Confinement Effects on the Swelling Behavior of Thin Polymer Films
Aleta Hagman, Kenneth R. Shull, Jin Wang, Martin Tolkien, Xuefa Li, Suresh Narayanan

1:39 PM B25.00011: Equilibrium and Kinetic Water Uptake in Ultrathin Chitosan Film
Chris Murray, John Dutcher

1:51 PM B25.00012: Grafting of Telechelic Polymers onto Functionalized Substrate in Polymeric Matrices
Rujul Mehta, Zhenyu Huang, Haining Ji, Jimmy Mays, Mark D. Dadmun

2:03 PM B25.00013: Kinetics of Grafting and Loop Formation of Telechelic Polymers on Solid Substrate
Mark Dadmun, Zhenyu Huang, Haining Ji, Jimmy Mays

Session D4. Polymer Crystallization: 50 years of Chain Folding (DPOLY)
Monday afternoon, 2:30 PM, Colorado Convention Center, Korbel 2B-3B
Chair: Buck Crist, Northwestern University

2:30 PM D4.00001: Fifty (Plus) Years of Polymer Nano-Science (Art)
Invited Speaker: Phillip Geil

3:06 PM D4.00002: The Morphology of Crystallizable Polymers: Past and Present
Invited Speaker: Freddy Khoury

3:42 PM D4.00003: Insights provided by the build-up, structure and morphology of polymer single crystals
Invited Speaker: Bernard Lotz

4:18 PM D4.00004: Laws controlling crystallization and melting in bulk polymers
Invited Speaker: Gert Strobl

4:54 PM D4.00005: Growth kinetics and morphology of polymer crystals
Invited Speaker: Akihiko Toda
### Session C1. Poster Session I (DPOLY)
**Monday afternoon, 2:00 PM, Colorado Convention Center, Exhibit Hall F**

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<td>Lyotropic Phase Behavior of Concentrated Solutions of Diblock Copolymers in an Ionic Liquid</td>
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<td>Correlation length of a near-critical, eight-arm star polystyrene in methylcyclohexane</td>
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<td>Synthesis of Polymeric Nanoparticles by Self-Assembly in Solution of Living Block Copolymers and Application of the Particles in Rubber Compounds</td>
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C1.00032: Depth Profiling using NEXAFS Spectroscopy
Karen Sohn, Sitaraman Krishnan, Marvin Paik, Christopher Ober, Ed Kramer, Daniel Fischer

C1.00033: Composition Dependence on the Closed-loop Phase Block Copolymer by Interaction Chromatography

C1.00034: Surface Characterization of Aliphatic Polyester textil-(g-) Phosphorylcholine Copolymers
Xiongfei Zhang, Todd Emrick, Shaw L. Hsu

C1.00035: Isolated nanomagnetic clusters formed by diblock copolymer phase separation inside nanopores of aluminum oxide membrane
Priyanka Dobriyal, Thomas P. Russell, David Rider, Ian Manners

C1.00036: Fabrication of Highly Distensible, Nanostructured Elastic Hydrogels from Block Copolymer Based Self-Assembly
Chih-Yu Teng, Travis Bailey

C1.00037: Phase structures of a series of bent-core mesogen jacketed liquid crystalline block copolymers
Kishore Tenneti, Xiaofang Chen, Christopher Li, Lixia Rong, Benjamin Hsiao

C1.00038: Phase Behavior of Rod-Coil Block Copolymer Blends
Y. Tao, B.D. Olsen, Venkat Ganesan, R.A. Segalman

C1.00039: pH-Responsive Nanostructures Assembled from Amphiphilic Block Copolymers
Chen Xu, Bradford Wayland, Michael Fryd, Karen Winesy, Russell Composto

C1.00040: Characterization of Nanostructures with Internal Phase Separation from Triblock Copolymers of PAA-b-PMA-b-PS
Kelly Hales, Honggang Cui, Darrin Pochan, Zhiyun Chen, Karen Wooley

C1.00041: Dual responsive PPO-P(Lys) block copolymer assemblies
Gopal Venkatachalam, Sandeep S. Naik, Daniel A. Savin

C1.00042: Block Copolymer Templates for Structured Nanocomposites
Rafal A. Mickiewicz, Apostolos Avgeropoulos, Edwin L. Thomas

C1.00043: Phase Transitions and Honeycomb Morphology in an Incompatible Blend of Enantiomeric Poly lactide Block Copolymers
Lu Sun, Jorge Ginorio, Lei Zhu, Lixia Rong, Igor Sics, Benjamin Hsiao

C1.00044: Spin-on Di-block Copolymer Films for Covalent DNA Attachment
Heman Rengifo, Cristian Grigoras, Jingyue Ju, Jeffrey Koberstein

C1.00045: Zone Annealed Thin Block Copolymer Films on Chemical Micropatterns
Sangcheol Kim, Brian C. Berry, Ronald L. Jones, Alamgir Karim, Robert M. Brier, Ho-Cheol Kim

C1.00046: Block copolymer lithography for growth of wide band gap nanostructures: Process control and optimization
Kasiraman Krishnan, Azar Alizadeh, Oliver Boomhover, Kenneth Conway, Lauraine Denault, David Hays, Christopher Keimel, Rosalyn Neander, Seth Taylor, Andreas Stintz, Jay Brown, Sanjay Krishna, Edit Braunstein, Colin Jones

C1.00047: Alignment of spherical block copolymer microdomains with substrate features: effects of step edge height and film thickness
Nathaniel T. Lawrence, Matthew L. Trawick, John M. Yarbrough, Gary M. Atkinson, Michael J. Fasolka, Douglas H. Adamson, Richard A. Register

C1.00048: Holographic patterning of block copolymers
Michael Birnkrant, Christopher Li, Lalgudi Natarajan, Vincent Tondiglia, Pamela Lloyd, Richard Sutherland, Timothy Bunning

C1.00049: Mechanism of Thermal Crystallization in Silk Fibroin
Xiao Hu, David Kaplan, Peggy Cebe

C1.00050: Rigid Amorphous Fraction and Lamellar Structure in Nylon-6
Huipeng Chen, Peggy Cebe

C1.00051: Tethered Polymer Chains on Single Crystal Surfaces

C1.00052: The effect of SAM interlayer on the crystalline orientation of PVDF-TrFE thin film in ferroelectric polymer capacitor
Youn Jung Park, Seok Ju Kang, Cheolmin Park

C1.00053: Influence of Confinement on Crystallization of Isotactic Polypropylene
Xiaofeng Chen, Rahmi Ozisik, Sanat K. Kumar

C1.00054: A Comparative Study of Self-Seedung and Isothermal Crystallization in Polyethylene Solutions
Howard Wang, Narayan Ch Das, Kaikun Yang, Boualem Hammouda

C1.00055: Semicrystalline/carbon nanotube nanohybrid shish-kebabs
Christopher Li, Lingyu Li, Bing Li, Kishore Tenneti

C1.00056: Spectroscopic Analysis of Amorphous Fluorinated Polymers
Yuning Yang, Shaw L. Hsu

C1.00057: Phonons and Heat Capacity of Biodegradable Poly(lactic Acid)
R. Stagraczynski, M. Pyda

C1.00058: Polymer Surface Modification by Adsorbing Functional Block Copolymer from a Supercritical Fluid
Yong Chen, Jeiran Jahani, Jeffrey Koberstein

C1.00059: Self-Organization and Chain-Folding in Hybrid Coil-Coil-Cube Triblock Oligomers of Polyethylene-b-Poly(ethylene oxide)-b-Polyhedral Oligomeric Silsesquioxane (POSS)
 Jianjun Miao, Li Cui, Lei Zhu
Session H2. Polymer Physics Prize (DPOLY)
Tuesday morning, 8:00 AM, Colorado Convention Center, Four Seasons 4
Chair: Steve Granick, University of Illinois at Urbana-Champaign

8:00 AM  H2.00001: Challenges for Polymer Theory and Simulation
Invited Speaker: Glenn H. Fredrickson

8:36 AM   H2.00002: Self-Assembly of Monolayer and Multilayer Films of Spherical-Domain Diblock Copolymers
Invited Speaker: Edward J. Kramer

9:12 AM   H2.00003: On the consequences of interacting with Glenn Fredrickson
Invited Speaker: Frank Bates

9:48 AM   H2.00004: Supramolecular concepts in self-assembly of complex polymer systems
Invited Speaker: Raffaele Mezzenga

10:24 AM  H2.00005: PE Crystallization and Rotator Phases
Invited Speaker: Scott Milner

Session H17. Theory and Simulation - Polyelectrolites & Brushes (DPOLY)
Tuesday morning, 8:36 AM, Colorado Convention Center, 102
Chair: Kevin Cavicchi, University of Akron

8:36 AM   H17.00002: Wigner Crystallization of Chiral Polyelectrolyte Bundles
Gregory Grason, Robijn Bruinsma

8:48 AM   H17.00003: Variable length condensing agents in polyelectrolyte condensation
Richard Guaqueta, Erik Luijten

9:00 AM   H17.00004: Complexation in poly-electrolyte solutions: field theoretic simulations of fluctuation induced phase transition
Jonghoon Lee, Yuri Popov, Glenn Fredrickson

9:12 AM   H17.00005: Field Theory of Polyelectrolyte Complexation
Yuri Popov, Glenn Fredrickson

9:24 AM   H17.00006: Rouse Dynamics of Polyelectrolyte Solutions: Molecular Dynamics Study
Andrey Dobrynin, Qi Liao, Michael Rubinstein

9:36 AM   H17.00007: Effect of Interfacial Curvature on the Miscibility of Mixed Charged and Neutral Polymer Brushes
You-Yeon Won, Kevin Witte

9:48 AM   H17.00008: Anisotropic Fluctuation Effects in Polyelectrolyte Adsorption
Ying Jiang, Qiang Wang

10:00 AM  H17.00009: Local algorithms for Coulomb's law in molecular dynamics
Joerg Rottler

10:12 AM  H17.00010: Adaptive Resolution in Molecular Dynamics Simulations
Matej Praprotnik, Luigi Delle Site, Kurt Kremer, Silvina Matysiak, Cecilia Clementi

10:24 AM  H17.00011: Transitions of tethered polymer chains
Jutta Luettmer-Strathmann, Federica Rampf, Wolfgang Paul, Kurt Binder

10:36 AM  H17.00012: Finite-Stretching Corrections to the Strong-Stretching Theory of Polymer Brushes in Solvent
Jaeup Kim, Mark Matsen
Session H18. De Novo Designed Peptides as Building Nanostructural Blocks (DPOLY/DBP)  
**Tuesday morning, 8:36 AM, Colorado Convention Center, 103**  
Chair: Darrin Pochan, University of Delaware

8:36 AM  H18.00002: Responsive Polypeptide-based Block Copolymer Assemblies  
Daniel A. Savin, Gopal Venkatachalam, Sandeep S. Naik, Kay E. Gebhardt

8:48 AM  H18.00003: Early Stages of De Novo Designed Beta-Hairpin Peptide Self-Assembly  
Tuna Yucel, Joel P. Schneider, Darrin J. Pochan

9:00 AM  H18.00004: Effect of Strand Symmetry on the Nanostructure and Material Properties in Beta-Hairpin Peptide Hydrogels  
Rohan Hule, Darrin Pochan, Radhika Nagarkar, Joel Schneider

9:12 AM  H18.00005: Self-assembling, bioactive protein hydrogels via engineered coiled-coil aggregation  
James Harden, Stephen Fischer, Lixin Mi

9:24 AM  H18.00006: Planar peptide processing  
Kirk Baldwin, Robert Willett

9:36 AM  H18.00007: Self-Assembling Octa-peptides  
Aline Miller, Antonios Konstantopolous, Laurent Caron, Alberto Saiani

9:48 AM  H18.00008: Sequence Dependent Peptide Self-Assembly and Beta-Sheet Fibrils as Templates for Inorganic Material  
Matthew Lamm, Darrin Pochan, Joel Schneider

10:00 AM  H18.00009: Incorporation of Designed Extended Chromophores into Amphiphilic 4-helix Bundle Peptides for Biomolecular Materials  
Ting Xu, Jiayu Wang, Joe Strzalka, Thomas Russell, Michael Therien, J. Kent Blasie

10:12 AM  H18.00010: Turning protein into room temperature molecular magnet  
Chia-Ching Chang, Shang-Fan Lee, Kien-Wen Sun, Lou-Sing Kan

10:24 AM  H18.00011: Interaction of the synthetic polypeptide poly(FFDD) with single-walled carbon nanotubes  
Yachin Cohen, Merav Granite, Amram Mor, Wim Pyckhout-Hintzen

10:36 AM  H18.00012: Investigating the specificity of adsorption of onto gold by gold-binding peptides using molecular dynamics simulations  
Ana Vila Verde, Janna Maranas

10:48 AM  H18.00013: Direct Assembly of Periplasmic Binding Proteins on Gold Surfaces  
Cristian Staii, David Wood, Giacinto Scoles

Session H24. Molecular Electronics and Quantum Dots (DMP/DPOLY)  
**Tuesday morning, 8:36 AM, Colorado Convention Center, 201**  
Chair: Antoine Kahn, Princeton University

8:36 AM  H24.00002: Fixed PIN junction polymer light-emitting electrochemical cells based on self-assembled doping monolayers  
Daniel Simon, David Stanislowski, Sue Carter

8:48 AM  H24.00003: Thermopower and Electrical Conductance Measurements of Single Molecule Junctions  
Pramod Sangi Reddy, Sung-Yeon Jang, Rachel Segalman, Arun Majumdar

9:00 AM  H24.00004: Quantum Dots Tailored with Conjugated Polymer  
Jun Xu, Zhiqun Lin

Kai Chen, Cemil Durak, Randy Heflin, Hans Robinson

9:24 AM  H24.00006: Theoretical study of photoisomerization of azobenzene derivatives on Au(111)  
David A. Strubbe, Matthew J. Comstock, Niv Levy, Armen Kirakosian, Jongweon Cho, Michael F. Crommie, Steven G. Louie

9:36 AM  H24.00007: Magnetic Field Effect on Hybrid Exciton in a Quantum Dot Coated by an Organic Shell  
Justin Angus, Que Huang Nguyen

9:48 AM  H24.00008: Reversible Photomechanical Switching of Individual Engineered Molecules at a Surface  
Matthew Comstock, Niv Levy, Armen Kirakosian, Jongweon Cho, Frank Lauterwasser, Jessica Harvey, David Strubbe, Jean Frédét, Dirk Trauner, Steven Louie, Michael Crommie

10:00 AM  H24.00009: Reliable and Versatile Molecular Electrodes  
Pawan Tyagi, Dongfeng Li, Stephen Holmes, Bruce Hinds

10:12 AM  H24.00010: Manipulation of Kondo Effect via Two-Dimensional Molecular Self-Assembly  
Violeta Iancu, Aparna Deshpande, Saw-Wai Hla

10:24 AM  H24.00011: Spatial correlation of photoisomerization of functionalized azobenzene molecules on a surface  

10:36 AM  H24.00012: Electron transport through the building blocks of proteins  
David Cardamone, George Kirczewo
Session J4.  Polymer-based Composite Materials (DPOLY/FIAP)
Tuesday mid-day, 11:15 AM, Colorado Convention Center, Korbel 2B-3B
Chair: Karen Winey, University of Pennsylvania

11:15 AM  J4.00001: Nanostructure Evolution in Polymer/Nano-object Hybrids
Invited Speaker: Kookheon Char

11:51 AM  J4.00002: Curved Brushes: Ordering and Dynamics of Silica Polymer Nanocomposites
Invited Speaker: Ramanan Krishnamoorti

12:27 AM  J4.00003: The phase stability and properties of polymer - nanoparticle blends
Invited Speaker: Michael Mackay

1:03 PM  J4.00004: Aggregation Steric Stabilization Bridging and Miscibility of Polymer Nanocomposites
Invited Speaker: Kenneth Schweizer

1:39 PM  J4.00005: Polymer brushes on nanoparticles: their positioning in and influence on block copolymer morphology
Invited Speaker: Bumjoon Kim

Session J17.  Elastomers & Gels (DPOLY)
Tuesday mid-day, 11:15 AM, Colorado Convention Center, 102
Chair: Ronald Hedden, Pennsylvania State University

11:15 AM  J17.00001: Depth Dependence of Shear Properties in Articular Cartilage
Mark Buckley, Jason Gleghorn, Lawrence Bonassar, Itai Cohen

11:27 AM  J17.00002: Determining Local Mechanical Properties of Soft Materials with Cavitation Rheology
Jessica A. Zimberlin, Alfred Crosby

11:39 AM  J17.00003: Soft Segment Orientation Effects on the Morphology
Ryan Waletzko, Paula Hammond

11:51 AM  J17.00004: Structure and mechanical properties of hydrophobically modified hydrogels
Guillaume Miquelard-Garnier, Dominique Hourdet, Costantino Creton

12:03 PM  J17.00005: Molecular Origins for the Superior Toughness of Double-Network Hydrogels
Taiki Tominaga, Vijay Tirumala, Eric Lin, Wen-li Wu, Jian Ping Gong, Hidemitsu Furukawa, Yoshihito Osada

12:15 PM  J17.00006: Neutron scattering from polyelectrolyte solutions in the presence of a hydrophilic polymer
Wen-li Wu, Sanghun Lee, Taiki Tominaga, Vijay Tirumala, Eric Lin, Jian Ping Gong, Hidemitsu Furukawa, Yoshihito Osada

12:27 PM  J17.00007: Neutron scattering from double-network hydrogels subjected to uniaxial extension
Vijay Tirumala, Taiki Tominaga, Steven Hudson, Eric Lin, Wen-li Wu, Jian Ping Gong, Hidemitsu Furukawa, Yoshihito Osada

12:39 PM  J17.00008: The Conformational Elasticity Theory and Its Applications
Xiaozhen Yang

12:51 PM  J17.00009: Modeling mechanochemical transduction in chemo-responsive gels
Olga Kuksenok, Victor Yashin, Anna C. Balazs

1:03 PM  J17.00010: Thermoreversible Ion Gels by Block Copolymer Self-assembly in Ionic Liquids
Yiyong He, Timothy Lodge

1:15 PM  J17.00011: Diblock copolymers containing compositionally-uniform poly(HEMA-co-DMAEMA)
Kyle Guice, Raymond Teoh, Yueh-Lin Loo

1:27 PM  J17.00012: Small Angle Neutron Scattering Studies of the Counterion Effects on the Molecular Conformation and Structure of Charged G4 PAMAM Dendrimers in Aqueous Solutions
Wei-Ren Chen, Lionel Porcar, Yun Liu, Paul Butler

1:39 PM  J17.00013: Creasing of soft surfaces under compression
Ryan Hayward, Veronica Trujillo, Genevieve Tucker, Emine Memis

1:51 PM  J17.00014: Schallamach Wave Periodicity in Soft Elastomer Friction
Charles Rand, Alfred Crosby
## Complex diffusion in biopolymer networks with added molecular crowding

Daniel R. Sisan, Jeffrey S. Urbach

### Session J24. Frank J. Padden Award Symposium (DPOLY)

**Tuesday mid-day, 11:15 AM, Colorado Convention Center, 201**

Chair: Azar Alizadeh, General Electric Research Center

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<tr>
<th>Time</th>
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<td>11:15 AM</td>
<td>J24.00001: How ideal are the ideal-like polymers</td>
<td>David Shirvanyants, Sergey Panyukov, Michael Rubinstein</td>
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<td>11:27 AM</td>
<td>J24.00002: Self-Assembly of Block Copolymers in a Nematic Liquid Crystal Solvent</td>
<td>Neal Scruggs, Rafael Verduzco, Julia Komfield</td>
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<td>11:39 AM</td>
<td>J24.00003: Threading Synthetic Polyelectrolytes through Protein Pores</td>
<td>Ryan Murphy, Murugappan Muthukumar</td>
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<td>11:51 AM</td>
<td>J24.00004: Order and Disorder in Polydisperse Block Copolymer Melts</td>
<td>Nathaniel Lynd, Marc Hillmyer</td>
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<td>12:03 PM</td>
<td>J24.00005: Morphological Evolution of Poly (caprolactone) Dendrites during Isobaric Relaxation</td>
<td>Bingbing Li, Alan Esker</td>
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<td>12:15 PM</td>
<td>J24.00006: How Polymers Diffuse in Molecularly-Thin Films</td>
<td>Liang Hong, Steve Granick</td>
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<td>12:27 PM</td>
<td>J24.00007: Phononics and elastic moduli in polymeric and biological nanostructures</td>
<td>Ryan Hartschuh, Johnathan Neiswinger, Huiming Xiong, Alexander Kissluk, Alexei Sokolov,</td>
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<td>Stephen Wargacki, Richard Vaia</td>
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<td>J24.00008: Surface Dynamics of Glassy Polymer Films and Its Effect on Glass Transition</td>
<td>Zahra Fakhraai, James A. Forrest</td>
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<td>12:51 PM</td>
<td>J24.00009: Thermodynamic and Kinetic Control of Charged Triblock Copolymer Assembly</td>
<td>Honggang Cui, Darrin Pochan, Zhiyun Chen, Karen Wooley</td>
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<td>1:03 PM</td>
<td>J24.00010: Structured Interfaces of Surface Wrinkles for Adhesion, Optics and Sensors</td>
<td>Edwin Chan, Alfred Crosby</td>
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### Session J25. Hybrid Organic, Inorganic Nanomaterials: Synthesis, Assembly (DPOLY/FIAP)

**Tuesday mid-day, 11:15 AM, Colorado Convention Center, 203**

Chair: Rich Vaia, Air Force Research Laboratory

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<tr>
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<tr>
<td>11:15 AM</td>
<td>J25.00001: Directing and Orienting Nanoparticles and Nanorods at Fluid Interfaces, within Templates, and on Substrates</td>
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<td>Invited Speaker: Todd Emrick</td>
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<td>11:51 AM</td>
<td>J25.00002: Formation of Giant Meso-Polymers from Magnetic Nanoparticles Using Fossilized Liquid Assembly</td>
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<td>Jason Benkoski, Steven Bowles, Ronald Jones, Jack Douglas, Jeffrey Pyun, Alamgir Karim</td>
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<td>J25.00003: Nanoparticle Alignment and Repulsion During Failure of Glassy Polymer Nanocomposites</td>
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<td>Alfred Crosby, Jong-Young Lee, Qingling Zhang, Todd Emrick</td>
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<td>J25.00004: Solvent-Mediated Plasmon-Tuning in a Nanoparticle-Poly(Ionic Liquid) Organogels and Hydrogels</td>
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<td>Millicent Firestone, Dolly Batra, Soenke Seifert</td>
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<td>J25.00005: Immobilizing Au Nanoparticles with Polymer Single Crystals, Patterning and Asymmetric Functionalization</td>
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<td>Bing Li, Christopher Li</td>
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<td>J25.00006: High-Energy Density Capacitors using Nanoparticle-Polymer Composite Dielectrics</td>
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<td>Kristin Kraemer, Jiayu Li, Lei Zhang, D.J. Sellmyer, X. Wei, Stephen Ducharme</td>
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<td>J25.00007: Fabrication of Patterned Mesoporous Silica Films Templated From Chemically Amplified Block Copolymers</td>
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<td>Sivakumar Nagarajan, Joan Bosworth, Christopher Ober, James Watkins, Thomas Russell</td>
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<td>J25.00008: Metal nanocrystals incorporated within pH-responsive microgel particles</td>
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<td>Maria Vamvakaki, D. Palioura, S.H. Anastasiadis, S.P. Armes</td>
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<td>J25.00009: Self-Assembly of Magnetic Nanoparticles at the Surface and Within Block Copolymer Films</td>
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<td>Chen Xu, Kohji Ohno, Russell Composto</td>
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<td>1:27 PM</td>
<td>J25.00010: Effect of Nanoparticles on the Phase Morphology of Block copolymers</td>
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<td>David Bucknall, Deepali Palta</td>
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<td>J25.00011: Limitations of electric field assisted patterning of nanoparticle filled polymers</td>
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<td>Hilmar Koerner, Richard Vaia, Wei Lu, Evangelos Manias</td>
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<td>1:51 PM</td>
<td>J25.00012: Separation of Ionic Solutes Using Nanoparticle-Crosslinked Polymer Hydrogels</td>
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<td>Peter Thomas, Bani Cipriano, Srinivasa Raghavan</td>
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<td>2:03 PM</td>
<td>J25.00013: Molecular Dynamics Simulations of Cubic Phases in Pluronics Systems and Their Role in Templating Nanoparticles</td>
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<td>Joshua Anderson, Alex Travesset, Chris Lorenz</td>
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### Session L2. Organic and Molecular Bistability and Memory Devices (FIAP/DPOLY)

**Tuesday afternoon, 2:30 PM, Colorado Convention Center, Four Seasons 4**

Chair: Yongli Gao, University of Rochester

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<tr>
<th>Time</th>
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<tr>
<td>2:30 PM</td>
<td>L2.00001: Organic electrical bistable devices and applications as electronic digital memory</td>
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<td>Invited Speaker: Yang Yang</td>
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<td>3:06 PM</td>
<td>L2.00002: Evaluation of switchable organic devices for nonvolatile memory applications</td>
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<td>Invited Speaker: J. Campbell Scott</td>
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<td>3:42 PM</td>
<td>L2.00003: Nonvolatile Memory in Organic Thin Films</td>
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<td>Invited Speaker: Ghassan Jabbour</td>
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<td>4:18 PM</td>
<td>L2.00004: Controlling nanostructure in organic films to achieve high photovoltaic efficiency</td>
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<td>Invited Speaker: Stephen Forrest</td>
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<td>4:54 PM</td>
<td>L2.00005: Large-Scale Molecular and Nanoelectronic Circuits &amp; Associated Opportunities</td>
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<td>Invited Speaker: Jim Heath</td>
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Session L17.  Rheology, Transport, and Processing (DPOLY)  
Tuesday afternoon, 3:06 PM, Colorado Convention Center, 102  
Chair: Erik Hobbie, National Institute of Standards and Technology

3:06 PM  L17.00002: A new molecular theory beyond tube model to describe cohesive breakdown in nonlinear flow of entangled polymers  
Shi-Qing Wang

3:18 PM  L17.00003: Image Correlation Spectroscopy of Actin Networks  
Jeffrey Urbach, Dan Sisan

3:30 PM  L17.00004: Shape instabilities in absorbed polymer condensates  
Gerald Pereira

3:42 PM  L17.00005: Structure and Interactions in Neurofilament Networks  
Jayna Jones, Joanna Deek, Cyrus Safinya

3:54 PM  L17.00006: Large-scale diffusion in thick photopolymer systems  
Matthew W. Grabowski, Amy C. Sullivan, Robert R. McLeod

4:06 PM  L17.00007: Mechanisms for achieving high energy density in PVDF: a first-principles investigation  
V. Ranjan, L. Yu, Marco Buongiorno Nardelli, J. Bernholc

4:18 PM  L17.00008: Interfacial Density Profiles of Poly(methyl Methacrylate) with Liquids  
Keiji Tanaka, Yoshishisa Fuji, Hironori Aitarashi, Masahiro Hino, Toshitoko Nagamura

4:30 PM  L17.00009: Initiated Chemical Vapor Deposition of Poly(methyl methacrylate)  
Xichong Chen, Mitchell Anthamatten

4:42 PM  L17.00010: Molecular Dynamics Simulations of Nanomolding Process  
Jan-Michael Carrillo, Andrey Dobrynin

4:54 PM  L17.00011: Morphology development in electrospun nanofibers  
Thein Kyu, Pratyush Dayal

5:06 PM  L17.00012: Production of bi-component core-sheath nanofibers using Chitosan and Polyethylene oxide  
Satyajit Ojha, Derrick Stevens, Laura Clarke, Russell Gorga

5:18 PM  L17.00013: Coarse Grained Modelling of Nanotube Stabilization by PEO Adsorption and Grafting  
Justin Hooper, Dmitry Bedrov, Grant Smith

Session L24.  John H. Dillon Award Symposium (DPOLY)  
Tuesday afternoon, 2:30 PM, Colorado Convention Center, 201  
Chair: Timothy Bunning, Wright Patterson Air Force Base

2:30 PM  L24.00001: Swell Gels to Dumbbell Micelles: Construction of Materials and Nanostructure with Self-assembly  
Invited Speaker: Darrin Pochan

3:06 PM  L24.00002: Morphological Characterization of Silicone Hydrogels  
Samuel Gido

3:18 PM  L24.00003: The Application of Specular X-ray Reflectivity to Characterize Patterned Surface  
Wen-li Wu, Hae-Jeong Lee, Christopher L. Soles

3:30 PM  L24.00004: Collaborative Investigations of Supramolecular Polymer Assembly Processes  
Karen Wooley

3:42 PM  L24.00005: Self-Generated Fields and Morphogenesis in Polymer Crystallization  
Jerald Schultz

3:54 PM  L24.00006: Propagating Waves of Self-Assembly in Organisilane Monolayers  
Jack Douglas, Kirill Efimenko, Daniel Fischer, Fredrick Phelan, Jan Genzer

4:06 PM  L24.00007: Receptor-Ligand Interactions and Adsorption at the Oil Water Interface  
Kenneth Shull, Daniel Carvajal, Chi-Yang Chao

4:18 PM  L24.00008: Microstructure foundations of high carrier mobility in polymers  
Eric Lin, Dean DeLongchamp, R. Joseph Kline, Daniel Fischer, Lee Richter, Andy Moad, Martin Heeney, Iain McCulloch, John Northrup

4:30 PM  L24.00009: Phase Separated Polymer Systems on Surfaces and Some Applications in Super-Hydrophobicity  
Charles C. Han, Yonghua Yao, Xia Dong

4:42 PM  L24.00010: Multicompartiment micelles from ABC copolymers  
Tim Lodge

4:54 PM  L24.00011: Gold Nanoparticle Liquids and Dispersions: Structure and Phase Stability  
Richard Vaia, Stephen Diamanti, Robert MacCuspie, Hilmar Koerner, Mitra Yoneessi, Mark Pender

5:06 PM  L24.00012: Thin Film Composites of Block Copolymers and Bio-Nanoparticles  
Thomas Russell, Dongseok Shin, Ting Xu, Seung Hyun Kim, Qian Wang

5:18 PM  L24.00013: Structure and Rheology of Shear-Banding Wormlike Micellar Solutions  
Norman Wagner
Session L25. Organic Spintronic Materials and Nano-Spintronic Materials  
(DPOLY/DMP)  
Tuesday afternoon, 3:06 PM, Colorado Convention Center, 203  
Chair: Joseph Shinar, Iowa State University

3:06 PM  L25.00002: Understanding electronic properties at organic/silicon interfaces from first principles  
Invited Speaker: Leeor Kronik

3:42 PM  L25.00003: Ferromagnetism in a Porphyrin-based Organic Semiconductor  
J. Moreno, M.A. Majidi, W.A. Schwalm, R.S. Fishman

3:54 PM  L25.00004: Self-Assembly of Magnetic Molecules on GaN(0001)  
Saw W. Hla, Danda P. Acharya, Violeta Iancu, Erdong Lu, Arthur R. Smith

4:06 PM  L25.00005: Atomic and Electronic Structure of a Novel Two-Dimensional Molecular Magnet System  
Anthony Caruso, Trevor Tyson, Douglas Schulz, Wolfgang Caliebe

4:18 PM  L25.00006: Growth and electronic structure of tetracyanoethylene on noble metals studied by scanning tunneling microscopy  
Daniel Wegner, Ryan Yamachika, Yayu Wang, Bart Bartlett, Jeff Long, Mike Crommie

4:30 PM  L25.00007: Strong electron-phonon interaction in e-e correlated molecular systems  
Yuri Dahnovsky

4:42 PM  L25.00009: Electron Spin Relaxation in Hole Polaron States of Conjugated Porphyrin Arrays  
Paul J. Angiolillo, Paul R. Frail, Nora Graneto, Devlin Murdock, Michael J. Therien

5:06 PM  L25.00011: Low Temperature STM Investigation of Molecular Kondo Effect  
Gayani Perera, Violeta Iancu, Saw-Wai Hla

Session M24. DPOLY Business Meeting followed by Discussion on Research Funding from the National Science Foundation (DPOLY)  
Tuesday afternoon, 5:45 PM, Colorado Convention Center, 201  
Chair: Steve Granick, University of Illinois at Urbana-Champaign

5:45 PM  DPOLY Business Meeting  
Steve Granick, Barry Farmer

6:45 PM  Discussion on Research Funding from the National Science Foundation  
Andrew J. Lovinger
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Discussion on Research Financing from the National Science Foundation (Rm. 201)

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You are invited to attend a discussion forum on funding in polymers from the National Science Foundation (NSF).

Dr. Andrew Lovinger, Polymers Program Director in the Division of Materials Research at NSF, will discuss current research opportunities and answer questions on polymer-related funding at NSF.

The discussion forum will take place immediately after the Business Meeting of the Division of Polymer Physics of the American Physical Society on Tuesday, March 6th, 2007.

All students and new faculty are particularly encouraged to attend both meetings and participate in the discussion.

Date: March 6th, 2007  
Location: Colorado Convention Center, Rm. 201  
Business meeting: 5:45-6:45 PM  
Discussion forum: 6:45-7:45 PM
Session N4. Novel Approaches Aimed at Rational Design of Functional Polymeric Materials (D POLY)
Wednesday morning, 8:00 AM, Colorado Convention Center, Korbel 2B-3B
Chair: Jan Genzer, North Carolina State University

8:00 AM  N4.00001: Conformation-Dependent Design of Copolymer Sequences
Invited Speaker: Alexei R. Khokhlov

8:36 AM  N4.00002: Novel Antimicrobial Materials
Invited Speaker: Gregory N. Tew

9:12 AM  N4.00003: Biosynthetic Polypeptides as Templates in Materials Design
Invited Speaker: Kristi Kiick

9:48 AM  N4.00004: Polyvalent Recognition of Biopolymers: The Design of Potent Inhibitors of Anthrax Toxin
Invited Speaker: Ravi Kane

10:24 AM N4.00005: Recent Advances in the Synthesis of Polymeric Nanostructured Materials
Invited Speaker: Craig Hawker

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Session N17. Adsorption Phenomena (D POLY)
Wednesday morning, 8:00 AM, Colorado Convention Center, 102
Chair: Hide Yokoyama, Advanced Industrial Science and Technology, Japan

8:00 AM  N17.00001: Adsorption of polymers on colloid particles
Dadong Yan, Shuang Yang, Charles C. Han, An-Chang Shi

8:12 AM  N17.00002: Colloidal Lithography and Particle Decoration Metrology
Steven Hudson, Thuy Chastek, Barry Bauer

8:24 AM  N17.00003: Adsorption and Fractionation of RAFT-polymerized PS-b-PMMA Block Copolymers for 2D Liquid Chromatography
Junwun Han, Chang Y. Ryu, Ho-Cheol Kim, Greg Breyta, Hiroshi Ito

8:36 AM  N17.00004: Direct Fluorescence Measurements of Polymer Surface Diffusion and Intramolecular Rearrangements
Janet Wong, Liang Hong, Sung Chul Bae, Steve Granick

8:48 AM  N17.00005: Brownian diffusion close to polymer brushes
Benoit Loppinet, Emma Filipidi, Vassilik Michailidou, George Fytas, Juergen Ruehe

9:00 AM  N17.00006: Displacer Effects on Pre-adsorbed Polystyrenes In Nanoporous Silica
Chang Y. Ryu, Chansu Kim, Joel Batson, Sanat Kumar

9:12 AM  N17.00007: Theory of the adsorption of polymers onto chemically non-uniform surfaces with applications to the polymer adsorption onto the mixed brushes
Alexander Chervanyov, Gert Heinrich

9:24 AM  N17.00008: Effect of Silane Sizing on Polymer-Glass Adhesion
Moshe Gottlieb, Haim Dvir

9:36 AM  N17.00009: Dynamic Self-Assembly of Polymers from a Sphere-on-Flat Geometry
Zhiqun Lin, Suck Won Hong, Jun Xu

9:48 AM  N17.00010: Monte Carlo Simulations of the Selective Adsorption of Heteropolymers on Heterogeneous Surfaces
Jesse Ziebarth, Jennifer Williams, Yongmei Wang

10:00 AM N17.00011: The breaking of chiral symmetry using long-range electrostatic forces
Kevin Kohlstedt, Francisco Solis, Graziano Vernizzi, Monica Olvera de la Cruz

10:12 AM N17.00012: Activated Desorption of Water from a Polymer Surface

10:24 AM N17.00013: Understanding Polymer Adhesion: First-principles calculations of the adsorption of organic molecules onto Si surfaces
Karen Johnston, Risto M. Nieminen

10:36 AM N17.00014: Quartz Microbalance Measurement of Adsorption Potential Well-Depths
Ryan Foltz, Rafael Garcia

10:48 AM N17.00015: Phonon-induced Anisotropy in Dispersion Forces on a Metallic Substrate
Je-Luen Li
Session N24. Organic LEDs and Light Emission (DPOLY/DMP)
Wednesday morning, 8:00 AM, Colorado Convention Center, 201
Chair: Eric Lin, National Institute of Standards and Technology

8:00 AM N24.00001: Green polariton photoluminescence in organic microcavities containing the red-emitting phosphor POPOP
Stephane Kena-Cohen, Stephen R. Forrest

8:12 AM N24.00002: Morphology, structure and photoluminescence properties of thin films of a conjugated polymer poly(2,5-dinonyl para phenyleneethynylene)
Craig Szymanski, Yunfei Jiang, Jasson McNillle, Dvora Perahia, Uwe H. F. Bunz

8:24 AM N24.00003: Photoluminescence study of 8-hydroxyquinoline aluminum/aluminum oxide tris(8-hydroxyquinoline) aluminum interface
Huanjun Ding, Serkan Zorba, Yongli Gao, Liping Ma, Yang Yang

Invited Speaker: Donal Bradley

9:12 AM N24.00005: Study of thermal degradation of organic light emitting device structures by X-ray scattering
Young Joo Lee, Heeju Lee, Youngsuk Byun, Sanghoon Song, Je-Eun Kim, Daeyong Eom, Won Suk Cha, Hyeunjung Kim, Seong-Sik Park, Jinwook Kim

9:24 AM N24.00006: Luminescence from single colloidal nanocrystals embedded in organic light emitting devices
August Dorn, Hao Huang, Vladimir Bulovic, Mouni Bawendi

9:36 AM N24.00007: Charge injection and Raman scattering studies from polyfluorene-based light-emitting diodes
M. Arif, S. Guha

9:48 AM N24.00008: Multi-walled carbon nanotube sheets as transparent anodes in organic light-emitting diodes
Christopher Williams, Raquel Ovalle Robles, Mei Zhang, Sergey Li, Ray Baughman, Anvar Zakhidov

10:00 AM N24.00009: Conformations in di-octyl substituted polyfluorene: a combined theoretical and experimental Raman scattering study
C. Volz, M. Arif, S. Guha

Elizabeth M. Lupton, Feng Liu

10:24 AM N24.00011: NEXAFS measurements of chain alignment in order polyfluorene thin films
Xiaosong Liu, Hyeonseok Cheun, Frank Galbrecht, F. J. Himpsel, Ulrich Scherf, Michael Winokur

10:36 AM N24.00012: Optical studies of platinum-containing conjugated polymers
Minghong Tong, Alessio Gambetti, Tomer Drori, Zeev Vardeny

10:48 AM N24.00013: Crystalline PTCDA waveguides grown by organic molecular beam deposition
V.R. Ganglanka, J. Markus, H. Schmitzer, H.P. Wagner

Session N25. Biopolymers I: Mechanical Properties (DPOLY/DBP)
Wednesday morning, 8:00 AM, Colorado Convention Center, 203
Chair: Ting Xu, University of California, Berkeley

8:00 AM N25.00001: Electromechanical imaging of structure and polarization dynamics in a macromolecular system on the nanoscale
Invited Speaker: Sergei Kalinin

Myung Chul Choi, Uri Raviv, Herbert Miller, Michelle Massie, Youli Li, Leslie Wilson, Stuart Feinstein, Mahn Won Kim, Cyrus Safinya

8:48 AM N25.00003: Time-resolved studies of actin organization by multivalent ions and actin-binding proteins
Ghee Hwee Lai, Kirstin Purdy, James R. Bartles, Gerard Chee Lai Wong

9:00 AM N25.00004: Elastic Behavior of Composite Actin and Microtubule Networks
Yi-Chia Lin, Gijije Koenderink, Frederick Mankin, David Weitz

9:12 AM N25.00005: Mechanics of actin networks crosslinked with mutant human α-actinin-4
Sabine Volkmer, Daniel Blair, Karen Kasza, David Weitz

9:24 AM N25.00006: Viscoelastic properties of Ionomer Melt
Monopy Goswami, Sanat Kumar

9:36 AM N25.00007: Controlling the Properties of Thermoreversible Protein Hydrogels
Hui Yan, Alberto Saiani, Aline Miller

9:48 AM N25.00008: Electrosprinning of Hyaluronic acid (HA) and HA/Gelatin Blends
Aihua He, Junxing Li, Charles Han, Dufei Fang, Benjamin Hsiao, Benjamin Chu

10:00 AM N25.00009: Rheology and lubricity of hyaluronic acid
Jing Liang, Wendy E. Krause

10:12 AM N25.00010: Physical Control of Stem Cells via Matrix Elasticity
Florian Rehfeldt, Dennis Discher

10:24 AM N25.00011: Elasticity of Short DNA Molecules: Quantitative Agreement Between Theory and Experiment
Yeonee Seol, Jinyu Li, Philip Nelson, Thomas Perkins, M. D. Betterton

10:36 AM N25.00012: Tube Radius in Entangled Networks of Semiflexible Polymers
Hauke Hinsch, Jan Wilhelm, Erwin Frey

10:48 AM N25.00013: Stretching and bending in cross-linked biopolymer networks
Claus Heussinger, Erwin Frey
**Session P24. Organic Heterojunction Photovoltaics (DPOLY/DMP)**
*Wednesday mid-day, 11:15 AM, Colorado Convention Center, 201*

**Chair:** Bernard Kippelen, Georgia Institute of Technology

*Invited Speaker: Jean-Luc Brédas*

11:51 AM  P24.00002: Predicting structure/property relations in polymeric photovoltaic devices  
*Gavin Buxton, Nigel Clarke*

12:03 PM  P24.00003: Synthesis and Application of Conducting Block Copolymers in Organic Photovoltaics  
*Bryan W. Boudouris, Marc A. Hillmyer, C. Daniel Frisbie*

12:15 PM  P24.00004: Fluorescence of Dendrons based on Donors and Acceptor with Different Linkages  
*J.H. Park, Y. Wu, D.A. Modarelli, J.R. Parquette, A.J. Epstein*

12:27 PM  P24.00005: The interplay of morphology and carrier recombination in dendrimer-based organic photovoltaics  
*Sean Shaheen, Nikos Kopidakis, William Mitchell, William Rance, Jao van de Lagemaat, Garry Rumbles*

*Alexandre Ndobe, Valy Vardeny*

12:51 PM  P24.00007: Nanocrystalline organic solar cells  
*Fan Yang, Kai Sun, Stephen Forrest*

1:03 PM  P24.00008: Fabrication and characterization of photovoltaic devices based on ‘self corralled’ CdSe nanorods functionalized with polythiophene  
*Suresh Gupta, Qingling Zhang, Ali Cirpan, Frank Karasz, Todd Emrick, Thomas P. Russell*

1:15 PM  P24.00009: Femtosecond transient studies of photoinduced charge transfer in polymers doped with strong acceptor molecules; applications for organic solar cells  
*Josh Holt, Tomer Dori, Chuanxiang Sheng, Z. Valy Vardeny*

1:27 PM  P24.00010: Photoinduced charge transfer from polymers to fullerene molecules revisited  
*Tomer Dori, Chuanxiang Sheng, Alex Ndobe, Cungeng Yang, Minghong Tong, Valy Vardeny*

1:39 PM  P24.00011: Nanoscale Composition and Efficiency of Conjugated Polymer Based Photovoltaic Devices  
*Benjamin Watts, Chris McNeill, Lars Thomesen, Warwick Belcher, Harald Ade, Neil Greenham, Paul Dastoor*

1:51 PM  P24.00012: Optimization of the Negative Electrode in Organic Photovoltaic Devices  
*Matthew Reese, Matthew White, Garry Rumbles, David Gintty, Sean Shaheen*

2:03 PM  P24.00013: Time-Resolved Microwave Photoconductivity study of the Photophysics of Bulk Heterojunction Organic Photovoltaic Devices  
*Nikos Kopidakis, Andrew Ferguson, Sean Shaheen, Garry Rumbles*

**Session P25. Dynamics and Structure in Polymer Melts and Glasses (DPOLY)**
*Wednesday mid-day, 11:15 AM, Colorado Convention Center, 203*

**Chair:** Ramanan Krishnamoorti, University of Houston

11:15 AM  P25.00001: Evolution of stress and entanglements during deformation of glassy polymers  
*Invited Speaker: Mark Robbins*

11:51 AM  P25.00002: Role of Fluctuations in Predicting the Glass Formation Line  
*Grigori Medvedev, James Caruthers*

12:03 PM  P25.00003: Entanglement Theories: Packing vs. Percolation  
*Richard Wool*

12:15 PM  P25.00004: Interdiffusion at Ring-Shaped Polystyrene / Its Deuterated Counterpart Bilayer Interfaces  
*Daisuke Kawaguchi, Atsushi Takano, Keiji Tanaka, Toshihiko Nagamura, Naoya Tonkai, Robert Dalgliesh, Yushu Matsushita*

12:27 PM  P25.00005: Monte Carlo Simulation of the Glass Transition in Polyethylene  
*Rajesh Khare, Orestis Alexiadis, Vlasis Mavrantzas, Job Beckers, Arlette Baljon*

12:39 PM  P25.00006: Glassy Dynamics and Pressure Effects in Polymer Melts  
*Erica J. Saltzman, Kenneth S. Schweizer*

12:51 PM  P25.00007: Anomalous Surface Dynamics Near T_g in Supported Polystyrene Films by XPCS  
*Zhang Jiang, Mrinmay Mukhopadhyay, Sunil Sinha, Sanghoon Song, Hyunjung Kim, Laurence Lurio*

1:03 PM  P25.00008: Theory of Segmental Relaxation and Physical Aging in Polymer Glasses  
*Kenneth Schweizer, Kang Chen*

1:15 PM  P25.00009: Power Law Behavior of Dynamics in Simple Glass Formers  
*John McCoy, Julieanne Heffernan, Joanne Budzien, Douglas Adolf*

1:27 PM  P25.00010: Cure of Bisphenol M Dicyanate Ester/Polycyanurate under Nanoscale Constraint  
*Qingxiu Li, Sindee Simon*

1:39 PM  P25.00011: Probing Chain Entanglement in Polymer Glasses in Sub-nano Level  
*Gi Xue, Xiaoliang Wang, Dongshan Zhou, Pinchuan Sun*

1:51 PM  P25.00012: Synchrotron X-ray scattering study of structure and dynamics of thin block copolymer films  
*Hyunjung Kim, Heeju Lee, Young Joo Lee, Sanghoon Song, Youngsuk Byun, Zhang Jiang, Sunil K. Sinha, Adrian Rühm, Suresh Narayanan*
Session R1. Poster Session II (DPOLY)
Wednesday mid-day, 11:15 AM, Colorado Convention Center, Exhibit Hall F

R1.00002: Computer Simulation Studies of Polyurethane Film Formation
Shihai Yang, Ras Pandey, Marek Urban

R1.00003: A ring graph method for approximating atomic short-range order in disordered multicomponent systems
Zhun-Yong Ong

R1.00004: Predicting Short-Range Order in Multicomponent Alloys from an Improved Mean-Field Theory
Zhun-Yong Ong, Duane Johnson

R1.00005: Brownian dynamics simulation of polymer chains incorporating bending and torsion potentials
Semant Jain, Ronald Larson

R1.00006: Density structure of polymers in the layered host system: the effect of the excluded volume
Alexander Chernyavoy, Gert Heinrich

R1.00007: Origin of Bends in Unperturbed Vinyl Polymers
Yergou Tatek, Wayne Mattice

R1.00008: Molecular dynamics simulations of Poly (Ethylene Oxide) and Poly (Propylene Oxide) Aqueous Solutions as a function of temperature
Oleg Starovoytov, Dmitry Bedrov, Oleg Borodin, Grant Smith

R1.00009: Effective molecular diffusion coefficient in a two-phase gel medium
Christine Kingsbury, Gary W. Slater

R1.00010: Surprising non-monotonic dependence of a polymer's diffusion coefficient on the degree of disorder of the medium
Owen Hickey, Gary Slater

R1.00011: Langevin dynamics simulations of PEO brushes in aqueous solutions
Fang Yin, Dmitry Bedrov, Grant Smith

R1.00012: Parallel simulation for block copolymer mesophases
Marco Pinna, Xiaoju Guo, Andrei Zvelindovsky

R1.00013: Microphase Separation Induced by Interfacial Segregation of Isotropic, Spherical Nanoparticles
Michael J. A. Hore, Mohamed Laradj

R1.00014: Multi-scale dynamical modes of a tethered membrane by Monte Carlo simulations
Ras Pandey, Kelly Anderson, Barry Farmer

R1.00015: Dynamics of a Charged, Semi-flexible Polymer with Hydrodynamic Interaction
Won Kyu Kim, Oyeon Kum, Wookyung Sung

R1.00016: Lamellar to inverted hexagonal phase transition in DNA complexes with calamitic, discotic, and cubic shaped catonic lipids
Lei Zhu, Li Cui

R1.00017: An investigation of the photovoltaic properties of poly-(3-alkylthiophene) fullerene bulk heterojunction solar cells
Anna A. Belak, Michael W. Rowell, Shawn R. Scully, Michael D. McGehee

R1.00018: Organic Thin Film Transistors with Gate Dielectrics via Sol-Gel Process
June Whan Choi, Sungwon Choi, Jae-Woong Yu, Ho Gyu Yoon, Jai-Kyegong Kim

R1.00019: Polarization-dependent Bragg gratings formed by shearing of polymer-dispersed liquid crystals in situ during holographic recording
Timothy Bunning, Vincent Tondiglia, Laligudla Nararajan, Richard Sutherland, Pamela Lloyd

R1.00020: On the nature of the olivopacene ground state
Johannes Hachmann, Jonathan Dorando, Michael Aviles, Garnet Kin-Lic Chan

R1.00021: Development of High Refractive Index Conjugated Materials
Matthew Graham, Shi Jin, Stephen Z. D. Cheng

R1.00022: Nanoscale Efficiency Maps for Organic Solar Cell Devices - Initial Results
Benjamint Watts, Andrew Minor, Francis Heilmann, Harald Ade

Tohru Araki, Benjamint Watts, Jan Lenxing, Harald Ade

R1.00024: Charge injection and transport in fluorene-based copolymers
Hon Hang Fong, George G. Malliaras, Tianjia Lu, David Dunlap

R1.00025: Exfoliation and intercalation in a layer of clay platelets: effects of solvent and temperature by a Monte Carlo simulation
Barry Farmer, Ras Pandey

R1.00026: Patterning of microgel particles on polymer surfaces controlled by autophobicity and interfacial tension
Arif Gozen, Bin Wei, Richard Spontak, Jan Genzer, Paul Gurr, David Solomon, Greg Qiao

R1.00027: Microgels: Structure, Dynamics, and Possible Applications
John McKenna, Kirit Streletzky

R1.00028: Confinement effects on the glass transition of the hydrogen bonded liquids
Wei Zheng, Sindee Simon

R1.00029: A New Pressurizable Dilatometer for Measuring the Time-Dependent Bulk Modulus of Polymers
Yan Meng, Paul O'Connell, Gregory McKenna, Sindee Simon

R1.00030: Polymeric Template Assisted Formation of Gradient Concentric Metal and Metal Oxide Rings
Suck Won Hong, Zhiqun Lin

R1.00031: The Shear Response and Structure in Polycyanurate Networks
Qingxiu Li, Sindee Simon

R1.00032: A New Bio-based Dielectric Material
Mingjiang Zhan, Richard P. Wool

R1.00033: Electrical Bending and Mechanical Buckling Instabilities in Electrospinning Jets
Tao Han, Darrell H. Reneker

R1.00034: Polymer Micro-scrolls
Kyrnaki Kalaitzidou, Alfred J. Crosby

R1.00035: The Elastic Constants and Related Mechanical Properties of the Monoclinic Polymorph of the Carbamazepine Molecular Crystal
Himansu Mohapatra, Craig J. Eckhardt
R1.00036: Organic Light Emitting Diodes with Opal Photonic Crystal Layer and Carbon Nanotube Anode
Raquel Ovalle Robles, Maria del Rocio Nava, Christopher Williams, Mei Zhang, Shaoli Fang, Sergey Lee, Ray Baughman, Anvar Zakhidov

R1.00037: Flexible OLED with Transparent Multiscale Carbon Nanotubes Electrodes
Raquel Ovalle Robles, Christopher Williams, Mei Zhang, Shaoli Fang, Sergey Lee, John Ferraris, Ray Baughman, Anvar Zakhidov

R1.00038: Controlling solidification and fiber diameter of Polyethylene oxide nanofibers electrospun from aqueous solution by controlling the partial pressure of water vapor
Sureeporn Tripatanausawan, Zhenxin Zhong, Darrell Reneker

R1.00039: Nanoparticles induce raft formation in phospholipid liposomes
Bo Wang, Liangfang Zhang, Steve Granick

R1.00040: 2-D Hierarchical Structure of a Block Copolymer and Bio-nanoparticle Composites
Dongseok Shin, Yao Lin, Qian Wang, Thomas Russell

R1.00041: Block Copolymer for Patternning Bio-molecules
Dongseok Shin, Yao Lin, Michael Scholle, Lichai Chen, Brian Kay, Lee Makowski, Thomas Russell

R1.00042: Block Copolymer Films for Organizing Charged Biopolymers
Jung Hyun Park, Yujie Sun, Yale Goldman, Russell Composto

R1.00043: Evolution of the Elastic Modulus and Hardness of Benzocyclobutene During the Curing Process
Michael Grzesik, Shivashankar Vangala, William Goodhue, Walter Buchwald

R1.00044: Hybrid Nanomaterials: One Dimensional Nanoparticle Assemblies
Nikhil Sharma, Darrin Pochan

R1.00045: Bicontinuous Mesosstructured Inorganic Films from Gold Nanoparticle Induced Phase Transitions in Self-Assembled Polystyrene-b-poly(2-vinylpyridine) Diblock-Copolymer Templates
Joshua Petrie, Bumjoon Kim, Glenn Fredrickson, Craig Hawker, Ed Kramer

R1.00046: Carbon Nanotubes for Polymer Photovoltaics
Annick Anctil, Roberta DiLeo, Chris Schauerman, Brian Landi, Ryne Raffaelle

R1.00047: Direct self-catalytic lateral grown NiSi nanowire bridge and their electrical transport
Yun-Hi Lee, Hyuk-Sang Kwon

R1.00048: Target Finding Mechanism of Microtubules in a Confined Geometry
Mitra Shojaian Feizabadi

R1.00049: There and (slowly) back again: Entropy-driven hysteresis in a model of DNA overstretching
Stephen Whitelam, Sander Pronk, Phillip Geissler

R1.00050: Molecular Dynamics Simulations of Nanopropulsion Engine
Jan-Michael Carrillo, Junhwan Jeon, Andrey Dobrynin

R1.00051: Electrostatic Analysis of The Nucleosome Stability
Andrew Fenley, David Adams, Alexey Onufriev

R1.00052: Development of a Constitutive Model for Shape-Memory Polymers Containing Reversible H-Bonding Associating Groups
Jiahui Li, James Viveros, Mitchell Anathamatten

R1.00053: Ultrafiltration of Polymeric Micelles through Nanopores
Liangzhi Hong, Chi Wu

R1.00054: Polymer moving through a small channel: A new Monte Carlo approach to study binding effects and chaperones-assisted
Michel Gauthier, Gary W. Slater

R1.00056: Effect of Cross-linking History on Slow Shape Recovery of Disordered Nematic Elastomers
Kenji Uratama, Seiji Honda, Toshikazu Takiwaga

R1.00057: Effect of Length on the Diffusion of Rodlike Polymers at Concentrations Spanning the Isotropic-Liquid Crystal Transition
Paul Russo, Garrett Doucet

R1.00058: Control of three dimensional alignment in liquid crystalline polymer by magnetic field
Toshiaki Ougizawa, Jun Takeda, Keiichi Kuboyma, Tetsuya Uesaka, Takehiro Toyooka

R1.00059: Isoconversion Analysis of the Glass Transition
Prashanth Badrarayan, Wei Zheng, Sindie Simon

R1.00060: Entanglement in Fullerene End-Capped Linear Polymers
Xiaorang Wang, Yuan-Yong Yan

R1.00061: Precise Characterization of Cyclization Reaction Product Obtained from A Telechelic Polystyrene by HPLC
Ato Taka, Yuuki Kushida, Yutaka Ohta, Donghyun Cho, Yushu Matsuishi

R1.00062: PEO Chain Dynamics in PEO/PMMA Blends
Sahban Ozair, Itan Zeroni, Timothy Lodge

R1.00063: Photochemical Crosslinking of Macro molecules in Solution with a Benzophenone Derivative
Nicholas Carbone, Gregory Carroll, Nicholas Turro, Jeffrey Koberstein

R1.00064: Temperature Coefficients of Unperturbed Chain Dimensions for Flexible Polymers
Masashi Osa, Hidetugu Kanda, Takesao Yoshizaki, Hiromi Yamakawa

R1.00065: Microstructural organization of polydimethylsiloxane based polyurethane block copolymers
Rebeca Hernandez, Jadwiga Weksler, Ajay Padsalgikar, James Runt

R1.00066: Dynamics of self-oscillating polymer gels under boundary constraints
Victor Yashin, Anna Balazs

R1.00067: The Rheological Behavior of Natural Rubber Modified by Admicellar Polymerization Technique of Styrene
Saman Isahoh, Rathananaw Magaraphan

R1.00068: Synthesis and Characterization of Polyvyrrole Coated Latex Particles by Admicellar Polymerization
Sirinya Chantarak, Rathananaw Magaraphan
R1.00069: Reversible Self-Assembly of Hydrophilic Inorganic Polyelectrolytes into Highly Conservative, Vesicle-like Structures
Melissa Kistler, Anish Bhatt, Guang Liu, Tianbo Liu
R1.00070: Polyelectrolyte Adsorption and Multilayer Formation: Effects of Fluctuation and pH
Qiang Wang, Ying Jiang
R1.00071: Stimuli-Responsive Surfaces from Two-Component Polymer Brushes
Ying Jiang, Dong Meng, Qiang Wang
R1.00072: Electrostatic force microscopy of DNA under controlled humidity
Guoqiang Xia, Nina Markovic
R1.00073: Small Angle Neutron Scattering of Mixtures of Linear and Network Polyelectrolytes with an Oppositely Charged Surfactant
Worjoo Lee, Peter Kofinas, Robert M. Briber
R1.00074: Morphology and Rheology of Poly(styrene-co-methacrylic acid) Ionomers: Effect of Acid Content, Degree of Neutralization and Cation Type
Wenqin Wang, Tsung-Ta Chan, Karen I. Winey
R1.00075: Photopolymerization Induced Directional Crystal Growth in Polymer and Photo Reactive Mixtures
Soo Jeoung Park, Thein Kyu
R1.00076: Phase Behavior and Polymerization-Induced Phase Transition of Liquid Crystal Mixtures
Nam Il Kim, Thein Kyu
R1.00077: Rheology-morphology relationships in polytrimethylene terephthalate/liquid crystalline polymer blends
Penwisa Pisitsak, Rathana near Magaraphan
R1.00078: Molecular Interpretation of Polymer-Polymer Adhesion
Suriyakala Ramalingam, Guolin Wu, Shaw L Hsu
R1.00079: Effects of Composition and Crystallinity on the Mechanical Properties of Reactive Ternary Blends
Xiguo Zeng, Jayaraman Krishnamoorthy, Shaw L. Hsu, Charles W. Paul, Brigitte Wan
R1.00080: Statistical Mechanical Theory of Effective Interactions, Structure and Phase Behavior of Polymer Nanocomposites
Lisa Hall, K.S. Schweizer
R1.00081: Dielectric and Mechanical Relaxation Behavior of PVDF/OMS Nanocomposites
Lei Yu, B. Seyhan Ince-Gunduz, Peggy Cobe
R1.00082: Thermal and Rheological Properties of Polypropylene/Organoclay/Poly(ethylene-co-ox-ocene) Nanocomposites
Tongchen Sun, Xia Dong, Kai Du, Kun Meng, Charles C. Han, Ke Wang, Qiang Fu
R1.00083: Carbon Microtubes from Chicken Feathers
Melissa M. Miller, Richard P. Woot
R1.00084: Strain Sensitive Photonic Natural Rubber
Ketsuda Anuchai, Christoph Weder, Rathanan Magaraphan
R1.00085: Organobentonite / Polypolypele Nanocomposite for Packaging Application
Yukhantorn Varothai, Athinuch Phandee, Manq Nithitanakul, Rathanan Magaraphan, Hathairom Banusipa

R1.00086: PP/Clay Nanocomposites as Smart Packaging for Evaluating Milk Spoilage
Sakkarin Tassanawat, Manq Nithitanakul, Rathanan Magaraphan, Hathairom Banusipa
R1.00087: Polypropylene Nanocomposites from Porous Clay Materials: Application in Ethylene Scavenger Packaging Films
Kasnee Prakobna, Rathanan Magaraphan, Hathairom Banusipa
R1.00088: 0-3 Connectivity of PVDF/BST Piezoelectric Composites
Kittikun Kohpaiboony, Hathairom Banusipa
R1.00089: Polymer composites of aligned carbon nanotubes
R1.00090: The Effect of Dielectric Constant on Polyelectrolyte Brushes Grafted to a Spherical Substrate
Daniel Sandberg, Thomas Seery, Andrew Dobryni
R1.00091: Electrical Conductivity in Polymer Nanocomposites with Heterogeneous Spatial Distributions of Nanotubes
Minfah Mu, Thomas J. Acchione, Jena Deng, Henry Friedman, Karen I. Winey
R1.00092: Novel Nanostructures Created by Supercritical Fluid Processing of Polymers
Rahmi Ozisik, Kumin Yang, Yong Liu
R1.00093: Preparation, Structure and Properties of Carbon Nanotube Polymer Composites
Yayong Liu, Howard Wang, Kaikun Yang, Zhong Xu, Narayan Das, Kunlun Hong, Gyula Eres, David Uhrig
R1.00094: Dispersion of Carbon Nanotubes in Polymer Matrices using Trifluoroacetic Acid as a Co-solvent
Paul Stokes, Harish Mutharaman, Hui Chen, Qun Huo, Saiful Khondaker
R1.00095: Pigment dispersion And Optical property of a TiO2 pigmented epoxy coating
Haiqing Hu, Lipin Sung, Xiaohong Gu, Cyril Clerici, Derek Ho
R1.00096: Development of Polythiopehene/Acrylonitrile-Butadiene Rubbers for Artificial Muscle Pacharavalee Chipdech, Anuvat Sirivat
R1.00097: Creep and Recovery Behaviors of Polyaniiline/Silicone Oil Suspensions under Electric Field
Piyanoth Hiamtup, Anuvat Sirivat
R1.00098: Preparation and Characterization of PPy/PVA blend films
Kanokporn Juntanom, Anuvat Sirivat
R1.00099: The electro-responsive drug delivery from salicylic acid -loaded polyacrylamide hydrogels
Sumonman Niamlang, Anuvat Sirivat
R1.00100: Fabrication of Poly(p-phenylene)Zeolite Composite as a Gas Sensor Material
Pimchanok Phumman, Anuvat Sirivat
R1.00101: Fabrication of Conducting Polymer Nanowires using Blockcopolymer Nano-Porous Templates
Jeong In Lee, Phillip Anthony, Jin Kon Kim, Jae Woong Ryu
R1.00102: Polymer actuators from first principles
Nicholas Singh-Miller, Damian Scherlis, Nicola Marzari
R1.00103: Effect of Temperature on the Electromechanical Properties of Elastomers
Raksapong Kunanuruksapong

R1.00104: Theoretical study of sulfur overlayers on transition metal surfaces
Dominic Alfonso

R1.00105: Adsorption kinetics of random copolymers with tunable monomer sequences onto flat surfaces
Young Jhon, James Semler, Igal Szleifer, Jan Genzer

R1.00106: UVO Tunable Superhydrophobic to Superhydrophilic Wetting Transition on Biomimetic Nanostructured Surfaces
Alamgir Karim, Joong Tark Han, Sangcheol Kim

R1.00107: In silico polymerization: Computer simulation of controlled radical polymerization in bulk and on surfaces
Jan Genzer

R1.00108: Shear stress measurements on InAs nanowires by AFM manipulation
Hakan Pettersson, M. Bordag, A. Ribayrol, G. Conanche, L.E. Fröberg, L. Samuelson, L. Montelius

R1.00109: PS/PMMA Blends in the Presence of Cyclohexane: Selective Solvent Washing or Equilibrium Adsorption?
Harald Ade, S. E. Harton, J. Luning, H. Betz

R1.00110: Homogeneous Crystal Nucleation: To Fold or Not to Fold?
Buckley Crist

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Session S17. Modeling of Polymers: Blocks, Networks and Solutions (DPOLY/DCOMP)
Wednesday afternoon, 2:30 PM, Colorado Convention Center, 102
Chair: Venkat Ganesan, University of Texas at Austin

2:30 PM S17.00001: Single-Chain in Mean-Field simulations for Block Copolymer/Nanoparticle Composites
Francois Detcheverry, Yioryos Papakonstantopoulos, Huiman Kang, Paul Nealey, Juan De Pablo, Costas Daoulas, Marcus Mueller

2:42 PM S17.00002: Multiscale Simulations of Pluronic Micelles
Grant Smith, Dmitry Bedrov

2:54 PM S17.00003: Spinodal Decomposition of Polydisperse ABA Triblock Copolymers Determined from the Random Phase Approximation
T.W. Capehart, Armand Soldera

3:06 PM S17.00004: Architecture phase diagram for branched block copolymers
Scott Sides, Bobby Sumpter

3:18 PM S17.00005: Theoretical Investigation of Hydrogen Bonding Networks in Cellulose α and β
Xianghong Qian

3:30 PM S17.00006: Percolation and Diffusivity of Ideal Polymer Networks
Yong Wu, Beate Schmittmann, Royce Zia

3:42 PM S17.00007: Random Networks of Semiflexible Polymers
Panayotis Benetatos, Annette Zippelius

3:54 PM S17.00008: Collapse transition of a chain in the bulk and next to adsorbing surfaces
I.A. Bitsanis, A.N. Rissanou, S.H. Anastasiadis

4:06 PM S17.00009: Polymer relaxation in flow: dynamical slowdown around the coil-stretch transition
D. Vincenzi, E. Bodenschatz, A. Puliafito, A. Celani

4:18 PM S17.00010: Solvation potentials for polymer chains in solution
Mark Taylor

4:30 PM S17.00011: Model-specific features of random walk polymers beyond the mean field limit
Kirill Titievsky

4:42 PM S17.00012: Amorphous and crystalline states of ultrasoft colloids: A Molecular Dynamics study
A.N. Rissanou, M. Yiannourakou, I.G. Economou, D. Vlassopoulos, I.A. Bitsanis

4:54 PM S17.00013: Polymer Statics and Dynamics Under Box Confinement
Joshua Kalb, Bulbul Chakraborty

5:06 PM S17.00014: Polymer Translocation in Crowded Environments
Ajay Gopinathan, Yong Woon Kim

5:18 PM S17.00015: Models of polymers subject to a force
Gerasim Iliev
Session S18. Semi-Crystalline Polymers (D POLY)
Wednesday afternoon, 2:30 PM, Colorado Convention Center, 103
Chair: Vahik Krikorian, Massachusetts Institute of Technology

2:30 PM S18.00001: Tuning Surface and Interface Properties Through Crystal Engineering
Stephen Z. D. Cheng, Ryan Van Horn, Wenbin Zhang

2:42 PM S18.00002: Temperature Effects on Interlamellar Chain Entanglement and Structural Changes in Isotactic Polypropylene during Uniaxial Tensile Deformation
Benjamin Hsiao, Feng Zuo, Jongkahk Keum, Xuming Chen, Hongyu Chen, Jing Li

2:54 PM S18.00003: Influence of Stereoregularity Defects on the Crystallization of Isotactic Polypropylene
Xiaofeng Chen, Rahmi Ozisik, Sanat K. Kumar, Phillip Choi, Wayne L. Mattice

3:06 PM S18.00004: Polymer crystallization enabled carbon nanotube functionalization
Christopher Li, Lingyu Li, Bing Li, Cristin Yavorsky

3:18 PM S18.00005: A Second Harmonic Generation Study of Polyethylene Crystalization
Howard Wang, Narayan Ch Das, Hongtao Bian, Yuan Guo, Hongfei Wang

3:30 PM S18.00006: Spectroscopically Deciphering the Difference in Stabilizing Interactions of Poly(lactic acid) Polymorphs
Kaoru Aou, Xiguo Zeng, Shaw Ling Hsu

3:42 PM S18.00007: Effects of Confinement on the Crystallization of Perfectly Linear Polyethylene
Sasha Myers, Richard Register

3:54 PM S18.00008: AFM Study of the Beta to Alpha Transition in Isotactic Polypropylene
Jerold Schultz, Huihui Li, Xiaoli Sun, Shouke Yan

4:06 PM S18.00009: An investigation of the effect of processing conditions on the lamellar and spherulitic morphology of polyhydroxyalkanoates
Yuping Xie, Yvonne A. Akpalu

4:18 PM S18.00010: Confinement effects in polymer crystal nucleation from the bulk to "few-chain" systems
Vikram K. Kuppa, Gregory C. Rutledge

4:42 PM S18.00012: Tailor-Made Onion-Like Stereocomplex Crystals in Incompatible Enantiomeric Polvlactide Containing Block Copolymer Blends
Lei Zhu, Lu Sun, Liax Rong, Benjamin Hsiao

5:06 PM S18.00013: Crystallization of linear polyethylene in nanoporous cylindrical pores
Kyu Soo Shin, Eun Tae Woo, June Huh, Young-Gyu Jeong

5:18 PM S18.00015: Effect of OMS on Crystal Phases of PVDF Crystallized From the Melt

Session S24. Interaction of Polymers with Biological Structures (D POLY/DBP)
Wednesday afternoon, 2:30 PM, Colorado Convention Center, 201
Chair: R. Kannan, Wayne State University

2:30 PM S24.00001: Theoretical and Numerical Modeling of faceted Ionic crystalline vesicles
Invited Speaker: Monica Olvera de la Cruz

2:30 PM S24.00002: Microchannels with adhesive posts trap cells with specific mechanical properties
Guangdong Zhu, Alexander Alexeiev, Anna Balazs

3:06 PM S24.00003: Biomimetic Micellar Networks
John Zupancich, Marc Hillmyer, Frank Bates

3:30 PM S24.00004: Post-Functionalized Polymer Brushes for Bio-Separation: Tuning GFP Adsorption via Functional Group Display
Steve Diamanti, Shi亞Anfuzzaman, Jan Genzer, Rajesh Naik, Richard Vaia

4:06 PM S24.00005: Structure and dynamics of water near the interface with oligo(ethylene oxide) self-assembled monolayers
Ahmed E. Ismail, Gary S. Great, Mark J. Stevens

4:30 PM S24.00006: Development of novel antibiofouling materials from natural phenol compounds
Rahul Chelikani, Dong Shik Kim

4:18 PM S24.00007: Conformation Distributions in Adsorbed Proteins
Curtis W. Meuse, Joseph B. Hubbard, John S. Vrettos, Jackson R. Smith, Marcus T. Cicerone

4:18 PM S24.00008: Mesophase Separation and Probe Dynamics in Protein-Polyelectrolyte Coacervates
A. Basak Kayitmazer, H. B. Bohidar, K.W. Mattison, A. Bose, P.S. Russo, P.L. Dubin

4:30 PM S24.00009: Strain-stiffening response in organogels assembled using steroidal biomolecules
Shih-Huang Tung, Sriravisra R. Raghavan

5:06 PM S24.00010: Solvent Viscosity at the Protein Surface
Sheila Khodadadi, Marian Paluch, Sebastian Pawlus, Yoshihito Hayashi, Alexei Sokolov

5:06 PM S24.00011: Correlation of chitosan’s rheological properties to its ability to electrospin
Wendy E. Krause, Hailey A. Queen, Rebecca R. Kissner, Andrew J. Coughlin

5:18 PM S24.00013: Effect of copolymer microstructure on single chain collapse
AshokDasmahapatra, Guruswamy Kumarswamy, Hemant Nanavati
Session S25. Block Copolymer Thin Films (DPOLY)
Wednesday afternoon, 2:30 PM, Colorado Convention Center, 203
Chair: Thomas H. Epps, University of Delaware

2:30 PM S25.00001: Surfactant Assisted Orientation of PS-b-PMMA Block Copolymer Thin Films
Jeong Gon Son, Xavier Bulliard, Huiman Kang, Paul F. Nealey, Kookheon Char

2:42 PM S25.00002: Controlled Alignment of Lamellar Phase in Thin Films of a Block Copolymer and a Silica Precursor Mixture

2:54 PM S25.00003: Defect structures in block copolymer thin films epitaxially assembled on chemically nanopatterned surfaces
Sang Ouk Kim, Bong Hoong Kim, Kwanghyon Kim, Mark Stoykovich, Paul Nealey, Harun Solak

3:06 PM S25.00004: Graphoepitaxy of diblock-copolymers microdomains with chemical patterns
Antonio Checco, Benjamin M. Ocko, Matthew Misner, Ji Xu, Thomas P. Russell

3:18 PM S25.00005: The Alignment of Ion-Complexed Symmetric Diblock Copolymer Thin Films under an Electric Field
Jia-Yu Wang, Ting Xu, Julie Leiston-Belanger, Suresh Gupta, James Sievert, Thomas Russell

3:30 PM S25.00006: Shear-induced Long Range Order in Diblock Copolymer Thin Films
Xuan Ding, Thomas Russell

3:42 PM S25.00007: Control of Ordering Kinetics and Morphology using Zone Annealing of Thin Block Copolymer Films
Alamgir Karim, Brian Berry, Ronald Jones

3:54 PM S25.00008: Orientation of Microdomains of Block Copolymers by Zone casting
Chuanbing Tang, Krzysztof Matyjaszewski, Tomasz Kowalewski

4:06 PM S25.00009: The Effect of Humidity on the Ordering of Triblock Copolymer Thin Films
Joona Bang, Bumjoon J. Kim, Gila E. Stein, Edward J. Kramer, Craig J. Hawker, Thomas P. Russell

4:18 PM S25.00010: Directing the Assembly of Patterns with Complex Geometries using Block Copolymers and Chemically Nanopatterned Substrates
SangMin Park, Prabu Ravindran, Young-Hyeok La, Nicola Ferrier, Paul Nealey

4:30 PM S25.00011: Order and disorder in cylindrical block copolymers on a surface with positive and negative Gaussian curvature
A. Hexemer, E. J. Kramer, V. Vitelli, C. D. Santangelo, R. D. Kamien

4:42 PM S25.00012: Rod-Coil Block Copolymer Self-Assembly in Thin Films
B.D. Olsen, X. Li, J. Wang, R.A. Segalman

4:54 PM S25.00013: Self-consistent field theory simulations of block copolymer assembly on a sphere

5:06 PM S25.00014: Freestanding nanowire arrays from soft-etch block copolymer templates
E. Crossland, S. Ludwigs, M. Hillmyer, U. Steiner

5:18 PM S25.00015: Investigation of polystyrene-b-polyferrocenyl silane diblock copolymer thin films via conducting probe atomic force microscopy
James Li, Shan Zou, David Rider, Ian Manners, Gilbert Walker

5:30 PM S25.00016: Directed Assembly of Block Copolymers to Pattern Isolated Features and Essential Integrated Circuit Geometries
M. P. Stoykovich, H. Kang, G. Liu, K. Ch. Daoulas, J. J. de Pablo, M. Mueller, P. F. Nealey

5:42 PM S25.00017: Reversible reordering of a sphere-forming diblock at the substrate interface: surface directed sphere to lamellar transition
Jessica L. Carvalho, Michael V. Massa, Kari Dalnoki-Veress

5:54 PM S25.00018: Lamellar nanostructures of diblock copolymers confined in submicro-patterns
Sehee Kim, Kookheon Char, Byeong-Hyeok Sohn
Session U4. Interfaces between Synthetic and Biological Polymers (DPOLY/DBP)
Thursday morning, 8:00 AM, Colorado Convention Center, Korbel 2B-3B
Chair: Christine Ortiz, Massachusetts Institute of Technology
8:00 AM U4.00001: Design Rules for Thermally Responsive Polymer Brushes
*Invited Speaker: Deborah Leckband*
8:36 AM U4.00002: Studying Polymer Transport on Soft and Hard Surfaces
*Invited Speaker: Sanat Kumar*
9:12 AM U4.00003: Design of dendrimer-based drug delivery nanodevices with enhanced therapeutic efficacies
*Invited Speaker: Rangaramanujam Kannan*
9:48 AM U4.00004: Ligand-receptor binding in the presence of polymeric spacers
*Invited Speaker: Igal Szleifer*
10:24 AM U4.00005: Using Liquid Crystallinity to Design Interfaces between Synthetic and Biological Materials
*Invited Speaker: Nicholas Abbott*

Session U17. Polymer Surfaces (DPOLY)
Thursday morning, 8:00 AM, Colorado Convention Center, 102
Chair: Vivek Prabhu, National Institute of Standards and Technology
8:00 AM U17.00001: Forces between polyelectrolyte brushes in various ionic environments
Matthew Tirrell
8:12 AM U17.00002: Evolution of Polymer Brush Dynamics by X-ray Photon Correlation Spectroscopy
Pinar Akcora, Suresh Narayanan, Pappannan Thiyagarajan, Linda Schadler, Sanat Kumar
8:24 AM U17.00003: Nanoparticle decoration overlayer for producing a surface enhanced Raman scattering spectrum of a pre-existing polymer surface
Bettina Roan, Thomas Furtak
8:36 AM U17.00004: Dewetting of a Polymer Melt on a Chemically Identical Brush
Ophelia Tsui, Xueyun Zhang
8:48 AM U17.00005: Probing Molecular Mobility at the PNIPAM Brush Surface
Jiang Zhao, Wei Wang, Shengqin Wang
9:00 AM U17.00006: Influence of entropic configurational effects on the surface tension of symmetric star polymers
Zhenyu Qian, Venkatachala Minnikanti, Lynden Archer, Bryan Bauer
9:12 AM U17.00007: Contact Properties of Surface Modified Elastomeric Membranes and the Recognition of Specific Interactions
David A. Brass, Kenneth R. Shull
9:24 AM U17.00008: Photoresponsive Polymer Surfaces
Spiros H. Anastasiadis, M.I. Lygeraki, K. Lakiotaki, M. Varda, A. Athanassiou, M. Farsari, C. Fotakis
9:36 AM U17.00009: Learning from the Venus Flytrap: A Biomimetic Responsive Interface
Douglas P. Holmes, Alfred J. Crosby
9:48 AM U17.00010: "Smart" Surfaces of Diblock Copolymer Brushes
Dong Meng, Qiang Wang
10:00 AM U17.00011: Polymers containing azobenzene as photo-mechanical materials
Christopher Barrett
10:12 AM U17.00012: Light-directed Control of Macromolecule Organization on a Surface
Gregory Carroll, Jeffrey Koberstein, Nicholas Turro
10:24 AM U17.00013: High-speed, sub-15 nm feature size thermochemical nanolithography
Elisa Riedo, Robert Szoszkiewicz, Takashi Okada, Simon Jones, Tai-De Li, William King, Seth Marder
10:36 AM U17.00014: In-Plane Ordering in Diblock Copolymer Brushes
Bulent Akgun, Gokce Ugur, William J. Brittain, Mark D. Foster, Xuefa Li, Jin Wang
10:48 AM U17.00015: Anomalous Surface Segregation in Polymer Blends
Shishir Prasad, Laurie Hanne, Ali Oshoijwala
Session U24. Phase Transitions in Polymeric Systems I (DPOLY)
Thursday morning, 8:00 AM, Colorado Convention Center, 201
Chair: Alamgir Karim, National Institute of Standards and Technology

8:00 AM U24.00001: Influence of Phase Separation and Shear on the Crystallization of Polyolefin Blends
Invited Speaker: Charles C. Han

8:36 AM U24.00002: Formation of micelles in homopolymer-copolymer mixtures
Marcus Müller, Anna Cavallo, Kurt Binder

8:48 AM U24.00003: Enhancing the segregation strength of amphiphilic block copolymer melts using selectively associating homopolymers: Well ordered systems from inexpensive components
James Watkins, Vijay Tirumala, Alvin Romang, Eric Lin

9:00 AM U24.00004: Hexagonal Phases in Rod Coil Block Copolymers
Rachel Segalman, Bradley Olsen

9:12 AM U24.00005: Morphological Characteristics and Phase Behavior of Nanoparticle-Modified Block Copolymers
Michelle Bowman, Michael Rockstaller, Kim Rasmussen, Jon Samseth, Steven Smith, Russell Thompson, Richard Spontak

9:24 AM U24.00006: Structure and Phase Transition in Sulfonated Block Copolymer
Moon Jeong Park, Nitash Balsara

9:36 AM U24.00007: Symmetry Breaking in Block Copolymer Thin Films
Eric Cochran, Gila Stein, Kirill Katsov, Ed Kramer, Glenn Fredrickson

9:48 AM U24.00008: Dewetting and Phase Separation in Thin Film Polymer Blends
Nigel Clarke

10:00 AM U24.00009: Shear-Induced Phase Transitions in Ternary Polymer Blends
Venkat Ganesan, Bharad Narayanan

10:12 AM U24.0010: Formation of a superlattice in mixtures of block copolymer micelles
Sayeed Abbas, Timothy P. Lodge

10:24 AM U24.0011: Phase transitions in block copolymers induced by external fields
Marco Pinna, Andrei Zvelindovsky

10:36 AM U24.0012: Phase behavior and morphology of high hard block content polyurethanes
Alberto Saiani, Julia S. Higgins

10:48 AM U24.0013: Monte Carlo simulation of self-assembled polymer chains with inter-chain attractions
Xinjiang Lü, James Kindt

Session U25. Organic Field-Effect Transistors (DPOLY/DMP)
Thursday morning, 8:00 AM, Colorado Convention Center, 203
Chair: Lynn Loo, University of Texas at Austin

8:00 AM U25.00001: Intrinsic transport anisotropy in single-crystal FETs on new rubrene derivatives

8:12 AM U25.00002: RC Transmission Line Characterization of Organic Thin Film Transistors
Daniel Lenski, Adrian Southard, Michael S. Fuhrer

8:24 AM U25.00003: Eliminating gate bias stress effects in organic field-effect transistors
Wolfgang L. Kalb, Thomas Mathis, Simon Haas, Arno F. Stassen, Bertram Batlogg

8:36 AM U25.00004: Field dependent hole transport mobility studies on a select group of conjugated polymers
N. C. Heston, B. Wilson, E. M. Galand, D. B. Tanner, J. R. Reynolds

8:48 AM U25.00005: Electric Field Induced Conductivity of Disorder Driven Anderson Insulator
Vladimir Prigodin, Arthur Epstein

9:00 AM U25.00006: Device Model for Organic Semiconductor Light-Emitting Field-Effect Transistors
Darryl Smith, P. Paul Ruden

9:12 AM U25.00007: Electrostatic Injection of Very Large 2D Charge Carrier Densities to Obtain Metallic Conductivities in Organic Semiconductors
Matthew Panzer, C. Daniel Frisbie

9:24 AM U25.00008: Charge mobility of discotic mesophases of hexabenzocoronene derivatives: a multiscale quantum/classical study of the effects of side chain substitution
Denis Andrienko, Valentina Marcon, Kurt Kremer, James Kirkpatrick, Jenny Nelson

9:36 AM U25.00009: The electronic structure and charge carrier dynamics in organic molecular crystals
Na Sai, Zhigiang Li, Vitaly Podzorov, Michael Martin, Michael Gershenson, Dimitri Basov, Massimiliano Di Ventra

9:48 AM U25.00010: Analysis of the Injection Efficiency Saturation in Polyfluorene Copolymers
David Dunlap, Tianjian Lu, Hon Hang Fong, George Malliaras

10:00 AM U25.00011: High-resolution electrical characterization of polyaniline/p-type organic semiconductor interfaces in thin-film transistors
Kwang Seok Lee, Timothy J. Smith, Chris Zangmeister, Joung Eun Yoo, Keith J. Stevenson, Yueh-Lin (Lynn) Loo

10:12 AM U25.00012: Polymer LED interfaces studied with resonant soft x-ray reflectivity

Yu Chen, Masaya Nishioka, Allen Goldman, Yu Xia, Daniel Frisbie
Session V4.  Dynamics in Polymeric Systems (DPOLY)
Thursday mid-day, 11:15 AM, Colorado Convention Center, Korbel 2B-3B
Chair: Ophelia Tsui, Boston University

11:15 AM  V4.00001: Dynamics of polymer glasses under active deformation
           Invited Speaker: Mark Ediger
11:51 AM  V4.00002: Dynamics of Polymer Blends: Beyond Self-Concentration
           Invited Speaker: Tim Lodge
12:27 PM  V4.00003: Looking inside the tube: what molecular dynamics simulations are revealing about polymer entanglements
           Invited Speaker: Ron Larson
1:03 PM   V4.00004: Glass Transition Temperature Reductions in Freely-Standing Films of Different Polymers
           Invited Speaker: John Dutcher
1:39 PM   V4.00005: Dynamics in Confined Systems: Polymer Thin Films and Surfaces
           Invited Speaker: Gregory McKenna
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<th>Time</th>
<th>Presentationタイトル</th>
<th>Authors</th>
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<tr>
<td>11:27 AM</td>
<td>V17.00002: The chemical and structural properties of PECVD polymerized ferrocene deposited by the sublimation of the precursor material</td>
<td>Jesse Enlow, Hao Jiang, Someshwar Peri, Mark Foster, Timothy Bunning</td>
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<tr>
<td>11:39 AM</td>
<td>V17.00003: Selective dispersion of nanofillers in PET/PC blends</td>
<td>E. Manias, M.J. Heidecker</td>
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<tr>
<td>11:51 AM</td>
<td>V17.00004: The thermal properties and the microstructures of organic-inorganic nano-composite materials</td>
<td>KengChing Lin, Kuo-Hsin Chang, WeiFang Su</td>
</tr>
<tr>
<td>12:03 PM</td>
<td>V17.00005: Enhanced Oxygen Barrier and Interfacial Adhesion of Polystyrene/Clay Nanocomposites via Plasma Surface Modification</td>
<td>Patchara Tasanatanachai, Rathanawan Magaraphan</td>
</tr>
<tr>
<td>12:15 PM</td>
<td>V17.00006: Structure and Morphology of Polymer/Clay Nanocomposites formed by Chaotic Smart Blending</td>
<td>Dilru R. Ratnaweera, Dvora Perahia, Chaitra Mahesha, Dvid Zumbrunnen, Mark A. Kampf</td>
</tr>
<tr>
<td>12:27 PM</td>
<td>V17.00007: A Nanoparticle Self-Assembled Tactile Sensor with Sensitivity &amp; Resolution of Human Finger</td>
<td>Vivek Maheshwari, Chieu Nguyen, Ravi Saraf</td>
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<tr>
<td>12:39 PM</td>
<td>V17.00008: Novel Route to Nanoparticle Dispersion Using Supercritical Carbon Dioxide</td>
<td>Rahmi Ozisik, Kumin Yang</td>
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<tr>
<td>12:51 PM</td>
<td>V17.00009: Directing self-assembly of gold nanoparticles in diblock copolymer scaffold</td>
<td>Qifang Li, Jinbo He, Elizabeth Glogowski, Todd Emrick, Thomas Russell</td>
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<tr>
<td>1:03 PM</td>
<td>V17.00010: Simple Fabrication of Mesoporous Silica with Remarkable High Temperature Stability at Neutral pH and Ambient Conditions from TEOS</td>
<td>David Hess, Radha Vippagunta, James Watkins</td>
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<tr>
<td>1:15 PM</td>
<td>V17.00011: Hydrophilic Silica-Polypeptide Composite Particles</td>
<td>Erick Soto-Cantu, Paul Russo</td>
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<tr>
<td>1:27 PM</td>
<td>V17.00012: Polymer-Graphite Nanocomposites: Comparison to Clay- and Carbon Nanotube-Based Hybrids</td>
<td>Katsuyuki Wakabayashi, Kosmas Kasimatis, John M. Torkelson</td>
</tr>
<tr>
<td>1:39 PM</td>
<td>V17.00013: Organic-Inorganic Photovoltaic Composite Materials Based on Polymer-Functionalized Semiconductor Nanorods</td>
<td>Qingling Zhang, Suresh Gupta, Todd Emrick, Thomas Russell</td>
</tr>
<tr>
<td>1:51 PM</td>
<td>V17.00014: Controlled Clustering of Oxide Nanoparticles using Block Copolymers for Coating and Biomedical Applications</td>
<td>Jean-Francois Berret</td>
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</tbody>
</table>
Session V24. Phase Transitions in Polymeric Systems II (DPOLY)
Thursday mid-day, 11:15 AM, Colorado Convention Center, 201
Chair: Kristopher Lavery, National Institute of Standards and Technology

Invited Speaker: Dujin Wang

11:51 AM V24.00002: Supercritical Fluid-Assisted Electrospinning of Polymers
Mark McGough, Manuel Marquez, Zhihao Shen, Jun Liu, Sanho Lee

12:03 PM V24.00003: Origin of the Difference in Order-Disorder Transition Temperature Between Polystyrene-block-Poly(2-vinylpyridine) and Polystyrene-block-Poly(4-vinylpyridine) Copolymers
Jin Kon Kim, Dong Hyun Lee, Sung Hyun Han, Weibin Zha, Chang Dae Han, Jin Ho Kang, Cheol Park

12:15 PM V24.00004: Structure and dynamics of a microphase separating block copolymer melt
Amish Patel, Nitash Balsara, Suresh Narayanan, Alec Sandy, Simon Mochrie

12:27 PM V24.00005: Pressure Dependence of Block Copolymer Phase Transition in Selective Solvent
Yongsheng Liu, Rama Bansil, Milos Steinhardt

12:39 PM V24.00006: Nanoporous Materials Formed in Condensed Carbon Dioxide
William Edmonds, Timothy Lodge, Marc Hillmyer

12:51 PM V24.00007: Morphological transformation and mesostructure formation in diblock copolymer blends
Kishore Tenneti, Xiaofang Chen, Christopher Li, Lixia Rong, Benjamin Hsiao

1:03 PM V24.00008: Salt Complexation in Cleaveable Polystyrene-b-poly(ethylene oxide) Thin Films
Ling Yang, Mingfu Zhang, Serkan Yurt, Matthew Misner, E. Bryan Coughlin, D. Venkataraman, Thomas Russell, Benjamin Ocko, Xuefa Li

Seung Ha Kim, Eric Cochran

1:27 PM V24.00010: Effect of solvent vapor type on evolution of thin film morphology of block copolymer-nanoparticle composites
Deepali Palta, David Bucknall

1:39 PM V24.00011: An SCFT Study of Nanostructuring in Epoxy Thermosets
Fulusho Oyerokun, Glenn Fredrickson, Ludwik Leibler

1:51 PM V24.00012: Fluctuation effects and stability of the Fddd phase in diblock copolymers
Bing Miao, Robert Wickham

Session V25. Organic Based Magnetism and Organic Spintronics (DPOLY/DMP)
Thursday mid-day, 11:15 AM, Colorado Convention Center, 203
Chair: Bin Hu, University of Tennessee

11:15 AM V25.00001: Spin Response in Organic Spin-Valves based on LSMO Electrodes
Fujian Wang, Cungeng Yang, Z. Valy Vardeny, Xiaoguang Li

Yaohua Liu, Taegweon Lee, Howard E. Katz, Daniel H. Reich

J. Sheung, M. Teague, C.R. Hughes, S. Mitrovic, N.-C. Yeh

11:51 AM V25.00004: Dipolar-Biased Tunneling of Magnetization in Crystals of Single Molecule Magnets
Invited Speaker: Kunio Awaga

12:27 PM V25.00005: Regioregular polythiophene based spintronic devices: effect of interface
Ronald Osterbacka, Sayani Majumdar, Himadi Majumdar, Reino Laiho, Pekka Laukkanen, Juhani Vayrynen

12:39 PM V25.00006: Ferrimagnetic resonance study on photo-induced magnetism in hybrid magnetic semiconductor V(TCNE)x, x≈2 film
Jung-Woo Yoo, R. Shima Edelstein, D. M. Lincoln, A. J. Epstein

12:51 PM V25.00007: On the Mechanism Causing Large Room-Temperature Magnetoresistance in OLEDs

1:03 PM V25.00008: Molecular Beam Epitaxy Growth of Organic Spin Valves
K. Pi, W. Wang, R. Thamankar, Y. Chye, Y. F. Chiang, Y. Li, R. K. Kawakami

1:15 PM V25.00009: Boosting quantum efficiency of single layer organic light emitting device by doping CoFe magnetic nanoparticles
Chengjun Sun, Yue Wu, Zhihua Xu, Bin Hu, Jian-Ping Wang, Jian Shen

1:27 PM V25.00010: Spin dynamics of photoexcited polarons in MEH-PPV: optically detected magnetic resonance studies
Cungeng Yang, Zeev Vardeny, Eitan Ehrenfreund

1:39 PM V25.00011: Role of triplet polaron pairs in conjugated polymer photophysics
Elizabeth Wesely, Lewis Rothberg, Alfred Marchetti, Shaw Chen, Yanhou Geng, Sean Culligan

1:51 PM V25.00012: Efficient plastic scintillators utilizing phosphorescent dopants
Ian Campbell, Brian Crone
Session W4. Computational Challenges in Simulations of Macromolecular Assemblies (DPOLY/DCOMP)
Thursday afternoon, 2:30 PM, Colorado Convention Center, Korbel 2B-3B
Chair: Grant Smith, University of Utah

2:30 PM  W4.00001: Confined Self-Assembly of Block Copolymers
           Invited Speaker: An-Chang Shi

3:06 PM  W4.00002: Simulation of driven self assembly of complex polymeric systems across multiple length scales
           Invited Speaker: Juan de Pablo

3:42 PM  W4.00003: Chemistry Unified Language Interface: a Novel Toolkit for Hybrid Macromolecular Models
           Invited Speaker: Hans Fraaije

4:18 PM  W4.00004: Modeling Microcapsule-Substrate Interactions: Repairing Damaged Surfaces and Separating Damaged Cells
           Invited Speaker: Anna Balazs

4:54 PM  W4.00005: Non-equilibrium dynamics at polymer surfaces and interfaces
           Invited Speaker: Dilip Gersappe

Session W17. Dynamics and Glass Transition Phenomena in Thin Polymer Films (DPOLY)
Thursday afternoon, 2:30 PM, Colorado Convention Center, 102
Chair: Christopher Stafford, National Institute of Standards and Technology

2:30 PM  W17.00001: Effect of Confinement on the Relaxation Dynamics in an Antiplasticized Polymer Melt
           Robert Riggleman, Juan de Pablo

2:42 PM  W17.00002: Kinetically Constrained Models of Thin Film Glassy Systems
           Madhav Mannava, Sanat Kumar

2:54 PM  W17.00003: A New Look at Polymer Films and the Glass Transition
           Jane Lipson, Scott Milner

3:06 PM  W17.00004: The Glass Transition of Miscible Binary Polymer-Polymer Thin Films
           Peter Green, Brian Besancon, Christopher Soles

3:18 PM  W17.00005: Molecular-dynamics simulations of thin films with a free surface
           Simone Peter, Hendrik Meyer, Joerg Baschnagel

3:30 PM  W17.00006: Dewetting of Thin Polymer Films
           Elie Raphael, Thomas Virnun

3:42 PM  W17.00007: Hole growth in free-standing block copolymer films: does lamellar structure imitate a support?
           Matthew J. Farrar, Andrew B. Croll, Kari Dalnoki-Veress

3:54 PM  W17.00008: Confinement and interfacial effects on the alpha relaxation dynamics of thin polymer films
           Rodney Priestley, Linda Broadbelt, Koji Fukao, John Torkelson

4:06 PM  W17.00009: Free Volume behavior and Structure of Polymer Thin Film
           Seisuke Ata, Toshiaki Ougizawa, Makoto Muramatsu, Toshiyuki Ohdaira, Ryoichi Suzuki, Toshitaka Oka, Kenji Ito, Yoshinori Kobayashi

4:18 PM  W17.00010: Effect of Confinement in Ultrathin Films on Translational Diffusion in Polymers near the Glass Transition
           Manish K. Mundra, John M. Torkelson

4:30 PM  W17.00011: Hindering Cooperative Segmental Dynamics at the Free Surface of Polystyrene: The Impact of Narrow Immiscible Interfaces in Polymer Multi-layer Films
           Connie B. Roth, John M. Torkelson

4:42 PM  W17.00012: Dynamics of Polymer Melts Confined by Smooth Walls: Crossover from Non-entangled to Entangled Regime
           Qi Liao, Yijie Li, Dongshan Wei, Xigao Jin, Charles Han

4:54 PM  W17.00013: Surface Dynamics of Polymer Brushes in the Melt State: An XPCS Study
           Mark D. Foster, Bulent Akgun, Gokce Ugr, William J. Brittain, Suresh Narayanan, Hene Lee, Sanghoon Song, Hyunjung Kim, Zhang Jiang, Sunil K. Sinha

5:06 PM  W17.00014: Dynamics from Buried Polymer-Polymer Interfaces in Thin Films
Session W24. Microphysical Properties of Block Copolymer Aggregates, Going Beyond Structure (DPOLY)
Thursday afternoon, 2:30 PM, Colorado Convention Center, 201
Chair: Steve Hudson, National Institute of Standards and Technology

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<td>2:30 PM</td>
<td>W24.00001: Solvated Block Copolymers as a Novel Class of Electroactive Nanostructured Polymers</td>
<td>Invited Speaker: Richard Spontak</td>
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<td>3:06 PM</td>
<td>W24.00002: Self-Assembled Micro-Phase Separated Semi-Permeable Membranes</td>
<td>Dale Handlin, Scott Trenor, Carl Willis</td>
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<td>3:30 PM</td>
<td>W24.00004: Phase Behavior of Block Copolymers containing Poly(vinyl pyridine) by Coordination with Metal Chloride</td>
<td>Dong Hyun Lee, Hwang Yong Kim, Jin Kon Kim, Du Yeol Ryu, June Huh</td>
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<tr>
<td>3:42 PM</td>
<td>W24.00005: Brownian Dynamics Simulation of ABA Block Copolymer in Selective Solvent: Kinetics of HEX Cylinders to BCC Spheres Transition</td>
<td>Minghai Li, Yongsheng Liu, Rama Bansal</td>
</tr>
<tr>
<td>3:54 PM</td>
<td>W24.00006: Symmetric Diblock Copolymers in Nanopores: Monte Carlo Simulations and Strong-Stretching Theory</td>
<td>Qiang Wang</td>
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<tr>
<td>4:06 PM</td>
<td>W24.00007: Self-assembly of a diblock a copolymer melt absorbed in porous materials</td>
<td>Panagiotis Maniadis, Ioannis Tsippanogiannis, Edward Kober</td>
</tr>
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<td>4:42 PM</td>
<td>W24.00010: Mesoscopic Archimedian Tiling Patterns in ABC Star-Shaped Terpolymers</td>
<td>Atsushi Takano, Kenichi Hayashida, Tomonari Dotera, Yushu Matsushita</td>
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<td>4:54 PM</td>
<td>W24.00011: Hierarchical Structures of a Multiblock Copolymer Melt</td>
<td>Weihua Li, An-Chang Shi</td>
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<td>5:06 PM</td>
<td>W24.00012: Whispering Gallery Modes in Highly Hexagonal Symmetric Structures of Three Dimensional SBA-1 Mesoporous Silica</td>
<td>Chih-Wei Chen, Yang-Fang Chen</td>
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Session W25. Polymer Melts and Solutions (DPOLY)
Thursday afternoon, 2:30 PM, Colorado Convention Center, 203
Chair: Kyusoon Shin, Seoul National University

2:30 PM W25.00001: Dynamic Light Scattering Studies of Light Absorbing Solutions
Thomas Seery, Maria DeMesa

2:42 PM W25.00002: Small Angle Neutron Scattering Study of Oligo(ethylene glycol) Grafted Polystyrene in Aqueous Solutions
G. Cheng, Y.B. Melnichenko, G.D. Wignall, F. Hua, K. Hong, P.F. Britt, J.W. Mays

2:54 PM W25.00003: Steady state structure factor and stress in sheared semi-dilute polymer solutions
Prasanth Jose, Grzegorz Szamel

3:06 PM W25.00004: Structure of polydisperse star branched polymers grown by diffusion
Guillermo Ramirez-Santiago, Carlos I. Mendoza

3:18 PM W25.00005: Modeling the liquid-solid transition in saturated triglycerides
C.B. Hanna, D.A. Pink, A.J. MacDonald, K. Thillainadarajah, R. Corkery, D. Rousseau

Hiroshi Watanabe

3:42 PM W25.00007: Conformational studies of conjugated polymers substituted with different side chains
Yunfei Jiang, Uwe H. F. Bunz, Dvora Perahia

3:54 PM W25.00008: High-Pressure Vibrational Spectroscopy of Polymers
E.D. Emmons, R.G. Kraus, J.S. Thompson, A.M. Covington

4:06 PM W25.00009: Conformational Heat Capacity of Liquid Biodegradable Polymers in the Absence and Presence Water
Marek Pyda, Erbieta Nowak-Pyda

4:18 PM W25.00010: Diffusion in Polypropylene Melts: Role of Stereochemistry
Ernst von Meerwall, Numan Waheed, Wayne Matte

4:30 PM W25.00011: An examination of the whipping instability of viscoelastic jets in electrosprinning
Pradipto Bhattacharya, Jian Yu, Gregory Rutledge, Gareth McKinley

4:42 PM W25.00012: The role of extensional stress in the formation of electrosprun fibers
Jian Yu, Sergey Fridrikh, Gregory Rutledge

4:54 PM W25.00013: First observation of the first-order transition in ultra-filtration of flexible linear polymer chains
Chi Wu, Fan Jin

5:06 PM W25.00014: First-order Conformation Transition of Single Polyelectrolyte Molecules in Aqueous Solutions
Shengjin Wang, Jiang Zhao

5:18 PM W25.00015: Influence of the solvent size on the behavior in polymer solution
Liia An, Yunqi Li, Tongfei Shi

Session X17. Structure and Dynamics of Polymer Films (DPOLY)
Friday morning, 8:00 AM, Colorado Convention Center, 102
Chair: Joona Bang, Korea University

8:00 AM X17.00001: In-situ Nanoparticles Direct Self-Assembly of Block Copolymer Thin Films
Ranjan Deshmukh, Gavin Buxton, Nigel Clarke, Russell Composto

8:12 AM X17.00002: Real-Time Guided Wave Depolarized Light Scattering of Block Copolymer Thin Films during in Situ Annealing
Jeffrey Wilbur, Nilash Balsara, Zhuangxi Fang, Maurice Neustein, Bruce Garetz

8:24 AM X17.00003: Structural Characterization of Asymmetric Block Copolymer Thin Films using Resonant Soft X-Ray Scattering
J. M. Virgil, J. B. Kortright, N. P. Balsara, R. A. Segalman

8:36 AM X17.00004: Decay length of phase coherent block copolymer films: neutron reflectivity, analytical theoretical and simulation studies
Junhan Cho, Kwanwoo Shin, Kwangsoo Cho, Wonjung Jung, Sangbo Na

8:48 AM X17.00005: Silicon Wire Grid Polarizer for Deep UV Fabricated by Diblock Copolymer Lithography
Koji Asakawa, Young-Rae Hong, Vincent Pelletier, Douglas Adamson, Richard Register, Paul Chalkin

9:00 AM X17.00006: Why Does the Effect of the Free Surface on the $T_g$-Confinement Effect Depend So Strongly on Polymer Species?
John M. Torkelson, Manish K. Mundra

9:12 AM X17.00007: Dynamics of water on self-assembled monolayers
J. Matthew D. Lane, Michael Chandross, Mark J. Stevens, Gary S. Grest, Christian D. Lorenz

9:24 AM X17.00008: Phase Transitions of Hexadecanethiol Self-Assembled Monolayers on Polycrystalline Silver Studied by NanoDSC
Liang Hu, Leslie Allen

9:36 AM X17.00009: Kinetics of growth and assembly of ordered array of non-coalescing water droplets over evaporating polymer solutions
Vivek Sharma, Mohan Srinivasarao

9:48 AM X17.00010: Molecular Dynamics in Self-Assembled Monolayers
Jason Bochinski, Derrick Stevens, Mary Scott, Laura Guy, Casey deDeugd, Laura Clarke

10:00 AM X17.00011: Thickness study of Langmuir-Blodgett Films of Copolymers of Vinylidene Fluoride with Trifluoroethylene using X-ray Reflectivity
Jhee Kim, Stephen Ducharme, Shireen Adenwalla

10:12 AM X17.00012: Electro-Optic Polymer Films for Reconfigurable Photomask Applications
Adam Fontecchio, Anna Fox

10:24 AM X17.00013: Interfacial Characteristics of a Potentially Anti-befouling Highly Rigid Ionomer
Christopher J. Cornelius, Cy H. Fujimoto, Lilin He, Dvora Perahia

10:36 AM X17.00014: Interfacial Effects of Nanometer Fluorinated Segments on Energy Controlled Responsive Polymeric Films
Dvora Perahia, Alma Gonzales, Dennis W. Smith Jr.
### Session X18. Biopolymers II: Simulations (DPOLY/DCOMP)

*Friday morning, 8:00 AM, Colorado Convention Center, 103*

Chair: Daniel Savin, University of Vermont

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<thead>
<tr>
<th>Time</th>
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<th>Authors</th>
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<tr>
<td>8:00 AM</td>
<td>X18.00001: Effect of solvent on the conformation and dynamics of Aspartic Acid Protease by a coarse-grained bond-fluctuating Monte Carlo simulation</td>
<td>Ras Pandey, Barry Farmer</td>
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<tr>
<td>8:12 AM</td>
<td>X18.00002: Statistical Mechanics of Membrane Proteins</td>
<td>Karim Wahba, Robijn Bruinsma</td>
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<td>8:24 AM</td>
<td>X18.00003: Mechanical unfolding of proteins: reduction to a single-reaction coordinate unfolding potential, and an application of the Jarzynski Relation</td>
<td>Peter Olmsted, Daniel West, Emanuele Paci</td>
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<tr>
<td>8:36 AM</td>
<td>X18.00004: Boundary Element Microhydrodynamics: Stagnation of flow in protein cavities</td>
<td>Sergio Aragon, David Hahn</td>
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<tr>
<td>9:00 AM</td>
<td>X18.00006: Electrophoresis of DNA on a disordered two-dimensional substrate</td>
<td>Cynthia J. Olson Reichhardt, Charles Reichhardt</td>
</tr>
<tr>
<td>9:12 AM</td>
<td>X18.00007: Shape of DNA in a box</td>
<td>Ya Liu, Bulbul Chakraborty, Jane’ Kondev</td>
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<tr>
<td>9:24 AM</td>
<td>X18.00008: Polymer dynamics in a tight squeeze</td>
<td>Jeremy Schmit, Ercan Kamber, Joshua Kalb, Bulbul Chakraborty, Jane’ Kondev</td>
</tr>
<tr>
<td>9:36 AM</td>
<td>X18.00009: λ-DNA thermal migration in a microchannel</td>
<td>Jennifer Kreft, Yeng-Long Chen</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>X18.00011: Monitoring the Bending Stiffness of DNA</td>
<td>Chongyi Yuan, Xiongwen Lou, Elizabeth Rhoades, Huimin Chen, Lynden Archer</td>
</tr>
<tr>
<td>10:12 AM</td>
<td>X18.00012: Validity of the bead-spring model for describing the linear viscoelastic properties of single-strand DNA under strongly denaturing conditions</td>
<td>Semant Jain, Ronald Larson</td>
</tr>
<tr>
<td>10:24 AM</td>
<td>X18.00013: Dynamics of particles with key-lock interactions</td>
<td>Nicholas Licata, Alexei Tkachenko</td>
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<tr>
<td>10:36 AM</td>
<td>X18.00014: Molecular Dynamics Simulation of semi-flexible filament assembly</td>
<td>Lam T. Nguyen, Qi Wang, Ziyad Muslimani, Linda S. Hirst</td>
</tr>
<tr>
<td>10:48 AM</td>
<td>X18.00015: Ion condensation near patterned surfaces</td>
<td>Yury Velichko, Francisco Solis, Sharon Loverde, Monica Olivera de la Cruz</td>
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</table>

### Session X24. Conducting Polymers and Devices (DPOLY/DMP)

*Friday morning, 8:00 AM, Colorado Convention Center, 201*

Chair: Pawan Kahol, Missouri State University

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>X24.00001: Dissipative effects in the electron transport through conducting polymers</td>
<td>Natalya Zimbovskaya, Grigory Zimbovskiy</td>
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<tr>
<td>8:12 AM</td>
<td>X24.00002: Tuning the Electrical Conductivity of Polyaniline by Controlling the Molecular Characteristics of the Polymer Acid Template</td>
<td>Joung Eun Yoo, Tracy Bucholz, Yueh-Lin Loo</td>
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<tr>
<td>8:24 AM</td>
<td>X24.00003: Electrical Conductivity Measurements of Nanofibers Electrospun from Polyaniline/Polyethylene Oxide Blends</td>
<td>Saima Khan, Aurangzeb Khan, Martin Kordesch</td>
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<tr>
<td>9:00 AM</td>
<td>X24.00006: Optical Characterization of a Single Cavity in Random Laser Polymer Film</td>
<td>Z.Valy Vardeney, Abdullah Tulek</td>
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<tr>
<td>9:12 AM</td>
<td>X24.00007: Unidirectional Emission from Asymmetric Polymer Microcavities</td>
<td>Abdullah Tulek, Z.Valy Vardeney</td>
</tr>
<tr>
<td>9:24 AM</td>
<td>X24.00008: Molecular Spectroscopy Using Slow Surface Plasmon Polarizations</td>
<td>Michael Preiner, Ken Shimizu, Nazanin Davandi, Jason Fabbr, Nicholas Melosh</td>
</tr>
<tr>
<td>9:48 AM</td>
<td>X24.00010: The Electronic structure at the copper phthalocyanine to P(VDF-TrFE) copolymer thin films interface</td>
<td>Jie Xiao, Carolina Ife, Peter Dowben</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>X24.00011: Transport properties and non-volatile memory application of self assembled nanoparticle array by microtubes</td>
<td>Mei Xue, K.L. Wang, Jing Zhou, Bruce Dunn</td>
</tr>
<tr>
<td>10:12 AM</td>
<td>X24.00012: pH Memory Effects of Tunable Block Copolymer Photonic Gels and Their Applications</td>
<td>Youngjung Kang, Edwin L. Thomas</td>
</tr>
<tr>
<td>10:36 AM</td>
<td>X24.00014: Salt-induced phase transitions in charged polymerized membranes</td>
<td>Angelo Cacciuto, Erik Luijten</td>
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### Session X25. Liquid Crystalline And Amorphous Polymers (DPOLY)

**Friday morning, 8:00 AM, Colorado Convention Center, 203**

**Chair:** Andrey Dobrynin, University of Connecticut

8:00 AM  X25.00001: Swelling and Shrinking Dynamics of Monodomain Nematic Elastomers  
Kenji Urayama, Ryo Mashita, Yuko Arai, Toshikazu Takigawa

8:12 AM  X25.00002: Effects of Long Wave-length Thermal Fluctuations on the Elasticity of Nematic Elastomers  
Xiangjun Xing, Aparna Baskaran

8:24 AM  X25.00003: Synthesis of Optimal and Imperfect Main Chain Smectic Elastomers  
Harshad Patil, Ronald Hedden

8:36 AM  X25.00004: Construction of Chiral Propeller Architectures from Achiral Molecules  
Kwang-Un Jeong, Deng-Ke Yang, Matthew J. Graham, Brian S. Knapp, Frank W. Harris, Stephen Z.D. Cheng

8:48 AM  X25.00005: Small angle X-ray scattering studies of side chain liquid crystalline block copolymers  
Eric Verploegen, Lu Tian, Paula Hammond

9:00 AM  X25.00006: Solvent induced shape changes in liquid crystal elastomers  
Attilio Golemme, Tibor Toth-Katona, Jeremy Neal, Peter Palffy-Muhoray

9:12 AM  X25.00007: Bloch wall defects in nematic thin films: experiments and simulations  
Mohan Srinivasarao, Jian Zhou, Jung O. Park, Gino De Luca, Alejandro D. Rey

9:24 AM  X25.00008: Abnormal Slowdown of Longitudinal Diffusion of F-actin across Isotropic to Nematic Phase Transition  
Jun He, Jorge Viamontes, Jay Tang

9:36 AM  X25.00009: Dynamic Fragility and the Glass Transition: Is there a relationship?  
Gregory McKenna, Qian Qin

9:48 AM  X25.00010: Prediction of Creep Behavior in PMMA  
James Caruthers, Rebecca Martin, Grigori Medvedev

10:00 AM  X25.00011: Strain Hardening and Plastic Deformation in Polymer Glasses  
Robert S. Hoy, Mark O. Robbins

10:12 AM  X25.00012: The influence of nonlinearity on the timescale of volume relaxation  
Prashanth Badhrayarayan, Sindhee Simon

10:24 AM  X25.00013: Photothermal studies of polymers using polarized light  
Marshall Thomsen, Daeha Joung, Don Snyder

10:36 AM  X25.00014: Gradient Copolymers Yield Uniquely Broad Glass Transition Temperatures in Comparison with Block Copolymers and Polymer Blends  
Jungki Kim, Michelle M. Mok, Christopher L.H. Wong, Robert W. Sandover, John M. Torkelson

10:48 AM  X25.00015: Utilizing Nanoparticle Surface Plasmons for Surface-Initiated Polymerization and Conformational Switching of Polymers  
Nelson Nunalee, Jack Mock, Ashutosh Chilkoti, Stefan Zauscher

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### Session Y4. Assembly and Organization in Polymeric Systems (DPOLY)

**Friday mid-day, 11:15 AM, Colorado Convention Center, Korbel 2B-3B**

**Chair:** Jack Douglas, National Institute of Standards and Technology

11:15 AM  Y4.00001: Self Organization via Frontal Polymerization  
*Invited Speaker:* John Pojman

*Invited Speaker:* Steven Hudson

12:27 PM  Y4.00003: Controlling self-assembly in thin block copolymer films: From model systems to applications  
*Invited Speaker:* Georg Krausch

1:03 PM  Y4.00004: pH and Solubility Effects as Control Mechanisms for Vesicle Interfaces  
*Invited Speaker:* Adi Eisenberg

1:39 PM  Y4.00005: Nanomechanics of Bone: Nanogranular Friction and Heterogeneity  
*Invited Speaker:* Christine Ortiz
Session Y17. Multiscale Modeling in Polymeric Materials (DPOLY/DCOMP)
Friday mid-day, 11:15 AM, Colorado Convention Center, 102
Chair: Michael Rubinstein, University of North Carolina at Chapel Hill

11:15 AM  Y17.00001: Molecular Dynamics Simulations of Layer-by-Layer Assembly of Charged Macromolecules
            Invited Speaker: Andrey Dobrynin

11:51 AM  Y17.00002: Dynamics of melts consisting of circular and linear polymers
            Michael Lang, Michael Rubinstein

12:03 PM  Y17.00003: Numerical Advances in Field Theoretic Simulations of Polymers
            Erin M. Lennon, Kirill Katsov, Hector D. Ceniceros, Carlos J. Garcia-Cervera, Glenn H. Fredrickson

12:15 PM  Y17.00004: Analytical coarse-graining theories for multiscale modeling of macromolecular systems
            Marina Guenza

12:27 PM  Y17.00005: Multiscale modeling of self-assembling polymer solutions
            Dmitry Bedrov, Grant Smith, Ben Hanson

12:39 PM  Y17.00006: Coarse grained model of polymer dynamics
            R.C. Picu, A. Rakshit

            Praveen Depa, Janna Maranas

1:03 PM   Y17.00008: Structure and Evolution of Ordered Domains in Deeply Quenched Polyethylene Melt
            Naida Lacice, Laurence Fried, Richard Gee

1:15 PM   Y17.00009: Simulating the Oxidation of Polypropylene Using a Reactive Forcefield
            Joanne Budzien, Aidan Thompson

1:27 PM   Y17.00010: Rheological properties of polymer melts in confined shear flow from dynamic Monte Carlo simulations
            John Dorgan

1:39 PM   Y17.00011: Flow-deformed conformations of entangled polymers as persistent random walks
            Yitzhak Shnidman

1:51 PM   Y17.00012: String-merging of meso-viscoelastic droplets
            Yuanze Xu, Jianmao Xu

2:03 PM   Y17.00013: DNA-Particle Hydrodynamic Interactions In Microchannels
            Yeng-Long Chen


Session Y18. Polymer Blends (DPOLY)
Friday mid-day, 11:15 AM, Colorado Convention Center, 103
Chair: Valeriy Ginsburg, Dow Chemical

11:15 AM  Y18.00001: Thermodynamic Properties of A/B/A-C Polymer Blends from SANS and USANS
            Nisita Wanakule, Megan Robertson, David Lohse, Nitash Balsara

11:27 AM  Y18.00002: Kinetic Studies of Pressure-Quenched A/B/A-C Polymer Blends
            Alisyn Nedoma, Megan Robertson, David Lohse, Nitash Balsara

11:39 AM  Y18.00003: Effects of deuterium labeling at PS/PMMA interfaces studied with resonant soft x-ray reflectivity
            R. Ade, C. Wang, S. E. Harton, B. Watts, T. Araki

11:51 AM  Y18.00004: Ion solvation and its effects on polymer blend miscibility
            Zhen-Gang Wang

12:03 PM  Y18.00005: Thermoreversible bond formation in multi-component polymer blends
            Richard Elliott, Glenn Fredrickson

12:15 PM  Y18.00006: Modeling of Crystallization and Phase Separation in Binary Blends Driven by Photopolymerization
            Pankaj Rathi, Thein Kyu

12:27 PM  Y18.00007: Shear-induced Crystallization of Polypropylene/Poly(Ethylene-co-Octene) Blends
            Xia Dong, Kun Meng, Chenggui Zhang, Tongchen Sun, Charles C. Han, Jianhua Dong

12:39 PM  Y18.00008: Nanoparticles as Blend Compatibilizers: Layered Silicates and Fullerenes
            Jitendra Sharma, Romesh Patel, Liang Xu, Ramanan Krishnamoorti

12:51 PM  Y18.00009: Compatibilization of Polymer Blends via Reactive Processing with Telechelic Copolymers
            Earl Ashcraft, Mark Dadmun

1:03 PM   Y18.00010: The Effect of Copolymer Composition on the Dynamics of Random Copolymers of Styrene and Methylmethacrylate in a PMMA Matrix: A Neutron Reflectivity Study
            Sudesh Kamath, Mark Dadmun, William Hamilton, Michael Arlen

1:15 PM   Y18.00011: Nucleation in Polymer Blends
            Edward Feng

1:27 PM   Y18.00012: Poly(ethylene oxide) Dynamics in Blends with Poly(vinyl acetate)
            Junshu Zhao, Mark Ediger

1:39 PM   Y18.00013: Viscosity of “Nanoparticle”/Polymer Mixtures
            John G. Curro, Amalie L. Frischknecht

1:51 PM   Y18.00014: Tg in Polymer/Oligomer Athermal Blends
            Wei Zheng, Sindee Simon

2:03 PM   Y18.00015: Surface-induced structure formation of polymer dispersions liquid crystals on chemically gradient substrate
            Jun Wang, Jianfeng Xia, Suck Won Hong, Feng Oiu, Zhiqun Lin
Special DPOLY Events
Sunday, March 4th 2007
DPOLY Reception, time and location TBD - check your email
This DPOLY reception recognizes Glenn Fredrickson (recipient of the 2007 Polymer Physics Prize) and Darrin Pochan (recipient of the 2007 Dillon Medal).

Tuesday, March 6th 2007
DPOLY Business Meeting
Room: 201, Colorado Convention Center, 5:45 – 6:45 PM

Tuesday, March 6th 2007
Discussion on Research Funding from the National Science Foundation
Room: 201, Colorado Convention Center, 6:45 – 7:45 PM

Award Lectures
Polymer Physics Prize:
Glenn Fredrickson
Challenges for Polymer Theory and Simulation
Tuesday, March 6th 2007, 8:00 AM
Four Seasons 4, Colorado Convention Center

Padden Prize Symposium:
Tuesday, March 6th 2007, 11:15 AM
Room 201, Colorado Convention Center

Dillon Medal:
Darrin Pochan
Gels to Dumbbell Micelles: Construction of Materials and Nanostructure with Self-assembly
Tuesday, March 6th 2007, 2:30 PM
Room 201, Colorado Convention Center

Disclaimer: The information contained within this booklet is unofficial and is accurate as of 1/13/2007. For all official information please refer to the APS March Meeting Proceedings (http://meetings.aps.org/Meeting/MAR07/)