

2012 Fall NATIONAL ACS MEETING

Philadelphia, August 19-23, 2012

- [Link to presentations from the “Polymer Science of Everyday Things” symposium in Philadelphia \(8/12\)](#)
- [Recorded meeting presentations from Philadelphia are available](#)

The 2012 FALL [Polymer Preprint](#) is now available on-line

Program Meeting Chair Primary Contact: [Jeffrey Youngblood](#)

Program Meeting Chairs: [Sheng Lin-Gibson](#), [Scott T. Iacono](#)

PACS closed for author abstract and preprint submission March 19, 2012

THE POLY/PMSE PLENARY LECTURE AND AWARDS RECEPTION was WEDNESDAY EVENING

Plenary Speaker: Paula Hammond - Massachusetts Institute of Technology

“Macromolecular Assembly for Novel Biomaterials Micropharmacies and Delivery Platforms”

Theme: Materials for Health and Medicine

Final program

Green Polymer Chemistry: Biocatalysis and Biomaterials (Richard Gross, H.N. Cheng, Patrick Smith)

“Green Polymer Chemistry: Biocatalysis and Biobased Materials”

244th American Chemical Society National Meeting
Philadelphia on August 19 - 23, 2012.

Abstract and Preprint Deadline: March 19, 2012

2012 Fall Meeting

The 6th ACS Symposium on "Green Polymer Chemistry: Polymer Biocatalysis and Biobased Materials" will be held at the Fall 2012 ACS national meeting in Philadelphia, PA (August 19-23, 2012).

Green polymer chemistry is a crucial area of research that is related to sustainability, biobased raw materials for new polymeric materials, biocatalysis, and environmentally friendly processes. The goals of this symposium are to provide updates of the latest developments from active laboratories in the world and to stimulate discussions of the challenges and opportunities of this exciting area. This symposium will include the following topics that interweave concepts of polymers, materials, and biocatalysis:

1. New biobased materials involving green chemistry and/or biocatalysis
 - Novel bioprocesses and biorelated products
 - Novel materials from biobased raw materials (polysaccharides, polypeptides, lipids, etc.)
 - Silicone bioscience and biomaterials
 - Biocatalyzed synthetic and natural polymers
2. New or improved biocatalysts (e.g., enzymes, plant, whole-cell, cell extracts)
 - Biocatalyst engineering (enzyme-engineering, metabolic pathway engineering) to prepare monomers and polymers
 - Enzyme immobilization and assembly
 - Enzyme-polymer bioconjugates
3. Enzymatic, whole cell, plant and cell-extract biotransformations
 - Biocatalytic and chemo-enzymatic routes to monomer, macromers and polymers.
 - Biocatalyzed grafting and functionalization reactions
 - Biocatalyzed hydrolysis, degradation, and remediation
4. Interactions between enzymes and surfaces that influence catalytic properties.
 - Enzyme-catalyzed surface modifications
 - Fiber bioprocessing (e.g., biopolishing)

The organizers kindly invite you to submit oral and/or poster presentations to the symposium. Abstracts and preprints are due on March 19th, 2012 and have to be submitted through the PACS website: <http://abstracts.acs.org>. Please send us a short email message if you plan to contribute. If you have questions or need further information, please feel free to contact one of the organizers.

Organizers:

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[Advances in Methods and Applications of Scanning Probe Microscopy to Polymer Materials](#) -Joint COLL/**POLY** (Dalia Yablon, Andy Tsou) - [TUTORIAL on AFM of Polymeric Materials Sunday AM](#)

244th ACS Meeting, Philadelphia PA, Aug. 19 – Aug. 23, 2012
Division of Polymer Chemistry and Division of Colloid and Surface Chemistry
Symposium on
Advances in Methods and Applications of Scanning Probe Microscopy to Polymer Materials

Organizers:

Dalia Yablon, Corporate Strategic Research, ExxonMobil Research and Engineering;

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This symposium will focus on recent research progress in both developing new SPM based methods for and novel applications of SPM methods to polymer materials. The focus of developing these new methods and utilizing these applications should be to understand mechanical, rheological, thermal, electrical, and self-assembly behavior of polymers on the nanoscale and to establish composition-processing-morphology-performance relationships of polymers, polymer blends, and composites. All SPM based methods will be considered, including traditional mechanical (phase, nanoindentation), thermal, and electrical based methods as well as more recently developed methods from single to multifrequency measurements and high speed AFM. All experimental and theoretical aspects of SPM methods developed with specific relevance to polymer materials or application of such methods to polymer materials will be discussed by a forum of researchers with various backgrounds ranging from mechanical engineering to physics, chemistry, chemical engineering, materials science, polymer physics and rheology.

Application of SPM to a wide variety of polymer materials is to be covered including amorphous and semicrystalline polymers, polymer nanocomposites, block copolymers, polymer compounds, elastomers and rubbers, impact copolymers or toughened polymers, conductive polymers, single polymer chains, etc. Of particular interest is interpretation of AFM measurements that can be related to meaningful and relevant polymer material properties.

A **tutorial** on “Basics of Theory and Instrumentation of AFM” will precede the symposium.

Session Topics include:

Nanomechanical characterization; Nano-rheological measurements with SPM; High resolution imaging; Kinetics measurements with high speed AFM; Application of Multifrequency Methods; Localized thermal analysis

Confirmed Invited Speakers Include:

Robert Carpick, University of Pennsylvania Steve Minne, Bruker Nano Systems

Yifu Ding, University of Colorado Sergei Magonov, NT-MDT

Liang Fang, Arkema Ken Nakajima, Tohoku University

Greg Haugstad, University of Minnesota Rene Overney, University of Washington

Jamie Hobbs, University of Sheffield Roger Proksch, Asylum Research

Donna Hurley, NIST Arvind Raman, Purdue University

Kevin Kjoller, Anasys Vladimir Tsukruk, Georgia Inst. of Tech

Mark Van Landingham, Army Research Lab Gil Walker, University of Toronto

Robert Magerle, Technical University of Chemnitz

Abstracts should be submitted on-line on the PACS abstract submission site:

<http://abstracts.acs.org>. Click on POLY, select this symposium topic and follow instructions to submit an abstract with 150 or less words.

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Deadline for on-line abstract (with preprint) submission is March 19, 2012

We thank the sponsors of this symposium: ExxonMobil, Asylum Research, Bruker, Anasys

A tutorial will be offered on Sunday morning, August 19th on AFM of Polymer Materials, directly preceding the symposium of “Advances in Methods and Applications of SPM to Polymer Materials.”

This tutorial is aimed at non-specialists to provide a background in AFM specifically for imaging of polymer materials. It will include an overview of AFM instrumentation and basic imaging modes (tapping mode, contact mode, force spectroscopy.) Basics of contact mechanics used to model AFM tip-sample interactions including viscoelastic models that would be relevant to polymer systems will also be reviewed. An AFM simulation tool, virtual environment for dynamic AFM (VEDA) will also be introduced. Hints for good imaging and experimental artifacts, especially those commonly observed in imaging polymer materials will be reviewed. The tutorial will end with a review of advanced imaging modes including multifrequency imaging, dynamic contact imaging and hybrid AFM methods and some challenges when trying to make quantitative mechanical measurements on polymer materials.

The tutorial will be delivered by Dalia Yablon (ExxonMobil Research and Engineering), Daniel Kiracofe and Arvind Raman (Purdue University), and Greg Haugstad (University of Minnesota.)

The tutorial is 8:30am-12:30pm, Sheraton Philadelphia City Center, Independence Ballroom D.

No advance registration required – hope to see you there!

Dalia Yablon
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Energy and Materials (Steve Clarson)

Bioconjugate Polymers II (Heather Maynard, J. Cornelissen, Roeland Nolte)

Polymers at the Interface with Biology: Opportunities in Antimicrobial Materials, Immunology, Delivery, and Imaging (Harm-Anton Klok, Greg Tew, Semra Colak)

1st ACS/Biomacromolecules Symposium on "Polymers at the Interface with Biology"

244th American Chemical Society National Meeting
Philadelphia on August 19 - 23, 2012.

Abstract and Preprint Deadline: March 19, 2012

This symposium, which is organized under the patronage of the ACS journal Biomacromolecules (<http://pubs.acs.org/journal/bomaf6>), will showcase exciting new research in selected, specific topical areas that are located at the interface between polymer science and biology. The aim of the symposium is to highlight the (possible) opportunities that polymer science offers to address challenges in each of these selected areas and/or demonstrate the (potential) implications of recent advances in each of these areas on polymer science.

The 1st ACS/Biomacromolecules Symposium on "Polymers at the Interface with Biology" will feature 4 half-day sessions that will discuss the following topics:

- Infections and infectious diseases
- Immunology
- Targeted intracellular delivery
- Imaging

CONFIRMED INVITED SPEAKERS:

Infections and infectious diseases

Prof. Justin Hanes - Johns Hopkins University
Prof. Ravi Kane - Rensselaer Polytechnic Institute
Prof. Patrick Kiser - University of Utah
Prof. Kenichi Kuroda - University of Michigan, Ann Arbor

Immunology

Prof. Tarek Fahmy - Yale University
Prof. Darrell Irvine - MIT
Prof. Steven Little - University of Pittsburgh

Targeted intracellular delivery

Prof. Mark M. Banaszak Holl - University of Michigan, Ann Arbor
Prof. Shana O. Kelley - University of Toronto
Prof. Silvia Muro - University of Maryland

Imaging

Prof. Christine Payne - Georgia Institute of Technology
Prof. Kevin Belfield - University of Central Florida
Prof. Chad Mirkin - Northwestern University

CALL FOR PAPERS:

The organizers kindly invite you to submit oral and/or poster presentations on topics that are within the

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scope of the 4 research areas of the symposium. Abstracts and preprints are due on March 19th, 2012 and have to be submitted through the PACS website: <http://abstracts.acs.org>. In case of any questions or for further information, please feel free to contact one of the organizers.

ORGANIZERS:

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Computational Polymer Modeling (Barry Farmer, Gus Bosse, Hendrik Heinz, Ellen Sun)

"Computational Modeling of Polymer"

**244th American Chemical Society National Meeting
Philadelphia on August 19 - 23, 2012.**

Abstract and Preprint Deadline: March 19, 2012

This symposium will cover a spectrum of topics on computational modeling of polymers. A special invited session will focus on the Materials Genome Initiative as it relates to polymers and soft matter.

Sessions are planned to include ab initio, molecular mechanics and dynamics, Monte Carlo, field theoretic, and mesoscale methods and their application to elucidating polymer behavior and properties for a variety of

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applications. Both synthetic and biological polymers will be covered, as will polymer composites and nanocomposites.

Experimental studies that closely couple and complement computational methods (or challenge them) are also welcome.

Confirmed Invited Speakers include (listed alphabetically): Jan Andzelm, Anna Balazs, Rick Barto, August Bosse, Charles Brooks, Jim Caruthers, Julie Christodoulou, Kris Delaney, Steve Granick, Gary Grest, Marcus Mueller, William Goddard, Yuri Gogotsi, Venkat Ganesan, Aravinda Kini, David Landau, Erik Luijten, Monica Olvera de la Cruz, Doros Theodorou, Ken Schweizer, and Qiang "David" Wang.

All paper submitted to the Division of Polymer Chemistry require a Preprint and have to be submitted through the ACS submission site.

For instruction, visit the ACS or Division of Polymer Chemistry web sites.

Please contact the Organizers for more information:

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Incorporation of Macromolecular Science/Polymeric Materials into the Foundational Course in Organic Chemistry - Joint *CHED/POLY/PMSE/Rubber/COMP* (Bob A. Howell)

General Topics: New Synthesis and Characterization of Polymers (Dana Garcia)

Polymer Science of Everyday Things - Joint *POLY/PMSE* (Robert Moore, Kenneth Wynne, Ann Beal Salamone, Dana Garcia, Lei Zhai) - **[Link to presentations.](#)**

New Developments: Engineering Materials from Carbohydrate Polymers - Joint *CELL/CARB/POLY*

Industrial Polymer Scientist Award (Tom Seery)

[DSM Polymer Technology Award](#): Advanced Polymer Networks (Travis Baughman)

ACS National Meeting Philadelphia
Tues., August 21, 2012, 1:30 pm - 4:25 pm
Independence Ballroom B
Sheraton Philadelphia City Center Hotel (Sheraton Downtown)

The DSM Polymer Technology Award Symposium is set to be held at the Philadelphia ACS Meeting.

The **theme** this year is "Advanced Polymer Networks".

Among the leading academics working at the forefront of Polymer Technology research, **Dean Webster** from North Dakota State University, Coatings and Polymeric Materials Department, will speak on "High crosslink density biobased thermosets for

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coatings and composites “, and **Ludwik Leibler**, from the School of Industrial Physics and Chemistry, Paris, (CNRS) will speak on “Chemistry and application of ketene functionalized polymers”.

The DSM Polymer Technology Award recognizes and rewards excellence in innovative PhD or post-doctoral research in polymer technology. The Award is open to new and current PhD researchers based in the USA, and nominated research must relate to the published theme of that year’s award.

The four finalists this year are: Brian Adzima, University of Colorado at Boulder, Andrew Davis, University of Massachusetts, Amherst, Frank Leibfarth, University of California Santa Barbara, and Peiwen Zheng, University of Massachusetts, Amherst.

The judging committee will make their selection from the four finalists during the ACS Meeting and the winner will be announced at the ACS POLY Award Reception on Wednesday, August 22. The winner receives a cash prize of \$2,000.

AkzoNobel for Outstanding Graduate Research

POLY/PMSE Plenary Lecture & Awards Reception (Sheng Gibson-Lin, Jeff Youngblood, Scott Iacono)