Dear Colleagues,

Welcome to the 2021 APS March Meeting Division of Polymer Physics (DPOLY) program. This program guide summarizes the DPOLY Special Events and lists all of the Invited and Focus sessions with their hyperlinks and their invited speakers. This year’s program is special with its 8 Invited and 48 DPOLY sponsored Focus Sessions and 4 Award Sessions. I would like to thank all the session organizers for their help in forming the first virtual meeting program. Thank you!!! Here are some highlights of our meeting.

This year’s Polymer Physics Award recipient, Samson Jenekhe, will speak on Tuesday morning at 9:12 am. Our 2020 Dillon Medal Recipient, Rodney Priestley will give his talk on Monday afternoon at 3:00 pm. Our 2021 Dillon Medal Recipient, Bryan Boudouris will give his talk on Tuesday afternoon at 3:00 pm. Our graduate student award session, the Padden Symposium, will be held on Tuesday midday, 11:30 am-2:30 pm. The first virtual DPOLY poster session will be held on Wednesday between 11:15 am-2:15 pm. The poster competition will be run by Bradley Olsen. We will be able to watch the 5-minute videos before meeting the poster presenters. Please note all the times mentioned in this program are in Central Daylight Time.

DPOLY is hosting 3 tables at the “Student Chat with the Experts” on Tuesday from 12:30 pm-2:00 pm. Students will chat with Zahra Fakhraai, Jan Genzer and Sanat K. Kumar. This is a great opportunity for new and senior student members to meet with the experts on polymer nanocomposites, polymer glasses and polymer interfaces.

The DPOLY Short Course “Macromolecular Engineering of Formulations” is focused on progress, challenges, and opportunities underlying macromolecules engineering of formulations used as foods, cosmetics, pharmaceuticals, inks, paints, and coatings. Special thanks to the organizers, Vivek Sharma and Thomas O’Connor.

We will use the SpatialChat platform for the DPOLY reception and all networking events. Please use the same link for all DPOLY Networking Sessions in the program.

Lastly, we have Invited and Focus Sessions on machine learning (B01, C04, E03, L63), broadband dielectric spectroscopy (F01), sustainable polymers (A08), optics and photonics in polymers (R64, X03), rheology (P03, V04, Y08), 101 years of polymer science (A01) and many more new Focus topic sessions. I hope that you will enjoy this year’s program.

I look forward to meeting you in-person at the 2022 March Meeting in Chicago. Stay well and healthy!

Sincerely,

Pinar Akcora
2021 APS March Meeting DPOLY Program Chair
Associate Professor of Chemical Engineering & Materials Science
Stevens Institute of Technology

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DPOLY SPECIAL EVENTS
(all times are Central)

DPOLY Reception
Sunday March 14, at 3pm CDT = 1pm PDT = 9pm CET (Europe)

DPOLY Asia Reception
Wednesday, March 17, 5:00pm Japan (JST, UTC+9)

https://spatial.chat/s/dpoly-march?sp=macromolecules

The main program link:
https://marchmeeting2021.onlineeventpro.freeman.com/

DPOLY Award Lectures

Polymer Physics Prize
Samson Jenekhe
E01.00003: Polymer Physics Prize (2021): Polymer-Based Photovoltaics
Tuesday, March 16, 9:12am – 9:48am

2020 Dillon Medal
Rodney Priestley
C01.00001: John H. Dillon Medal (2020): Thermorheological Complexity at Polymer Surfaces
Monday, March 15, 3:00pm – 3:36pm

2021 Dillon Medal
Bryan Boudouris
J63.00001: John H. Dillon Medal (2021): Radicalizing Organic Electronics with Polymer Physics
Tuesday, March 16, 3:00pm – 3:36pm

Padden Award Symposium - Session F63
Tuesday, March 16, 11:30am – 1:18pm

DPOLY Business Meeting
K02. Interactive DPOLY Business Meeting
Tuesday, March 16, 6:15pm – 7:15pm
NSF Polymers Q&A session
K62. Interactive NSF Polymers Q&A Session
   Andy Lovinger and Bryan Boudouris
   Tuesday, March 16, 7:15pm – 8:15pm

Student Chat with the Experts
   Tuesday, March 16 12:30pm – 2:00pm
   Zahra Fakhraai, Topic: polymer glasses
   Jan Genzer, Topic: polymers at surfaces and interfaces
   Sanat K. Kumar, Topic: polymer nanocomposites

DPOLY Hallway Networking
   Monday – Friday 11:00am – 2:30pm
   Monday – Thursday 5:30 – 7:00pm
   https://spatial.chat/s/dpoly-march?sp=macromolecules

Early Career Social Hour
   Wednesday, March 17, 6:00pm - 8:00pm
   https://spatial.chat/s/dpoly-march?sp=macromolecules

The main program link:
https://marchmeeting2021.onlineeventpro.freeman.com/
Saturday-Sunday, March 13-14, 2021 8:30 am – 3:15 pm

DPOLY Short Course: Macromolecular Engineering of Formulations I – II
Organizers: Vivek Sharma, University of Illinois at Chicago; Thomas O’Connor, Sandia National Lab

Saturday, March 13
Session 1: 8:30am – 10:00am, Session 2: 10:30am – 12:00pm, Session 3: 1:00pm – 2:30pm

Jon DeGroot, Dow, “From Materials Research to Commercialization: Applications of Polymer Physics in Industry”
Arthi Jayaraman, University of Delaware, “Molecular Modeling and Simulation of Macromolecular Materials”
Hy Bui, L’Oreal, “Advances in Cosmetic Formulations”
Michelle Seitz, DSM, “Industrial Adhesion Testing: Between the Perfect and the Practical”
Tim Lodge, University of Minnesota, “Methylcellulose Solutions, Fibrils and Gels”
Lynn M. Walker, Carnegie Mellon University, “Interfacial processing and engineering of multicomponent adsorption at fluid-fluid interfaces”

Networking Session: 2:30pm – 3:15pm

Sunday, March 14
Session 1: 8:30am – 10:00am, Session 2: 10:30am – 12:00pm, Session 3: 1:00pm – 2:30pm

Matt Tirrell, University of Chicago, “Polyelectrolyte complexes and polypeptides in biomedical applications”
Peter Fischer, ETH Zurich, “Improved biopolymer processing and some polymer physical considerations”
Stefan Baier, Motif Foodworks, “Enabling the Rational Design of Foods and Beverages - Insights from in-vitro oral processing analytics”
Eugene Pashkovski, Lubrizol, “Polymer Additives in Lubricants”
Lynden Archer, Cornell University, “Polymeric Materials in Electrochemical Energy Conversion”
Ronald Larson, University of Michigan, “Industrial Strength Rheology: Multi-Scale Modelling of Polymers, Colloids, and Surfactant Solutions”

Networking Session: 2:30pm – 3:15pm
Monday, March 15, 2021 8:00 am – 11:00 am

Invited Session A01: 101 Years of Polymer Science
Sponsoring Units: DPOLY
Chair: Connie Roth, Emory University

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Invited Speaker</th>
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<tbody>
<tr>
<td>Monday, March 15</td>
<td>A01.00001: Block Polymers: Extraordinary Consequences of a Few Covalent Bonds</td>
<td>Frank Bates</td>
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<td>8:00AM - 8:36AM</td>
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<tr>
<td>Monday, March 15</td>
<td>A01.00002: Computer Simulations of Entangled Polymer Melts: From Segmental Dynamics to Viscoelastic Response</td>
<td>Gary Grest</td>
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<td>8:36AM - 9:12AM</td>
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<tr>
<td>Monday, March 15</td>
<td>A01.00003: Application of Polymer Physics to tissue viscoelasticity: Entangled active matter</td>
<td>Francoise Brochard-Wyart</td>
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<td>9:12AM - 9:48AM</td>
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<td>Monday, March 15</td>
<td>A01.00004: Progress in understanding entangled polymer dynamics</td>
<td>Scott Milner</td>
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<td>9:48AM - 10:24AM</td>
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<td>Monday, March 15</td>
<td>A01.00005: Polymers Science in Modeling Mushy, Squishy Systems</td>
<td>Anna Balazs</td>
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<td>10:24AM - 11:00AM</td>
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Monday, March 15, 2021 8:00 am – 11:00 am

Focus Session A02: Polymer Nanocomposites: Dynamics

Sponsoring Units: DPOLY DSOFT GSNP
Chair: Shiwang Cheng, Michigan State University

Monday, March 15, 2021
8:36AM - 9:12AM
Live
A02.00004: Nanoparticle Structure and Dynamics in Polymer Nanocomposites
Invited Speaker: Michael Hore

Monday, March 15, 2021
10:00AM - 10:36AM
Live
A02.00009: Structure and dynamics of polymer nanocomposites with different interactions
Invited Speaker: Anne-Caroline Genix

Focus Session A03: Confinement, Dynamics, and Ion Interactions in Ion-Containing Polymers I

Sponsoring Units: DPOLY DSOFT
Chair: Moon Park, Pohang Univ of Sci & Tech

Monday, March 15, 2021
10:00AM - 10:36AM
On Demand
A03.00011: Mechanisms of Ion Transport in Polymeric Ionic Liquids
Invited Speaker: Venkatraghavan Ganesan

Focus Session A04: Dynamic Polymer Networks I

Sponsoring Units: DPOLY DSOFT
Chair: Svetlana Sukhishvili, Texas A&M University

Monday, March 15, 2021
10:24AM - 11:00AM
Live
A04.00013: Toward understanding the (scale-dependent) dynamics in non-covalent polymer networks
Invited Speaker: Annette Schmidt

Focus Session A08: Sustainable Polymers: Fundamental Properties, Applications, and Design for End-of-Life

Sponsoring Units: DPOLY
Chairs: Megan Robertson, University of Houston; Joe Stanzione, Rowan University

Monday, March 15, 2021
8:36AM - 9:12AM
Live
A08.00004: Dynamic covalent polymer networks and network composites: Excellent cross-link density recovery and elevated-temperature creep resistance after multiple recycling steps
Invited Speaker: John Torkelson

Monday, March 15, 2021
9:48AM - 10:24AM
Live
A08.00008: From Biomass Waste to Performance-Advantaged Materials: Structure-Property Relationships in Lignin-Based Polymers
Invited Speaker: Thomas Epps
**Monday, March 15, 2021 11:30 am – 2:30 pm**

**Invited Session B01: Machine Learning and Data in Polymer Physics**

Sponsoring Units: DPOLY  
Chair: Debra Audus, National Institute of Standards and Technology

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<tr>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>11:30AM - 12:06PM</td>
<td><strong>B01.00001</strong>: Recent Advances on AI for Polymer Design</td>
<td>Invited Speaker: Juan De Pablo</td>
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<tr>
<td>12:06PM - 12:42PM</td>
<td><strong>B01.00002</strong>: DATA CENTRIC NANOCOMPOSITES DESIGN VIA MIXED-VARIABLE BAYESIAN OPTIMIZATION</td>
<td>Invited Speaker: Wei Chen</td>
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<tr>
<td>12:42PM - 1:18PM</td>
<td><strong>B01.00003</strong>: Optimization of organic molecules and macromolecules using machine learning</td>
<td>Invited Speaker: Yaroslava Yingling</td>
</tr>
<tr>
<td>1:18PM - 1:54PM</td>
<td><strong>B01.00004</strong>: Molecular Simulations Integrated Machine Learning Study of Bottlebrush Polymers</td>
<td>Invited Speaker: Sanket Deshmukh</td>
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<td>1:54PM - 2:30PM</td>
<td><strong>B01.00005</strong>: Polymer Informatics: Current Status &amp; Critical Next Steps</td>
<td>Invited Speaker: Rampi Ramprasad</td>
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Monday, March 15, 2021 11:30 am – 2:30 pm

Focus Session B02: Polymer Structure Formation and Dynamics in Solution I: Structure and Assembly
Sponsoring Units: DPOLY GSNP DBIO
Chair: Svetlana Morozova, Case Western Reserve University

Monday, March 15, 2021
12:30PM - 1:06PM
Live
B02.00006: Equilibration and Dynamics in Block Copolymer Micelles
Invited Speaker: Timothy Lodge

Focus Session B03: Polymer Nanocomposites: Surfaces and Interfaces
Sponsoring Units: DPOLY DSOFT GSNP
Chairs: Shiwang Cheng, Michigan State University; Robert Hickey, University of Pennsylvania

Monday, March 15, 2021
12:30PM - 1:06PM
Live
B03.00006: The Critical Role of the Interfacial Layer in Polymer Nanocomposites
Invited Speaker: Alexei Sokolov

Focus Session B04: Membrane-Based Separation Processes
Sponsoring Units: DPOLY
Chair: Venkat Padmanabhan, Tennessee Tech University

Monday, March 15, 2021
12:30PM - 1:06PM
Live
B04.00006: A top-down and bottom-up strategy to generate free volume for membrane-based gas separations
Invited Speaker: Zachary Smith
Monday, March 15, 2021 3:00 pm – 6:00 pm

Session C01: 2020 Dillon Medal Symposium
Sponsoring Units: DPOLY
Chair: Richard Register, Princeton University

Monday, March 15, 2021
3:00PM - 3:36PM
Live
C01.00001: John H. Dillon Medal (2020): Thermorheological Complexity at Polymer Surfaces
Invited Speaker: Rodney Priestley

Focus Session C02: Responsive Polymers, Soft Materials, and Hybrids I
Sponsoring Units: DPOLY DSOFT DBIO
Chair: Jinhye Bae, University of California, San Diego

Monday, March 15, 2021
3:12PM - 3:48PM
Live
C02.00002: Adaptable hydrogels for organoid culture
Invited Speaker: Sarah Heilshorn

Focus Session C03: Morphology Characterization: Frontier of Scattering and Microscopy
Sponsoring Units: DPOLY GSNP DBIO
Chair: Xiaodan Gu, University of Southern Mississippi; Cheng Wang, Lawrence Berkeley National Lab

Monday, March 15, 2021
3:36PM - 4:12PM
Live
C03.00004: Combining Advanced Experimental Methods to Characterization of Polymer Nanocomposites
Invited Speaker: Karen Winey

Monday, March 15, 2021
5:00PM - 5:36PM
Live
C03.00009: Polymer morphology measurement by Polarized Resonant Soft X-ray Scattering
Invited Speaker: Dean DeLongchamp

Focus Session C04: Machine Learning for Biomolecular Design and Simulation
Sponsoring Units: DPOLY DBIO DCOMP GSNP
Chair: Stefano Martiniani, University of Minnesota

Monday, March 15, 2021
3:12PM - 3:48PM
Live
C04.00002: Learning molecular models from simulation and experimental data
Invited Speaker: Cecilia Clementi

Monday, March 15, 2021
5:00PM - 5:36PM
C04.00009: Prospective experimental validation of machine learning for biological sequence design
Invited Speaker: Lucy Colwell
Monday, March 15, 2021 3:00 pm – 6:00 pm

Session C08: Physics and Chemistry of Polymer 3D Printing
Sponsoring Units: DPOLY DSOFT GSNP DFD
Chair: Jinhye Bae, University of California, San Diego; Anthony Kotula, NIST

Monday, March 15, 2021
4:00PM - 4:36PM
Live

C08.00006: Material physics and metrology of material extrusion additive manufacturing
Invited Speaker: Jonathan E Seppala

Monday, March 15, 2021
5:24PM - 6:00PM

C08.00011: Chemical and Engineering Approaches for Soft Material Additive Manufacturing
Invited Speaker: Andrew Boydston
Tuesday, March 16, 2021 8:00 am – 11:00 am

Session E01: Polymer Physics Prize Symposium 2021
Sponsoring Units: DPOLY
Chair: Shaoyi Jiang, Cornell University

Tuesday, March 16, 2021
8:00AM - 8:36AM
Live
E01.00001: Magneto-optical Materials and Polymers: Determining Structure Property Relationships
Invited Speaker: Timothy Swager

Tuesday, March 16, 2021
8:36AM - 9:12AM
Live
E01.00002: High-Efficiency Organic Solar Cells Based on Polymer Donors: The Impact of Non-Fullerene Acceptors
Invited Speaker: Jean-Luc Bredas

Tuesday, March 16, 2021
9:12AM - 9:48AM
Live
E01.00003: Polymer Physics Prize (2021): Polymer-Based Photovoltaics
Invited Speaker: Samson Jenekhe

Tuesday, March 16, 2021
9:48AM - 10:24AM
Live
E01.00004: Programmable Biologic Drug Delivery using Electrostatic Polymer Assembly
Invited Speaker: Paula Hammond

Tuesday, March 16, 2021
10:24AM - 11:00AM
E01.00005: Skin-inspired Organic Electronics
Invited Speaker: Zhenan Bao
Tuesday, March 16, 2021 8:00 am – 11:00 am

Focus Session E02: Developments in Reflectivity for Thin Film Characterization
Sponsoring Units: DPOLY DBIO DSOFT
Chair: Daniel Sunday, National Institute of Standards and Technology

Tuesday, March 16, 2021
8:00AM - 8:36AM

E02.00001: Solvent vapor annealing of diblock copolymer thin films with a solvent mixture
Invited Speaker: Christine Papadakis

Tuesday, March 16, 2021
9:24AM - 10:00AM

E02.00006: Information Content and Experimental Design in Neutron Reflectometry
Invited Speaker: Frank Heinrich

Focus Session E03: Machine Learning and Data in Polymer Physics I
Sponsoring Units: DPOLY DBIO DCOMP GSNP
Chair: Debra Audus, National Institute of Standards and Technology

Focus Session E04: Polymers Under Dynamic Environmental Conditions
Sponsoring Units: DPOLY DCP GSCCM
Chair: Nir Goldman, LLNL; Christian Pester, Pennsylvania State University

Tuesday, March 16, 2021
8:12AM - 8:48AM
Live

E04.00002: Shock-induced chemistry and chain relaxation dynamics via molecular dynamics
Invited Speaker: Alejandro Strachan

Tuesday, March 16, 2021
10:24AM - 11:00AM
Live

E04.00011: Relaxation and transport of polymer chains on surfaces during electrospray deposition
Invited Speaker: Chinedum Osuji

Focus Session E08: Structure and Dynamics of Charged Polymers
Sponsoring Units: DPOLY DSOFT DCOMP DBIO
Chair: Charles Collier, Oak Ridge National Lab; Bradley Lokitz, Oak Ridge National Lab

Tuesday, March 16, 2021
9:36AM - 10:12AM

E08.00009: Controlling the Properties of Ion Containing Polymers, Hydrogels and Membranes
Invited Speaker: Monica Olvera De La Cruz
Tuesday, March 16, 2021 11:30 am – 2:30 pm
Invited Session F01: Broadband Dielectric Spectroscopy and its Applications in Materials Research
Sponsoring Units: DPOLY
Chair: Joshua Sangoro, University of Tennessee

Tuesday, March 16, 2021 11:30AM - 12:06PM
Live
F01.00001: Density scaling and isochronal superposition in liquids -- combining neutrons and dielectric spectroscopy
Invited Speaker: Kristine Niss

Tuesday, March 16, 2021 12:06PM - 12:42PM
Live
F01.00002: How macromolecules penetrate narrow pores
Invited Speaker: George Floudas

Tuesday, March 16, 2021 12:42PM - 1:18PM
Live
F01.00003: Interfacial dynamics and mechanics of polymer nanocomposites through broadband dielectric spectroscopy and rheology
Invited Speaker: Shiwang Cheng

Tuesday, March 16, 2021 1:18PM - 1:54PM
Live
F01.00004: Applications of Linear and Nonlinear Dielectric Spectroscopy
Invited Speaker: Ranko Richert

Tuesday, March 16, 2021 1:54PM - 2:30PM
Live
F01.00005: Molecular Dynamics of Janus Polynorbornenes: Glass transitions and Nanophase separation
Invited Speaker: Andreas Schoenhals
Focus Session F02: Polyelectrolyte Complexation I
Sponsoring Units: DPOLY DSOFT
Chairs: Samanvaya Srivastava, University of California; Debra Audus, National Institute of Standards of Technology

Tuesday, March 16, 2021
11:54AM - 12:30PM
Live
F02.00003: Charge density and solvent effects on polyelectrolyte complexation
Invited Speaker: Matthew Tirrell

Tuesday, March 16, 2021
12:42PM - 1:18PM
Live
F02.00005: Concentration and separation of proteins using polyion condensates
Invited Speaker: Saskia Lindhoud

Focus Session F03: Polymer Nanocomposites: Structure and Property
Sponsoring Units: DPOLY DSOFT
Chair: Robert Hickey, Pennsylvania State University

Tuesday, March 16, 2021
12:30PM - 1:06PM
Live
F03.00006: Molecular Dynamics Simulations of Polymer-Grafted Nanoparticle Monolayers
Invited Speaker: Lisa M. Hall

Focus Session F04: Organic Electronics I
Sponsoring Units: DPOLY FIAP DMP
Chairs: Stephanie Lee, New York University; Takuji Adachi, Univ of Geneva

Tuesday, March 16, 2021
11:30AM - 12:06PM
Live
F04.00001: First-Principles Theory for Understanding Excitons in Stacked Organic Assemblies
Invited Speaker: Sahar Sharifzadeh

Tuesday, March 16, 2021
1:18PM - 1:54PM
Live
F04.00008: Resonant Tender X-ray Diffraction for Disclosing the Molecular Packing of Paracrystalline Conjugated Polymer Films
Invited Speaker: Christopher McNeill

Session F64: Polymeric Networks, Elastomers and Gels
Sponsoring Units: DPOLY GSNP DSOFT
Chair: Bradley Olsen, Massachusetts Institute of Technology MIT
Tuesday, March 16, 2021 11:30 am – 2:30 pm

Session F63: Padden Award Symposium

Sponsoring Units: DPOLY
Chair: Mahesh Mahanthappa, University of Minnesota

Tuesday, March 16, 2021 11:30AM - 11:42AM
Live
F63.00001: All-Atom Molecular Dynamics Simulations of the Temperature Response of Densely Grafted Polyelectrolyte Brushes
Harnoor Sachar, Bhargav Chava, Turash Pial, Siddhartha Das

Tuesday, March 16, 2021 11:42AM - 11:54AM
Live
F63.00002: In Situ Monitoring Polymer Imbibition in Nanopores by Nanodielectric Spectroscopy
Chien-Hua Tu, Hans-Juergen Butt, George Floudas

Tuesday, March 16, 2021 11:54AM - 12:06PM
Live
F63.00003: Coupled effects of concentration and chain architecture on non-equilibrium polymer solution dynamics
Charles Young, Yuecheng Zhou, Charles M Schroeder, Charles E. Sing

Tuesday, March 16, 2021 12:06PM - 12:18PM
Live
F63.00004: Molecular origin of strain-induced chain alignment in PDPP-based semiconducting polymers
Song Zhang, Amirhadi Alesadi, Mariia Selivanova, Wenjie Xia, Simon Rondeau-Gagne, Xiaodan Gu

Tuesday, March 16, 2021 12:18PM - 12:30PM
Live
F63.00005: Percolated aggregates in precise sulfophenylated polyethylenes: Designing pathways to facilitate proton and ion transport
Benjamin Paren, Bryce Thurston, Manuel Maréchal, Arjun Kanthawar, Justin G Kennemur, Mark J Stevens, Amalie Frischknecht, Karen Winey

Tuesday, March 16, 2021 12:30PM - 12:42PM
Live
F63.00006: Sol-gel transition of loopy polymer networks
Tzyy-Shyang Lin, Rui Wang, Bradley Olsen

Tuesday, March 16, 2021 12:42PM - 12:54PM
Live
F63.00007: Direct Observation of Block CopolymerMicelle Fragmentation
Julia Early, Alison Block, Kevin G. Yager, Timothy Lodge

Tuesday, March 16, 2021 12:54PM - 1:06PM
Live
F63.00008: Revisiting packing frustration and strong-segregation stability of double-gyroid in block copolymer melts
Abhiram Reddy, Gregory M Grason

Tuesday, March 16, 2021 1:06PM - 1:18PM
Live
F63.00009: Exploring the Rich Phase Space of Asymmetric Copolymer Blends
Aaron Lindsay, Andreas J. Mueller, Austin J. Peterson, Mahesh Mahanthappa, Timothy Lodge, Frank Bates
Tuesday, March 16, 2021 3:00 pm – 6:00 pm

Session J63: 2021 Dillon Medal Symposium
Sponsoring Units: DPOLY
Chair: Rachel Segalman, University of California, Santa Barbara

Tuesday, March 16, 2021
3:00PM - 3:36PM
Live

J63.00001: John H. Dillon Medal (2021): Radicalizing Organic Electronics with Polymer Physics
Invited Speaker: Bryan Boudouris

Focus Session J02: Dynamics of Polymers Under Confinement
Sponsoring Units: DPOLY DSOFT DCP
Chair: Robert Riggleman, University of Pennsylvania

Tuesday, March 16, 2021
5:00PM - 5:36PM
Live

J02.00011: Mobility Gradient of Polymer Chains in an Interfacial Region with a Solid
Invited Speaker: Keiji Tanaka

Focus Session J03: Responsive Polymers, Soft Materials, and Hybrids II
Sponsoring Units: DPOLY DSOFT DBIO
Chair: Matthew Green, Arizona State University

Tuesday, March 16, 2021
3:36PM - 4:12PM
Live

J03.00004: Controlled tough responsive tissue adhesion
Invited Speaker: Jianyu Li

Focus Session J04: Dynamic Polymer Networks II
Sponsoring Units: DPOLY DSOFT
Chair: Christopher Evans, University of Illinois at Urbana-Champaign
**Wednesday, March 17, 2021 8:00 am – 11:00 am**

**Invited Session L15: Fantastic Polyelectrolytes and How They Behave in Coacervates**

Sponsoring Units: DPOLY  
Chair: Michael Rubinstein, Duke University

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<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>Wednesday, March 17, 2021 8:00AM - 8:36AM</td>
<td>L15.00001: Structure and Dynamics of Polyelectrolyte Solutions and Coacervates</td>
<td>Ralph Colby</td>
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<td>Wednesday, March 17, 2021 8:36AM - 9:12AM</td>
<td>L15.00002: Phase Behavior and Viscoelasticity of Polyelectrolyte Coacervates Above the Binodal</td>
<td>Jennifer Laaser</td>
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<tr>
<td>Wednesday, March 17, 2021 9:12AM - 9:48AM</td>
<td>L15.00003: Entanglements between Polyelectrolytes in Solutions</td>
<td>Carlos Lopez</td>
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<td>Wednesday, March 17, 2021 9:48AM - 10:24AM</td>
<td>L15.00004: Structure and Rheology of Polyelectrolyte Complex Coacervates</td>
<td>Amanda Marciel</td>
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<td>Wednesday, March 17, 2021 10:24AM - 11:00AM</td>
<td>L15.00005: Fantastic Viscoelastic Saloplastic</td>
<td>Joseph Schlenoff</td>
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Wednesday, March 17, 2021 8:00 am – 11:00 am

Focus Session L02: Polymers with Special Architectures: From Molecular Design to Physical Properties
Sponsoring Units: DPOLY DSOFT
Chair: Keiji Tanaka, Kyushu University; Reika Katsumata, University of Massachusetts Amherst

Wednesday, March 17, 2021
8:00AM - 8:36AM  L02.00001: Rigid cyclic chains in solution: cyclic amylose carbamate derivatives
Invited Speaker: Ken Terao

Wednesday, March 17, 2021
10:24AM - 11:00AM  L02.00011: Tuning Adsorption using Entropy to Alter Structure, Diffusion, and Swelling in Thin Polymer Films
Invited Speaker: Bulent Akgun

Focus Session L03: Hierarchical Structural Emergence in Elastomer Nanocomposites: Dispersion, Dynamics, Structure, Modeling, and Simulation
Sponsoring Units: DPOLY DSOFT
Chair: Greg Beaucage, University of Cincinnati

Wednesday, March 17, 2021
8:00AM - 8:36AM  L03.00001: Polymer – nanocomposites at rest and under deformation: structure of the nanofillers, conformation of the chains, and related mechanical reinforcement.
Invited Speaker: François Boué

Focus Session L04: Organic Electronics II
Sponsoring Units: DPOLY FIAP DMP
Chair: Takuji Adachi, Univ of Geneva; Stephanie Lee, New York University

Wednesday, March 17, 2021
8:24AM - 9:00AM  L04.00003: Understanding organic materials formation using in situ transient absorption spectroscopy
Invited Speaker: Cathy Wong

Focus Session L63: Machine Learning and Data in Polymer Physics II
Sponsoring Units: DPOLY DCOMP DBIO GSNP
Chair: Jonathan Whitmer, University of Notre Dame

Wednesday, March 17, 2021
10:12AM - 10:48AM  L63.00012: Gaussian Processes and Deep Learning for Experimental Data
Invited Speaker: Daniela Ushizima

Focus Session L64: Non-linear Polymers, Nanocomposites and Blends
Sponsoring Units: DPOLY
Chair: Erkan Senses, Koc University

Wednesday, March 17, 2021
8:00AM - 8:36AM  L64.00001: From Single-Chain Nano-Particles to All-Polymer Nano-Composites
Invited Speaker: Arantxa Arbe
Wednesday, March 17, 2021
9:24AM - 10:00AM  
Live  
L64.00006: Influence of Polymer Topology on Glass-Formation  
Invited Speaker: Jack Douglas

Wednesday, March 17, 2021 11:15 am – 2:15 pm

M71 DPOLY Poster Session
Wednesday, March 17, 2021 3:00 pm – 6:00 pm

**Invited Session P64: Revealing the Microscopic Dynamics Driving Nonlinear Polymer Flows**
Sponsoring Units: DPOLY
Chair: Emanuela Del Gado, Georgetown University

- **Wednesday, March 17, 2021**
  - 3:00PM - 3:36PM
    - Live
    - **P64.00001: Threading-Unthreading Transition of Linear-Ring Polymer Blends in Extensional Flow**
      - Invited Speaker: Qian Huang

- **Wednesday, March 17, 2021**
  - 3:36PM - 4:12PM
    - Live
    - **P64.00002: Simulating the Far-From-Equilibrium Dynamics and Elongational Rheology of Architecturally Diverse Polymer Melts**
      - Invited Speaker: Thomas O'Connor

- **Wednesday, March 17, 2021**
  - 4:12PM - 4:48PM
    - Live
    - **P64.00003: Polymer Scission in Contraction Flows**
      - Invited Speaker: Peter Olmsted

- **Wednesday, March 17, 2021**
  - 4:48PM - 5:24PM
    - Live
    - **P64.00004: Self-Healing Recovery and Dynamics of Associating Polymers under Uniaxial Extension**
      - Invited Speaker: Nicolas Alvarez

- **Wednesday, March 17, 2021**
  - 5:24PM - 6:00PM
    - Live
    - **P64.00005: Evidence of Flow-Induced Crystallization in Material Extrusion Additive Manufacturing**
      - Invited Speaker: Anthony Kotula
Wednesday, March 17, 2021 3:00 pm – 6:00 pm

**Focus Session P02: Non-Equilibrium and Process-Dependent Mesoscale Structures of Polymeric Compounds**

Sponsoring Units: DPOLY DSOFT
Chairs: Michael Hore, Case Western Reserve University; Svetlana Morozova, Case Western Reserve University

Wednesday, March 17, 2021
3:48PM - 4:24PM  
Live  
P02.00005: Process-directed self-assembly of copolymer materials  
invited Speaker: Marcus Mueller

Wednesday, March 17, 2021
5:24PM - 6:00PM  
Live  
P02.00011: Processing Path-Dependent Complex Micelle Packings of Hydrated Small Molecule Amphiphiles  
invited Speaker: Mahesh Mahanthappa

**Focus Session P03: Dynamics and Rheology of Polymers and Polyelectrolytes I**

Sponsoring Units: DPOLY DSOFT GSNP DBIO
Chair: Vivek Sharma, University of Illinois at Chicago

Wednesday, March 17, 2021
4:48PM - 5:00PM  
P03.00010: Dynamics and Rheology of Polymers and Polyelectrolytes  
invited Speaker: Jan Vermant

**Focus Session P04: Mechanics and Dynamics of Polymers Under Confinement**

Sponsoring Units: DPOLY DSOFT
Chair: Robert Riggleman, University of Pennsylvania

Wednesday, March 17, 2021
3:24PM - 4:00PM  
Live  
P04.00003: Alteration of mechanical properties in polymer films under nanoconfinement  
invited Speaker: Yunlong Guo

**Focus Session P63: Confinement, Dynamics, and Ion Interactions in Ion-Containing Polymers II**

Sponsoring Units: DPOLY DSOFT
Chair: Moon Park, Pohang Univ of Sci & Tech; Chang Yun, Pohang Univ of Sci & Tech

Wednesday, March 17, 2021
5:24PM - 6:00PM  
Live  
P63.00013: Hydroxide conducting block copolymers  
invited Speaker: Yossef Elabd
Thursday, March 18, 2021 8:00 am – 11:00 am

Focus Session R02: Molecular Glasses and Liquids
Sponsoring Units: DPOLY DSOFT DCP DMP
Chair: Mark Ediger, University of Wisconsin – Madison

Thursday, March 18, 2021 8:00AM - 8:36AM
Live
R02.00001: Physical properties of ultrastable computer-generated glasses.
Invited Speaker: Ludovic Berthier

Focus Session R03: Polymer Crystals and Crystallization I
Sponsoring Units: DPOLY DSOFT DMP
Chair: Christopher Li, Drexel Univ

Thursday, March 18, 2021 8:12AM - 8:48AM
Live
R03.00002: Flow-Induced Crystallization of Polymers during Multi-Axial Deformation
Invited Speaker: Liangbin Li

Focus Session R04: Polymers and Block Copolymers at Interfaces I
Sponsoring Units: DPOLY DSOFT
Chair: Reza Foudazi, New Mexico State University

Thursday, March 18, 2021 8:12AM - 8:48AM
Live
R04.00002: Polymer Lung Surfactant: A Therapeutic Candidate for ARDS Developed via Polymer Physics Research
Invited Speaker: You-Yeon Won

Focus Session R63: Self-Assembly in Polymer Blends and Nanocomposites
Sponsoring Units: DPOLY
Chair: Gregory Doerk, Brookhaven National Laboratory

Thursday, March 18, 2021 9:36AM - 10:12AM
Live
R63.00009: Tuning Nanostructure and Mechanical Properties in Polymer Materials via Reaction-Induced Phase Transitions
Invited Speaker: Robert Hickey

Focus Session R64: Optics and Photonics in Polymers and Soft Matter I: Imaging, Characterization and Patterning
Sponsoring Units: DPOLY DSOFT DBIO DAMOP
Chairs: Chaitanya Ullal, Renesselaer Polytechnic Inst.; Danielle Mai, Stanford Univ

Thursday, March 18, 2021 9:48AM - 10:24AM
Live
R64.00010: Visualizing and controlling polymer nanostructures through in situ optical imaging and synthesis
Invited Speaker: Muzhou Wang
Thursday, March 18, 2021 11:30 am – 2:30 pm

Invited Session S01: Non-equilibrium Dynamics of Film Formation During Drying

Sponsoring Units: DPOLY
Chair: Gary Grest, Sandia National Laboratories

Thursday, March 18, 2021
11:30AM - 12:06PM
Live

S01.00001: Stratification in Drying Colloidal and Polymer Films
Invited Speaker: Shengfeng Cheng

Thursday, March 18, 2021
12:06PM - 12:42PM
Live

S01.00002: Stratification in Drying Colloidal Films: A competition between diffusion, evaporation and diffusiophoresis
Invited Speaker: Alexander Routh

Thursday, March 18, 2021
12:42PM - 1:18PM
Live

S01.00003: The role of hydrodynamic interactions in models and simulations of drying
Invited Speaker: Michael Howard

Thursday, March 18, 2021
1:18PM - 1:54PM
Live

S01.00004: Sandwich Layering in Binary Colloidal Films During Evaporative Drying
Invited Speaker: Surita Bhatia
Thursday, March 18, 2021 11:30 am – 2:30 pm

**Focus Session S02: Molecular and Ion Transport in Polymers**
Sponsoring Units: DPOLY DSOFT DBIO GSNP  
Chair: Vera Bocharova, Oak Ridge National Laboratory

- Thursday, March 18, 2021 11:42AM - 12:18PM  
  Live  
  S02.00002: Li⁺ Ion Migration in Polymer Electrolytes: How Coordination Effects Control Li⁺ Transport Mechanisms  
  Invited Speaker: Monika Schönhoff

- Thursday, March 18, 2021 1:54PM - 2:30PM  
  Live  
  S02.00011: Understanding Gas Transport in Polymer-Grafted Nanoparticle Assemblies  
  Invited Speaker: Sanat Kumar

**Focus Session S03: Dynamics of Polymers and Electrolytes in Bulk and in Confinement**
Sponsoring Units: DPOLY GERA  
Chairs: Naresh Osti, Oak Ridge National Lab; Laura-Rox Stingaciu, Oak Ridge National Lab

- Thursday, March 18, 2021 11:30AM - 12:06PM  
  Live  
  S03.00001: Neutron Scattering Derives Insights into Dynamics of Functional Materials  
  Invited Speaker: BORIS DYATKIN

- Thursday, March 18, 2021 1:54PM - 2:30PM  
  Live  
  S03.00011: Ionic relaxation in ‘Solvent-in-Salt’ electrolytes  
  Invited Speaker: Ivan Popov

**Focus Session S04: Topological Effects in Soft Matter**
Sponsoring Units: DPOLY DSOFT DBIO DCOMP  
Chairs: Petro Maksymovych; Rajeev Kumar, Oak Ridge National Laboratory

- Thursday, March 18, 2021 11:54AM - 12:30PM  
  Live  
  S04.00003: Nonlinear Dynamics of Nonconcatenated Entangled Ring Polymers  
  Invited Speaker: Michael Rubinstein

- Thursday, March 18, 2021 1:18PM - 1:54PM  
  S04.00008: Topological-Order Beyond 2D U(1) Systems: A Novel Perspective on Solidification and Curvature in Crystals and Glassy Solids  
  Invited Speaker: Caroline Gorham

**Session S08: Polymer Glasses**
Sponsoring Units: DPOLY  
Chair: David Simmons
**Thursday, March 18, 2021 3:00 pm – 6:00 pm**

**Invited Session V03: Highly Loaded and Morphologically Enhanced Polymer Nanocomposites**

Sponsoring Units: DPOLY  
Chair: Zahra Fakhraai, University of Pennsylvania

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>3:00PM - 3:36PM</td>
<td>V03.00001: Design of Complex Biomimetic Nanocomposites: Graph Theory</td>
<td>Invited Speaker: Nicholas Kotov</td>
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<tr>
<td>3:36PM - 4:12PM</td>
<td>V03.00002: Polymer Processing at Liquid Crystal-Air Interfaces</td>
<td>Invited Speaker: Laura Bradley</td>
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<tr>
<td>4:12PM - 4:48PM</td>
<td>V03.00003: Driving and manipulating polymer degradation in nanocomposites via photothermal heating of the particle</td>
<td>Invited Speaker: Laura Clarke</td>
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<td>4:48PM - 5:24PM</td>
<td>V03.00004: Ideas for Creating Impact Resistant Polymeric Materials by Tuning Molecular Topology</td>
<td>Invited Speaker: Sinan Keten</td>
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<tr>
<td>5:24PM - 6:00PM</td>
<td>V03.00005: Infiltration of polymers into nanoparticle packings to produce highly loaded nanocomposites</td>
<td>Invited Speaker: Daeyeon Lee</td>
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</tbody>
</table>
Thursday, March 18, 2021 3:00 pm – 6:00 pm

Focus Session V02: Polymers and Soft Solids at Interfaces: Tribology, Wear, Rheology and Interactions
Sponsoring Units: DPOLY DSOFT DFD GSNP
Chair: Saad Khan, North Carolina State University; Catheryn Jackson, Dow Chemical

Thursday, March 18, 2021
3:24PM - 4:00PM
Live
V02.00003: Relaxation and Recovery in Hydrogel Friction on Smooth Surfaces
Invited Speaker: Justin Burton

Thursday, March 18, 2021
4:12PM - 4:48PM
Live
V02.00005: How osmotic pressure governs surface structures and sliding friction on swollen crosslinked hydrogels
Invited Speaker: Alison Dunn

Focus Session V04: Dynamics and Rheology of Polymers and Polyelectrolytes II
Sponsoring Units: DPOLY DSOFT GSNP DBIO
Chair: Thomas O’Connor, Sandia National Laboratories

Thursday, March 18, 2021
5:12PM - 5:48PM
Live
V04.00012: Polyelectrolyte solutions in complex macro- and micro-scale flows
Invited Speaker: Cari Dutcher

Focus Session V08: Polymer Structure Formation and Dynamics in Solution II: Chain Conformations and Phase Separation
Sponsoring Units: DPOLY GSNP DBIO
Chair: Xiaodan Gu, University of Southern Mississippi

5:00PM - 5:36PM
V08.00011: Entropy Driven Assemblies in Dilute Solution
Invited Speaker: Ting Xu

Focus Session V63: Electric Polarization in Polymer Physics
Sponsoring Units: DPOLY GSNP DCP DCOMP
Chair: Rajeev Kumar, Oak Ridge National Laboratory; Yangyang Wang, Oak Ridge National Laboratory

Thursday, March 18, 2021
3:24PM - 4:00PM
Live
V63.00003: How to Define Electric Potential in a Polarized Polymer Electrolyte Why is it Important?
Invited Speaker: Nitash Balsara
### Invited Session X01: The Organic Electrochemical Transistor

**Sponsoring Units:** DPOLY  
**Chair:** Dean DeLongchamp, National Institute of Standards and Technology

<table>
<thead>
<tr>
<th>Date Time</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>Friday, March 19</td>
<td>X01.00001: Designing polymeric mixed ionic/electronic conductors for organic electrochemical transistors</td>
<td>Jonathan Rivnay</td>
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<td>8:00AM - 8:36AM</td>
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<td>Live</td>
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<td>Invited Speaker: Jonathan Rivnay</td>
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<tr>
<td>Friday, March 19</td>
<td>X01.00002: Electrolyte-Gated Transistors for Fundamental Physics and for Applications</td>
<td>C. Daniel Frisbie</td>
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<td>8:36AM - 9:12AM</td>
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<td>Live</td>
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<td>Invited Speaker: C. Daniel Frisbie</td>
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<td>Friday, March 19</td>
<td>X01.00003: Adapting organic electronics to biology (and not vice versa!)</td>
<td>Róisín M Owens</td>
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<td>9:12AM - 9:48AM</td>
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<td>Invited Speaker: Róisín M Owens</td>
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<tr>
<td>Friday, March 19</td>
<td>X01.00004: Monitoring plant physiology with organic electrochemical transistors</td>
<td>Eleni Stavrinidou</td>
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<td>9:48AM - 10:24AM</td>
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<td>Live</td>
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<td>Invited Speaker: Eleni Stavrinidou</td>
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<td>Friday, March 19</td>
<td>X01.00005: Organic Electrochemical Transistors as Wearable, Human-Biochemistry Monitoring Technologies</td>
<td>Erin Ratcliff</td>
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<td>10:24AM - 11:00AM</td>
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<td>Live</td>
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<td>Invited Speaker: Erin Ratcliff</td>
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Friday, March 19, 2021 8:00 am – 11:00 am

Focus Session X02: Molecular Glasses
Sponsoring Units: DPOLY DSOFT DCP DMP
Chair: Michael Tylnski, Wentworth Institute of Technology

Friday, March 19, 2021 8:00AM - 8:36AM
Live
X02.00001: How does a glass become a supercooled liquid? Extreme conditions yield new perspectives
Invited Speaker: Marta Gonzalez-Silveira

Focus Session X03: Optics and Photonics in Polymers and Soft Matter II: Photonics
Sponsoring Units: DPOLY DSOFT DBIO DAMOP
Chair: Danielle Mai, Stanford Univ; Chaitanya Ullal, Rensselaer Polytechnic Institute

Friday, March 19, 2021 9:12AM - 9:48AM
Live
X03.00007: Self-Assembly of Colloidal Diamond
Invited Speaker: David Pine

Focus Session X04: Polymers and Block copolymers at Interfaces II
Sponsoring Units: DPOLY DSOFT
Chair: Reza Foudazi, New Mexico State University

Friday, March 19, 2021 8:36AM - 9:12AM
Live
X04.00004: Controlling Block Polymer Interfaces for Next-Generation Membrane Separations
Invited Speaker: Bryan Boudouris

Session X08: Surfaces, Interfaces, Thin Films, and Coatings
Sponsoring Units: DPOLY
Chair: Hee Jeung Oh, Pennsylvania State University

Session X63: Self-Assembly in Diblock and Triblock Copolymers
Sponsoring Units: DPOLY
Chair: Robert Hoy, Univ of South Florida
Friday, March 19, 2021 11:30 am – 2:30 pm

Focus Session Y02: Polymers in Extreme Environments
Sponsoring Units: DPOLY DSOFT
Chair: Santanu Kundu, Mississippi State Univ

Friday, March 19, 2021 12:06PM - 12:42PM
Live

Y02.00004: Novel Deformation Behaviors in Nanoscale Polymer Systems Via Supersonic Micro-Projectile Impact
Invited Speaker: Edwin Thomas

Focus Session Y03: Polyelectrolyte Complexation II
Sponsoring Units: DPOLY DSOFT
Chair: Samanvaya Srivastava, Univ of California, LA; Debra Audus, National Institute of Standards and Technology

Friday, March 19, 2021 12:18PM - 12:54PM
Live

Y03.00005: Temperature, water, and ion-pairing effects in polyelectrolyte complexes and multilayers
Invited Speaker: Jodie L Lutkenhaus

Session Y04: Polymer Crystals and Crystallization II
Sponsoring Units: DPOLY DSOFT DMP
Chair: Toshikazu Miyoshi, Univ of Akron

Friday, March 19, 2021 11:42AM - 12:18PM
Live

Y04.00002: Flow Induced Crystallization: Insights from Molecular Simulation
Invited Speaker: Gregory Rutledge

Session Y08: Polymer Rheology
Sponsoring Units: DPOLY
Chair: Pinar Akcora, Stevens Inst of Tech

Session Y63: Structured Polymers and Their Advanced Morphological Characterizations
Sponsoring Units: DPOLY
Chair: Julie Albert, Tulane Univ