

DPOLY Newsletter

October 21, 2004

B. L. Farmer

Executive Committee Elections

The elections for positions on the DPOLY Executive Committee are underway. The balloting is being conducted using a web-balloting system developed by the APS. If you have not yet done so, please go to the site provided by previous email to cast your ballot before the November 1 deadline. Information on all of the candidates is available on the website.

2005 Polymer Physics Prize and 2005 Dillon Medal

Timothy P. Russell (University of Massachusetts) will receive the 2005 Polymer Physics Prize, sponsored by General Electric. The citation will be:

For his pioneering research and fundamental elucidation of the surface and interfacial behavior of polymers.

Jan Genzer (North Carolina State University) will receive the 2005 Dillon Medal, sponsored by Elsevier Science Ltd., publisher of Polymer. The citation will be:

For his highly creative manipulation of surface properties via monolayer and macromolecular films.

Tom and Jan will be honored by special symposia at the March Meeting of the Division.

Members Wanted!

Remember $\hat{\circ}$ the first year membership in APS and DPOLY for students is **free!** Membership forms are available on-line at <http://www.aps.org/memb/student.cfm>. For other current APS members, the first year dues for the division are waived when you join DPOLY. You can sign up at the DPOLY homepage: <http://www.aps.org/units/dpoly/>.

Deadlines

November 1	Executive Committee Ballot
December 1	Padden Award Nominations
December 1	Abstracts for March Meeting

March 2005 Program

The next March Meeting will be held in Los Angeles, CA the week of March 21-25, 2005. The DPOLY Program Chair is Dave Morse (University of Minnesota; email: morse@cems.umn.edu). Abstracts must be submitted via the web (see below). The deadline for abstracts is 5:00 p.m. E.S.T., **December 1, 2004**. (Nominations and abstracts for the Padden Award and Symposium have this same deadline).

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 Dave your contact information (name, institution, mailing address, and email). Also, volunteers are also needed to help at the Sorter's meeting to be held Friday, Dec. 10 at APS headquarters in College Park, Maryland.

The DPOLY sorting categories for the March Meeting are listed below. When submitting your abstract, please thoughtfully consider which sorting category is most appropriate.

04. Polymeric and Organic Materials	04.8 Polymer Blends
04.1 Semi-Crystalline Polymers	04.9 Polymer/Inorganic Composites
04.2 Liquid Crystalline Polymers	04.10 Electrically and Optically Active Polymers
04.3 Solid Amorphous Polymers	04.11 Surfaces
04.4 Melts and Solutions	04.12 Thin Films
04.5 Elastomers and Gels	04.13 Experimental Techniques
04.6 Charged and Ion-Containing Polymers	04.14 Theory and Simulation
04.7 Block and Graft Copolymers	

Special Focus Topics

[04.15.1 Biopolymers: Molecules, Solutions and Networks](#)

[04.15.2 Flow of Immiscible Polymer Blends](#)

[04.15.3 Molecular Motion in Miscible Blends](#)

[04.15.4 Organic Electronics, Photonics and Magnetics](#)

[04.15.5 Physics of Emerging Organic Displays - PLEDS](#)

[04.15.6 Interaction of Polymers with Biological Structures](#)

[04.15.7 Hybrid Organic, Inorganic Nanomaterials: Synthesis, Assembly and Applications](#)

Web Submission of Abstracts

Abstracts for the March Meeting must be submitted via the World Wide Web by pointing a browser to <http://abs.aps.org/>. Simply click "Start Abstract Submission," and when the next page appears, select 2005 APS March Meeting . Specify the number of authors, number of collaborations or teams for your abstract, the type of format, and click the "Proceed" button. It is recommended that prior to submitting abstracts, new users select the "TEST Meeting" and complete all steps in order to familiarize themselves with the process. Additional information can be found on the web at <http://www.aps.org/meet/abstracts>.

Call for Nominations: Frank J. Padden Jr. Award

The prestigious Frank J. Padden, Jr. Award honors a graduate student for "Excellence in Polymer Physics Research." To be considered for this award the student must be a member of DPOLY, must be working toward the Ph.D. degree, and must not have completed the requirements for the Ph.D. before December 1, 2004. A nomination package consists of the following:

- 1) An acceptable abstract for a contributed talk in the DPOLY program at the March Meeting. Please submit the abstract *on-line directly to the APS and a second electronic copy* for the award committee, as described further below.
- 2) A 1-page curriculum vitae (do NOT send papers or other attachments),
- 3) A nominating letter addressing the quality of the graduate research and academic excellence. The nominator may be the thesis adviser or another individual familiar with the student and his/her work. Individuals may make only a single nomination in a given year.

An electronic copy of each of these three items should be sent directly to the chair of the Education Committee: Steve Granick (Materials Research Laboratory, Univ. Illinois Urbana-Champaign, email: sgranick@uiuc.edu.) **All materials must be received by 5:00 p.m. E.S.T, Dec. 1, 2004.**

When submitting to the APS, abstracts must be submitted on-line at <http://abs.aps.org>. Please submit the abstract to Sorting Category 4 and in the template space for Special Instructions, enter "Padden Award Symposium". The abstract will be forwarded to the Program Chair for inclusion in the March Meeting DPOLY program, either in the Padden Award Symposium if the nominee is selected as a finalist, or in the appropriate technical category otherwise.

The Education Committee will select 5 finalists based on quality of the research, abstract, c.v., and the nominating letter. The finalists will be invited to a dinner (sponsored by the University of Akron) with members of the DPOLY Education Committee. The Padden Award session will be held during the March Meeting. Each of the 5 finalists will give a 12-minute (including time for questions) oral presentation. The session will be attended by the Education Committee, who will serve as judges, and by any other interested members of DPOLY or APS. The winner will be selected based on quality of the research, the presentation, and response to questions. The winner will be announced at the annual DPOLY Business Meeting. A list of past Padden Award winners can be found on the DPOLY home page, at <http://www.aps.org/units/dpoly/prizes/winners.cfm#padden>.

2005 DPOLY Short Course: Charged Polymers

Saturday March 19, 8:00 am - 5:00 pm
Sunday March 20, 8:00 am - 5:00 pm
(approximately 12 hours of instruction with breaks)
Registration fees: \$400 (\$200 for students)

You must pre-register for this course. There is no on-site registration.

Course description

Hydrocarbon polymers of weakly interacting monomers exhibit unique and useful behavior due to topological connectivity. This behavior is well understood and models have been developed that guide scientists and engineers for a substantial array of applications. Polymers with charged groups are, in contrast, poorly understood and many fundamental challenges persist -- for example, the delineation of the structure of the macromolecule, how the charges are placed, whether or how the fixed charges are shielded and what interactions exist or can be made to occur with the charged macromolecule and an external chemical or physical stimulus. Although private industry devotes considerable resources to ion-containing polymers, the activity devoted to answering basic scientific questions is relatively small. For example, the development of lithium batteries and proton exchange membranes for fuel cells, which are national priorities, is effectively limited by the lack of suitable polymers. Similarly, many biomimetics or biomaterial applications, e.g., implantable glucose sensors, require novel, advanced ionic permselective membranes to develop this promising technology.

Who should attend

The course will be useful to scientists from academia or industry with broad interests in charged polymers. The instructors will assume a background of B.S. level training in physical science or engineering. If you are a student, post doc, faculty member or scientist working in industry dealing with charged polymers, proteins or biomaterials and you need to know how to characterize your system and avoid common pitfalls in understanding these complex materials then this course will be valuable to you.

Topics to be covered

The course will begin with an overview of synthetic methods focusing on challenges of isolating and characterizing charged macromolecules. Examples of charged polymers discussed will include polyelectrolytes, ionomers, proteins, and their complexes. The course will also reference colloids and surfactants as posing comparable challenges in their physics and chemistry. Theory and simulation will be covered from fundamentals to state of the art. Experimental methods for determining properties of charged polymers in solution will be discussed including scattering, rheology, electrophoresis and size exclusion chromatography. Morphology and microscopy of membranes, complexes and tissue scaffolds will round out the course.

Planned Speakers

Thomas A. P. Seery (University of Connecticut)
David Hoagland (University of Massachusetts, Amherst)
Mark Stevens (Sandia National Laboratories)
Darrin Pochan (University of Delaware)
[Others TBD].

Course Organizer

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