AMERICAN PHYSICAL SOCIETY

DIVISION OF POLYMER PHYSICS

NEWSLETTER
October 19, 2009

UPCOMING DEADLINES

Nominations from the membership for positions on the DPOLY Executive Committee are due Friday, November 20, 2009 (see below).
Abstracts for the 2010 APS March Meeting are due by 5:00 p.m. EST on Friday, November 20, 2009.
Nominations for the 2010 Padden Award are due by 5:00 p.m. EST on Friday, November 20, 2009.

For International Members: APS encourages March meeting participants to *apply for a visa as early as possible*. It takes 7 to 10 days to generate the Meeting Invitation Letter. More information is available at: http://www.aps.org/programs/international/visa/meetings/index.cfm

DPOLY EXECUTIVE COMMITTEE

Glenn Fredrickson, DPOLY Chair-Elect, has informed us that other professional commitments will prevent his continuing to carry out his duties on the DPOLY Executive Committee.

Ron Larson, current DPOLY Vice-Chair, has agreed to become DPOLY Chair in March, 2010 (a year earlier than anticipated). The DPOLY Nominations Committee has provided the names of candidates to fill the three vacancies on the Executive Committee.

2010 POLYMER PHYSICS PRIZE AND 2010 DILLON MEDAL RECIPIENTS

The 2010 Polymer Physics Prize will be awarded to Michael Rubinstein (University of North Carolina): *"For his leadership in the field of structure and dynamics of polymer liquids, interfaces and gels"*

The 2010 Dillon Medal will be awarded to Yueh-Lin Loo (Princeton University): *"For insightful experiments connecting structure with performance in conducting polymers, organic electronics, and functional block copolymers"*

The Polymer Physics Prize is sponsored by the Dow Chemical Company and the Dillon Medal is sponsored by Elsevier, publisher of *Polymer*.

CALL FOR NOMINATIONS: DPOLY EXECUTIVE COMMITTEE ELECTIONS

The DPOLY Nominating Committee has proposed the following slate of candidates for positions on the DPOLY Executive Committee:

For Chair-Elect:
Jane Lipson (Dartmouth College)
Wes Burghardt (Northwestern University)

For Member-at-Large:
Ali Dhinojwala (University of Akron)
Paul Nealey (University of Wisconsin)

For Vice-Chair:
Robert Briber (University of Maryland)
John Torkelson (Northwestern University)

Members of the Division are hereby invited to submit nominations for these positions. As provided by the Bylaws, any candidate named by not less than 1% of Division members (currently, 14) shall be considered nominated. Nominations should be sent to the Secretary-Treasurer (email and fax info at the end of this newsletter) and must be received **no later than November 20, 2009**.

CALL FOR NOMINATIONS: Frank J. Padden Jr. Award, 2010

DPOLY encourages you to nominate a deserving graduate student for the Frank J. Padden, Jr. Award, which honors "Excellence in Polymer Physics Research." The number of quality applications is a good barometer of the future health of our Division, so please take a moment from your hectic schedule and nominate a deserving student. The Padden Award is sponsored by the College of Polymer Science and Polymer Engineering, University of Akron.

Application Criteria:

(1) membership in DPOLY,
(2) PhD candidate, and
(3) has not completed requirements for a Ph.D. before November 20, 2009.

Nomination Packet:

(1) Abstract
- contributed talk in the DPOLY program at the March Meeting (submitted on-line).
- electronic copy to the DPOLY Education Committee (see below),

(2) A 1-page curriculum vitae (list but do not attach publications), and
(3) A nominating letter addressing the quality of the graduate research and academic excellence.

Send nominations by email to Ron Larson (rlarson@engin.umich.edu) using the subject line "Padden_name of student". Paper nominations will not be accepted. The deadline for receipt of all materials is 5pm EST on November 20, 2009.

APS INTERNATIONAL TRAVEL GRANT AWARD PROGRAM

DPOLY is a sponsor of the APS the International Travel Grant Award Program (ITGAP) and DPOLY members are eligible to apply for travel grants. This program provides travel grants to promote international scientific collaborations, especially between APS members and physicists in developing countries. Conditions, criteria, and the selection process are described at: http://www.aps.org/programs/international/programs/travel-grants.cfm.

UKPPG/DPOLY Polymer Lecture Exchange

In order to strengthen ties between the Division of Polymer Physics (DPOLY) of the American Physical Society (APS) and the Polymer Physics Group (PPG) of the Institute of Physics, a UKPPG/DPOLY Polymer Lecture Exchange was established in 2009. Starting with meetings in 2009 and offering every two years to coincide with UK-PPG meetings, each group will choose a person who will present an invited lecture at the meeting of the other group. The next nominations are targeted for presentations at the March 2011 APS and Sept 2011 UK-PPG (Guildford, UK) meetings.

Nominations will be solicited for the DPOLY member who will lecture at the PPG meeting in the UK in Sept 2011 at University of Surrey (Guildford, UK). In order to be eligible, the nominee must be a DPOLY member and must have received the Ph.D. within 5 years of the nomination deadline (**December 31, 2010**). A call for nominations will be distributed in Fall 2010. The DPOLY Executive Committee will select the Lecturer. Details are at http://www.aps.org/units/dpoly/awards/ukppg.cfm

2010 DPOLY SHORT COURSE

The 2010 DPOLY Short Course entitled "Polymers for Energy Generation and Storage" will be offered just ahead of the March Meeting in Portland, OR on March 13 and 14, 2010. The organizers are Rachel Segalman and Michael Chabinyc.

Polymers hold much promise as active layers in lightweight devices for generation and storage of energy. Although the solid state physics and electrochemistry of such devices have been the subject of intense research, there have been fewer studies from the perspective of polymer physics. In both applications, there is a need to control the nanoscale morphology of either a polymer or a polymer blend in order to optimize transport of a charged species.

The purpose of this DPOLY short course is to provide a background in the operation and underlying physics of both organic photovoltaics and batteries to an audience primarily consisting of graduate students, postdoctoral researchers, and early career scientists already knowledgeable in polymer physics. This forum will both provide a basic foundation of knowledge as well as a deeper discussion of outstanding problems and avenues of research in polymers relevant to applications in energy.

Outline:

Energy Generation - Photovoltaics

1. Basic PV operation (Jenny Nelson, Imperial College)
2. Introduction to optical excitations & excitons (Garry Rumbles, National Renewable Energy Laboratory)
3. Basic PV structures/charge generation at interfaces: Bulk, single layers, bilayers (Michael Chabinyc, UC Santa Barbara)
4. Extraction of carriers/impact on efficiency (Jenny Nelson, Imperial College)
5. Polymer physics: Self-assembly, morphology, and thermodynamics of conjugated polymers (Rachel Segalman, UC Berkeley)

Energy Storage - Batteries

1. Basic operation: structures, materials, and systems (Paul Albertus, Bosch)
2. Basic electrochemistry: thermodynamics, kinetics, and stability (Jeremy Myers, University of Texas)

3. Polymer electrodes: charge transport, energetics, and morphology (Hiroyuki Nishide, Waseda University)
4. Polymer electrolytes: ion transport, morphology, and mechanical properties (Nitash Balsara, UC Berkeley)

Registration Fee:

Undergraduate/Graduate/Post-doctoral students	$100
DPOLY member beyond post-doc	$150
Not DPOLY member	$250

2010 DPOLY MARCH MEETING

The next DPOLY March Meeting will be held March 15-19, 2010 in Portland, OR. Ali Dhinojwala (University of Akron; email: ali4@uakron.edu) is the Program Chair.

Session chairs are sought for the contributed sessions. No experience is necessary and APS will send you guidelines. If you are interested in serving as a session chair, please email Ali your contact information (name, institution, mailing address, and email). Also, volunteers are needed to help at the Sorter's Meeting to be held in early December at APS headquarters in College Park, Maryland.

The sorting topics for the 2010 meeting, including special focus topics, are listed below:

04. Polymer and Soft Matter Physics
04.1 Semi-Crystalline Polymers
04.2 Liquid Crystalline Order in Polymer and Complex Fluids
04.3 Polymeric Glasses
04.4 Polymer Network Mechanics
04.5 Elastomers and Gels
04.6 Charged and Ion-Containing Polymers
04.7 Physics of Copolymers
04.8 Polymer Blends
04.9 Polymer Composites
04.10 Electrically and Optically Active Polymers
04.11 Surfaces, Interfaces, and Polymeric Thin Films
04.12 Friction, Adhesion, and Fracture of Polymers
04.13 Biopolymers Molecules Solutions, Networks, and Gels
04.14 New Experimental, Theoretical, and Computational Methods in Polymer and Soft Matter Physics

Special Focus Topics:
04.15.1 Crystallization in Confined Geometry
04.15.2 Relaxation Dynamics of Polymeric Glasses
04.15.3 Dynamics of Polymers and Complex Fluids
04.15.4 Polymer Network Mechanics
04.15.5 Hierarchically and Templated Ordered Systems
04.15.6 Long Range Order in Polymeric Structure and Morphology
04.15.7 Thin Films Copolymers
04.15.8 Polymer-Nanoparticle Interactions
04.15.9 Physics of Polymer Nanocomposites
04.15.10 Organic Electronics and Photonics (DMP/DPOLY) [same as 16.12.2]
04.15.11 Polymers and Energy: Photovoltaic, LED and Batteries (DPOLY/GERA/DMP) [same as 25.9.3]
04.15.12 Polymer Brushes
04.15.13 Glass Transition in Thin Films
04.15.14 Single Molecule Biophysics (DPOLY/DBP/DCP) [same as 10.14.1 & 11.8.6]
04.15.15 Biological-Synthetic Hybrid Materials (DPOLY/DBP) [same as 10.14.2]
04.15.16 Synchrotron X-ray and Neutron Techniques in Soft Matter and Biological (DPOLY/DBP) [same as 10.14.3]
04.15.17 Multiscale Modeling in Polymer and Soft Matter Physics (DPOLY/DCOMP)
04.15.18 Polymer Colloids (DPOLY/DCMP)

Descriptions of the Focus Topic Sessions and the contact information of organizers for them are available at: http://www.aps.org/units/dpoly/upload/categories10.pdf

The invited symposia and presentations of likely interest to DPOLY members are listed below:

Polymer Physics Prize

Composto, Russell and Yu, Hyuk

Michael Rubinstein	I-4-14-02 Polymer Physics Prize
Ralph Colby	I-4-14-02 Designing Ionomers to Transport Counterions
Sergey Panyukov	I-4-14-02 Why Brownian yet Anomalous? The Importance of Waiting
Eugenia Kumacheva	I-4-14-02 A block copolymer approach to the pre-programmed organization of inorganic nanostructures
Ludwik Leibler	I-4-14-02 Rewards on Physics and Design of High Performance Nanocomposites

Materials with Topological Defects on Gaussian Curved Surfaces *(Primary Unit: DCMP)*

Chaikin, Paul

Mark Bowick	M-08-03-02 Disclinations and Scars on curved surfaces
Ed Kramer	M-08-03-03 Diblock Copolymers on curved surfaces
David Weitz	M-08-03-04 Scars on Spherical Colloidosomes
Willaim Irvine	M-08-03-05 Colloidal Wigner Crystals on Catenoids
Francesco Stellacci	M-08-03-06 Defects as Reaction sites on nanoparticles

Dynamics of Polymers on Multi-Length Scales: Melts

Grest, Gary

Ralf Everaers	I-4-01-02 From Structure to Dynamics of Polymer Melts
Dieter Richter	I-4-01-03 Segmental Dynamics of Nanostructured Diblock Copolymer Melts
Ronald Larson	I-4-01-04 Rheology of entangled polymer melts
Kurt Kremer	I-4-01-05 Bridging Length Scales in Modeling Polymer Melts
Gary Grest	I-4-01-06 Interdiffusion and Self-healing of Entangled Polymer Melts

Dynamics of Polymers on Multi-Length Scales:Solutions *(Join Unit: DCOMP)*

Grest, Gary

Michihiro Nagao	I-4-15-02 Dynamics in Multicomponent polyelctrolyte solutions
Burkhard Dünweg	I-4-15-02 Implicit and Explicit Solvent Models for the Simulation of a Single Polymer Chain in Solution: Lattice Boltzmann vs Brownian Dynamics
Dvora Perahia	I-4-15-02 Dynamics of Rigid Polymers in Solution
Erwin Frey	I-4-15-02 Dynamics of Semiflexible Polymers in Solution
Peter Olmsted	I-4-15-02 Shear Banding in Polymer Solutions

Dynamics of Polymers on Multi-Length Scales: Interfaces *(Join Unit: DCOMP)*

Grest, Gary

Mark Dadmun	I-4-16-02 Telechic Polymers at Solid Surfaces
Mark Foster	I-4-16-02 Dynamics of Dry Homopolymer Brushes
Jacob Klein	I-4-16-02 Forces between Polyelectrolyte Brushes
Flint Pierce	I-4-16-02 Molecular Dynamics Simulations of Responsive Semi-Fluorinated Interfaces
Ken Wynne	I-4-16-02 Physical and Mechanical Properties of Responsive Semi-fluorinated Polymers Interfaces

Single chain experiments: from polymers to biophysics *(Primary Unit: DBP)*

Alexander Grosberg

Jasna Brujic	I-10.1-02-02 Molecular architecture governs the kinetics of single molecule unfolding under force
Jens Gundlach	I-10.1-02-03 Single molecule DNA translocation and sequencing with the nanopore MspA
Yitzhak Rabin	I-10.1-02-04 Electrostatic focusing of unlabeled DNA into nanoscale pores using a salt gradient
Mark Williams	I-10.1-02-05 Single molecule DNA interaction kinetics of retroviral nucleic acid chaperone proteins
David Wu	I-10.1-02-06 How Bacteriophage Genomes Get Inside Cells

Celebrating 50 Years of Lasers in Condensed Matter Physics: Dynamics & Imaging

Cicerone, Marcus

Steve Granick	I-4-11-02 Transport Dynamics - One Particle at a Time
Mike Fayer	I-4-11-03 Dynamics of Liquids and Proteins Measured with 2D IR Spectroscopy
Theodore Goodson III	I-4-11-04 Entangled Photons and Their Use in the Spectroscopy of Organic Materials
Paul Barbara	I-4-11-05 Single Molecule Studies of Conjugated Polymers
Alexei Sokolov	I-4-11-06 Light Scattering Studies of Dynamics in Soft Materials

Celebrating 50 Years of Lasers in Condensed Matter Physics: Surfaces, Imaging & Technology

Cicerone, Marcus

Yuen-Ron Shen	I-4-10-02 Nonlinear Optical Spectroscopy as a Unique Probe for Neat Liquid and Polymer Surfaces
Alan Heeger	I-4-10-03 Polymer-based Lasers: Present and Future
John Conboy	I-4-10-04 Exploring the Underlying Biophysics of Eukaryotic Plasma Membrane
Eric Betzig	I-4-10-05 Pushing the Envelope in Biological Imaging
Martin Wegener	I-4-10-06 Polymer-based 3D Photonic Metamaterials

Biological Nanostructures for Photonics and Adhesion

Srinivasrao, Mohan

Doekele Stavenga	I-4-12-02 Biophotonic Crystals on the Wings of Butterflies
Paul Steen	I-4-12-03 Beetle-inspired Capillarity-based Switchable Adhesion
Christopher Summers	I-4-12-04 Bioinspired Strictures and Devices from Nature
Shinya Yoshioka	I-4-12-05 Mechanism of the Tunable Structural Color of Neon Tetra
Kellar Autumn	I-4-12-06 Mechanisms Underlying the Emergent Properties of Gecko-like Nanostructures

Ion Interactions and Transport in Ion-Containing Polymers

Colby, Ralph

Richard Buchner	I-4-08-02 Ion Transport and Triple Ions in Ionic Liquids
Hermann Weingärtner	I-4-08-02 Critical Behavior of Ionic Systems
Hiroyuki Ohno	I-4-08-02 Polymerized Ionic Liquids
Timothy Long	I-4-08-02 Ionic Liquids in Chemistry and Biology
Oleg Borodin	I-4-08-02 Simulations of Ion Motion in Polymer Electrolytes

Dynamics of Nano-confined Polymer Films

Forrest, James and Tsui, Ophelia

Günter Reiter	I-4-09-02 Residual Stresses in Thin Polymer Films Cause Rupture and Dominate Early Stages of Dewetting
John Torkelson	I-4-09-02 The Distribution of Glass-transition Temperatures in Nanoscopically Confined Glass Formers
Fathollah Varnik	I-4-09-02 Reduction of the Glass Transition Temperature in Polymer Films: A Molecular-dynamics Study
Jacob Fetzer	I-4-09-02 Liquid Front Profiles Affected by Entanglement-induced Slippage
Gregory McKenna	I-4-09-02 Dynamics of Ultrathin Polymer Films

See the Resources section on the DPOLY web site for a list of other meetings of interest to the DPOLY community: http://www.aps.org/units/dpoly/resources/index.cfm

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