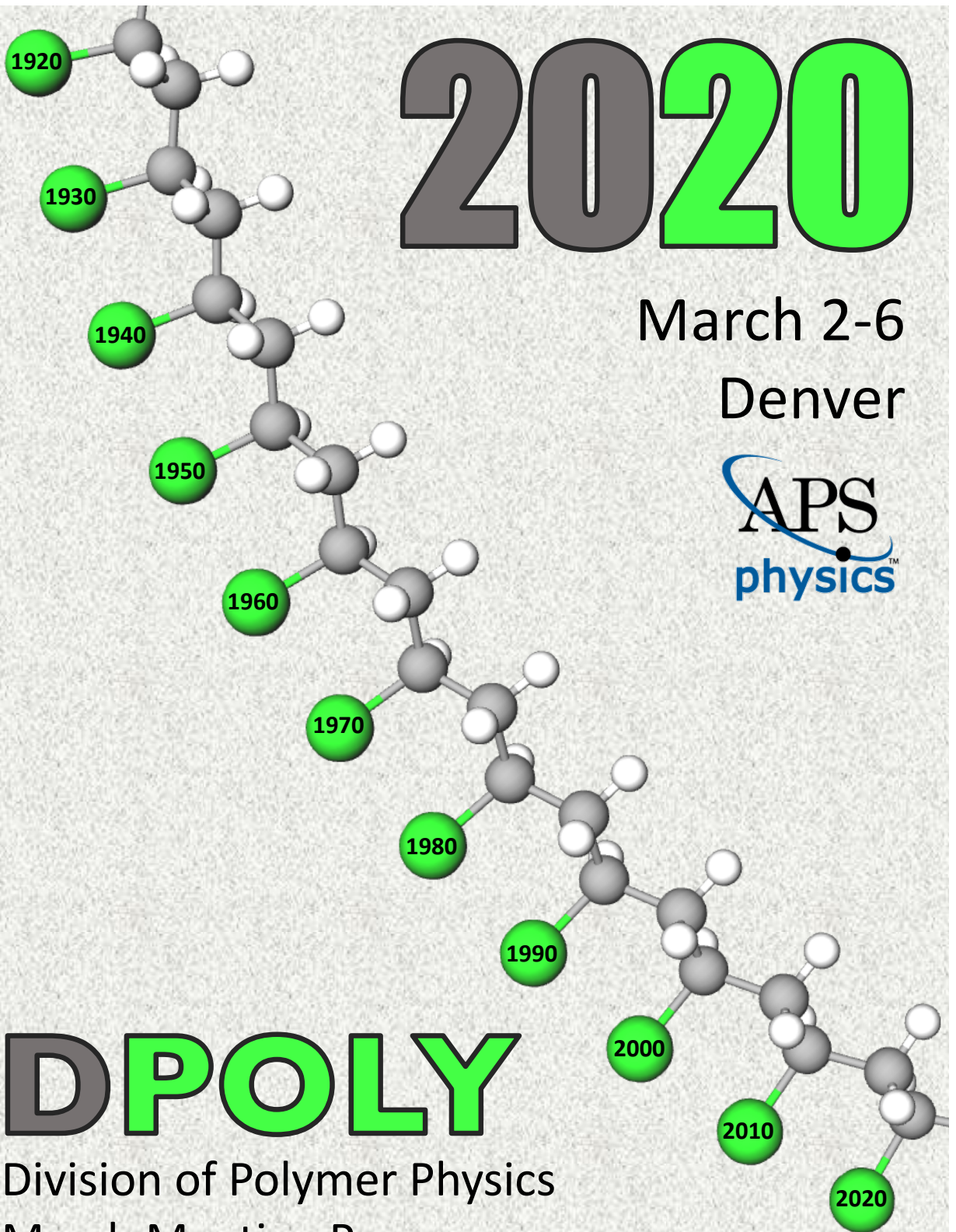
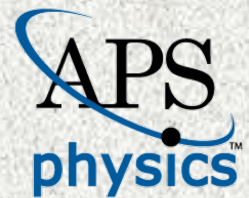


# 2020

March 2-6

Denver



# DPOLY

Division of Polymer Physics  
March Meeting Program

## 2020 DPOLY SHORT COURSE – Machine Learning for Polymer Physicists

<https://www.aps.org/units/dpoly/meetings/machine-learnin.cfm>

**Day and Time:** Saturday, February 29, 1:00pm – 6:00pm and Sunday, March 1, 8:15am – 5:15pm

**Location:** Colorado Convention Center, Room 201

**Course Description:** Data-driven approaches, including machine learning, have created a new paradigm for approaching scientific research. Important applications to polymers have arisen in experimental design, analysis of scattering data, prediction of molecular properties, and identification of important structural and dynamic patterns. Developing techniques for high throughput computation and experiment promise to increase the amount of data available to polymer physicists, presenting new opportunities for discovery. This day and a half short course provides an essential introduction to machine learning and data analytics as relevant to polymer physicists, while showcasing recent advances by leaders in the field. Attendees will acquire training in key algorithmic concepts, an understanding of the state-of-the-art applications, and a foundational understanding of how to incorporate machine learning and data science into their current research.

**Who Should Attend:** The workshop is appropriate for polymer and soft materials researchers at all levels and backgrounds who wish to integrate machine learning techniques into their work. In particular, it is aimed at researchers who have not received formal data science training, but appreciate the power of data science to augment and extend traditional techniques.

**Course Organizers:** Debra Audus (National Institute of Standards and Technology)  
Jonathan Whitmer (University of Notre Dame)

### Course Schedule:

#### *Saturday, February 29 – Machine Learning Tutorials with Examples*

- 1:00pm Introduction to machine learning – Valentin Stanev (U. Maryland)
- 2:30pm Neural networks I – William Ratcliff (NIST)
- 3:00pm Break
- 3:20pm Neural networks II – William Ratcliff (NIST)
- 4:20pm Gaussian processes – Daniel Samarov (NIST)
- 5:30pm Natural language processing – Debra Audus (NIST)

#### *Sunday, March 1 – Cutting Edge Research*

- 7:45am Breakfast
- 8:15am Machine-learning in nanoscience experiments: X-ray scattering/imaging, autonomous control, and more – Kevin Yager (BNL)
- 9:15am Closed-loop experimental design: theory and applications – Kristofer Reyes (U. Buffalo)
- 10:15am Break
- 10:35am Integrating machine learning, simulation, and optimization algorithms for polymer design – David Simmons (U. South Florida)
- 11:35am Model building, coarse graining and free energy calculations – Juan de Pablo (U. Chicago)
- 12:35pm Lunch
- 1:30pm Building predictive models from mixed provenance and accuracy data using transfer learning – Brett Savoie (Purdue Univ.)
- 2:30pm Capturing and using experimental data – Cate Brinson (Duke Univ.)
- 3:30pm Break
- 3:50pm Group projects

**Additional Information:** Please bring a laptop for the hands-on tutorials on Saturday. Tutorials will use Google Colab, so no software installation is required beyond access to a web browser. Free wifi will be provided.

# 2020

## Celebrating 100 Years of Polymer Science!

2020 marks the 100 year anniversary of the macromolecular hypothesis, the recognition that polymers are indeed large covalently-bonded molecules and not just aggregated colloidal systems. X-ray crystallography, a new technique at the time, played a significant role in the debate, with several prominent scientists arguing that the size of molecules could not be larger than the crystallographic unit cell.<sup>1</sup> The structure and behavior of rubber, in particular, were perplexing, where x-ray crystallography demonstrated crystalline peaks when rubber was stretched, but an amorphous halo in the unstretched state. Proponents of the colloidal aggregate viewpoint believed that rubber was made of small crystalline particulates that became ordered when stretched. The understanding of osmotic pressure and how high solution viscosity could be explained without colloidal behavior were also puzzling.

Hermann Staudinger's concept that "high molecular compounds" (molecular weights > 5000 g/mol) are covalently bonded long-chain molecules was first presented at a lecture to the Swiss Chemical Society in 1917, followed by a conference proceedings published in 1919.<sup>1</sup> A paper providing a detailed exposition of his polymer hypothesis was published in 1920,<sup>2</sup> with Staudinger eventually receiving the 1953 Nobel Prize in Chemistry. Thus, the 1920s ushered in a new era for polymer science with the growing acceptance of covalently bonded macromolecules. This new paradigm in molecular structure quickly led to scientific advances such as the entropic basis for rubber elasticity.

The Division of Polymer Physics (DPOLY) was established in 1944, with John H. Dillon elected as the first Chair and Peter Debye as Vice-Chair.<sup>3</sup> Originally named the Division of High Polymer Physics (DHPP), until its name change to a more streamlined acronym in 2000, DPOLY is the second oldest division of the American Physical Society (APS). It has been the scientific home for polymer physics research for 75 years. This year, we celebrate the legacy of polymer science with a special invited session on Monday morning to kick off the APS March meeting: A68. *100 Years of Polymer Science*. Collectively these five speakers (Tim Lodge, Anna Balazs, Scott Milner, Gary Grest, Françoise Brochard-Wyart) will highlight the history of polymer science and the evolution of scientific thought over the years, and in so doing, frame how current research efforts today build on this long legacy of polymer science.

The 100 year anniversary provides perspective to the present and a framework for looking towards the next 100 years. In today's age of computation, the DPOLY Short Course on *Machine Learning for Polymer Physicists* and a related Monday mid-day session B68. *Machine Learning and Data in Polymer Physics*, explores the machine learning and data-driven approaches that have created new avenues in scientific research. (In fact, this program book was compiled in large part using code written by Debbie Audus to generate a dataset of the APS program for the natural language processing tutorial at the Short Course.) For the next 100 years, it is clear sustainability of our planet will be a major societal theme. Polymers have infiltrated every aspect of our lives, unquestioningly providing value. However, there is also a growing public perception of plastics being problematic or possibly antithetical to a sustainable planet. Join us for a conversation on how we as polymer scientists can contribute to these issues and this discourse at a special discussion session Monday evening chaired by Andy Lovinger, E34. *Open Discussion on Polymer Science and Polymer Scientists in the Age of Global Plastics Pollution*.

Connie B. Roth  
Emory University  
January 2020

<sup>1</sup> H. Morawetz, *Polymers: The Origins and Growth of a Science* (John Wiley & Sons, New York, 1985).

<sup>2</sup> H. Staudinger, "Über Polymerisation", *Berichte der Deutschen Chemischen Gesellschaft* 53, 1073-1085 (1920).

<sup>3</sup> W. F. Busse, *Physics Today* 8, 10-11 (1955).

### **Photography**

Please do not take photographs of presentation slides or posters without prior permission of the author.

### **Audiovisual**

All rooms will be equipped with an LCD projector, screen, lavalier microphone, and pointer. All meeting projectors have standard VGA connections. Please bring the appropriate connector/adaptor for your device.

### **Speaker Ready Room**

Be sure to visit the Speaker Ready Room to run through your presentation to ensure that it goes smoothly during your session. Location and hours will be posted at the meeting.

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### **Internet Access**

APS sponsors free wi-fi service in designated “hot spots” and the exhibit hall. Wi-fi service is not available in meeting rooms. Network and password will be posted as of late February.

### **Social Media**

Keep up with the action, connect with meeting attendees, and join the conversation on Twitter. Follow @APSM Meetings and #apsmarch

### **Charging Stations**

APS will offer complimentary, secure charging stations for your mobile devices.

### **Mobile App**

The Meetings@APS mobile app allows attendees to view the meeting schedule on any iOS or Android mobile device. The app will be available as of late February.

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### **Parents’ Quiet Room**

APS has designated a room for quiet time and relaxation that is available to parents with young children. It is not a playroom. The room is fitted with comfortable furniture, water, and a private area for nursing. Location and hours will be posted at the meeting.

### **Gender-Neutral Bathroom**

In an effort to make the meeting all-inclusive, a gender-neutral bathroom will be available in the convention center.

### **Code of Conduct for APS Meetings** <https://march.aps.org/about/code-of-conduct/>

Creating a supportive environment to enable scientific discourse at APS meetings is the responsibility of all participants. It is the policy of the APS that all participants, including attendees, vendors, APS staff, volunteers, and all other stakeholders at APS meetings will conduct themselves in a professional manner that is welcoming to all participants and free from any form of discrimination, harassment, or retaliation. Participants will avoid any inappropriate actions or statements (including unwelcome jokes or comments) based on individual characteristics such as age, race, ethnicity, sexual orientation, gender identity, gender expression, marital status, nationality, political affiliation, ability status, educational background, or any other characteristic protected by law.

Violations of this code of conduct policy should be reported to meeting organizers, APS staff, or the APS Director of Meetings. Report online ([aps.ethicspoint.com](https://aps.ethicspoint.com)) or call (844) 660-3924

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Information in this booklet is unofficial and is accurate as of January 30, 2020. For official information, please refer to the APS March Meeting Program online, which takes precedence in case of conflicts with printed materials. Program chairs, please check online program for any withdrawn talks.

Monday, March 2, 2020 8:00 am – 11:00 am

**Session A32: Polymer Networks, Gel, and Elastomers: Fabrication and Architecture**

Sponsoring Units: DPOLY

Chair: Frederick Phelan, National Institute of Standards and Technology

Room: 504

8:00AM - 8:12AM	32.00001: Mechanophore with analogue force readout in a polymer network <i>Kaikai Zheng, Yifan Zhang, Lingxiang Jiang, Jiang Zhao, Steve Granick</i>
8:12AM - 8:24AM	32.00002: Extending the Real Elastic Network Theory to Account for Cooperative Effect of Cyclic Defects <i>Tzzy-Shyang Lin, Rui Wang, Jeremiah Johnson, Bradley Olsen</i>
8:24AM - 8:36AM	32.00003: A predictive model for index formation in two-stage holographic photopolymers <i>Izabella Berman, Benjamin A. Kowalski, Amy Sullivan, Robert R. McLeod</i>
8:36AM - 9:12AM	32.00004: Reactivity-property relationships in photocontrolled polymer networks <i>Invited Author: Julia Kalow</i>
9:12AM - 9:24AM	32.00005: Belousov Zhabotinsky reaction systems: How “far” is far from equilibrium? <i>Vandana Rajput, Pratyush Dayal</i>
9:24AM - 9:36AM	32.00006: General Approach to Photo-Crosslink Bottlebrush Polymers <i>Renxuan Xie, Sanjoy Mukherjee, Veronica Reynolds, Christopher Bates, Michael L. Chabinyc</i>
9:36AM - 9:48AM	32.00007: Gel Formation in Urethane Liquid Oligomers <i>Praveen Agarwal, Bob Sammler, Luigi Pellacani, Asjad Shafi, Praveenkumar Boopalachandran, David Reuschle</i>
9:48AM - 10:00AM	32.00008: Modelling Intermolecular Cross-Linking in Collagen Fibrils <i>Matthew Leighton, Laurent Kreplak, Andrew Rutenberg</i>
10:00AM - 10:12AM	32.00009: From Gels to 3-D Networks: Creating Multifunctional Polymer-silica Nanofiber based Aerogels <i>tahira pirezada, zahra ashrafi, Wenyi Xie, Saad Khan</i>
10:12AM - 10:24AM	32.00010: Probing the distribution of localization lengths in amorphous solids via wavelength-dependent elasticity <i>Boli Zhou, Rafael Hipolito, Paul Goldbart</i>
10:24AM - 10:36AM	32.00011: Asynchronous Dynamics in Crosslinked Polymer Networks <i>Ketan S Khare, Frederick Phelan</i>
10:36AM - 10:48AM	32.00012: Probing rheology and mechanics of compressed microgel suspensions <i>Svetoslav Nikolov, Alberto Fernandez-Nieves, Alexander Alexeev</i>
10:48AM - 11:00AM	32.00013: Energy Renormalization Approach to Coarse-Grained Epoxy Resins <i>Andrea Giuntoli, Zhaoxu Meng, Nitin Hansoge, Sinan Keten</i>



Monday, March 2, 2020 8:00 am – 11:00 am

**Session A33: Polymer Nanocomposites: Dynamics**

Sponsoring Units: DPOLY DSOFT GSNP

Chair: Robert Hickey, Pennsylvania State University

Room: 505

8:00AM - 8:36AM	33.00001: Nanoparticle Structure and Dynamics in Polymer Nanocomposites <i>Invited Author: Michael Hore</i>
8:36AM - 8:48AM	33.00002: Hybrid nanoparticles with continuously tunable scattering length density for the analysis of phase separation in mixed colloidal systems <i>Yue Zhai, Jin Han, Wenjie Wu, Krzysztof Matyjaszewski, Alamgir Karim, Michael Bockstaller</i>
8:48AM - 9:00AM	33.00003: Fast solvent induced switchable phase-states of binary polymer-grafted nanoparticle blends <i>Wenjie Wu, Maninderjeet Singh, Xiaoteng Wang, Yue Zhai, Zongyu Wang, Tanguy Terlier, Krzysztof Matyjaszewski, Michael Bockstaller, Alamgir Karim</i>
9:00AM - 9:12AM	33.00004: PEO / SiO <sub>2</sub> nanocomposites: Correlating Polymer Morphology to Rheological Properties <i>Kiriaki Chrissopoulou, Sokratis Kogchylakis, Spiros H. Anastasiadis</i>
9:12AM - 9:24AM	33.00005: Decoupling the polymer dynamics and the nanoparticle network dynamics of polymer nanocomposites through dielectric spectroscopy and rheology <i>Shiwang Cheng, jie Yang, wei Yang</i>
9:24AM - 9:36AM	33.00006: Segmental dynamics in matrix-free polymer grafted nanoparticles <i>Mayank Jhalaria, Eric Ruzicka, Madhusudan Tyagi, Victoria Garcia-Sakai, Brian C Benicewicz, Sanat Kumar</i>
9:36AM - 9:48AM	33.00007: Modeling the Entanglement Distribution in Polymer-grafted Nanoparticle Systems <i>Robert J Tannenbaum, Taiji Mikami, Gaetan Maurel, Marc Couty, Sanat Kumar</i>
9:48AM - 10:00AM	33.00008: Disentangling the role of chain conformation on the mechanics of polymer grafted nanoparticle materials <i>Jiarul Midya, Yu Cang, Sergei A. Egorov, Krzysztof Matyjaszewski, Michael R. Bockstaller, Arash Nikoubashman, George Fytas</i>
10:00AM - 10:12AM	33.00009: Suppression of Creep in Model Polymer Nanocomposites <i>Entao Yang, James Pressly, Eric Bailey, Bharath Natarajan, Aruna Mohan, Karen Winey, Robert Riggelman</i>
10:12AM - 10:24AM	33.00010: Nanoparticles with controllable dispersion and localization in immiscible polymer blends <i>Husam Alkhodairi, Sebastian T Russell, Julia Pribyl, Brian C Benicewicz, Sanat Kumar</i>
10:24AM - 10:36AM	33.00011: Polymer/Star-Polymer composites: structure and dynamics of bulk and confined materials <i>Jinpeng Fan, Jack Douglas, Francis Starr</i>

10:36AM - 10:48AM 33.00012: Tuning structure and dynamics of segmented ionenes with added spherical nanoparticles

*Nicholas Liesen, Lisa Hall*

10:48AM - 11:00AM 33.00013: Molecular Dynamics Study of Structural and Flow properties of Polyelectrolyte-Grafted Nanoparticles in Solution

*Koteswararao Medidhi, Pinar Akcora, Venkat Padmanabhan*

Monday, March 2, 2020 8:00 am – 11:00 am

**Session A34: Confinement, Dynamics, and Ion Interactions in Ion-Containing Polymers I**

Sponsoring Units: DPOLY DSOFT

Chair: Lisa Hall, Ohio State Univ - Columbus

Room: 506

8:00AM - 8:12AM	34.00001: Ion Transport Mechanisms in Ionomers <i>Amalie Frischknecht, Bryce Thurston, Jonathan Bollinger, Mark Stevens, Benjamin Paren, Karen Winey</i>
8:12AM - 8:24AM	34.00002: Confined polyelectrolyte solution driven by an external electric field <i>Debarshee Bagchi, Monica Olvera De La Cruz</i>
8:24AM - 8:36AM	34.00003: Ion Correlations and Transference Number in Model Polymer Electrolytes: Effects of Ion Size and Dielectric Strength <i>Kuan-Hsuan Shen, Lisa Hall</i>
8:36AM - 8:48AM	34.00004: Influence of Water Content and Morphology on Proton Transport in Biocompatible Conductive Polymer Membranes <i>Gloria Bazargan, Sean A Fischer, Daniel Gunlycke</i>
8:48AM - 9:00AM	34.00005: Effects of Homopolymer Additives on Conductivity of Salt-Doped Block Copolymers from Molecular Dynamics Simulations <i>Mengdi Fan, Lisa Hall</i>
9:00AM - 9:12AM	34.00006: Can solvation free energy rationalize the phase behavior of ion-doped copolymers? <i>Jian Qin, Kevin J Hou, Whitney Loo, Nitash Balsara</i>
9:12AM - 9:24AM	34.00007: Densely Grafted Polyelectrolyte Brushes Trigger “Water-in-Salt” like Scenarios and Ultraconfinement Effect <i>Harnoor Singh Sachar, Turash Haque Pial, Parth Rakesh Desai, Sai Ankit Etha, Yanbin Wang, Peter W. Chung, Siddhartha Das</i>
9:24AM - 9:36AM	34.00008: Ion Transport in Pendant and Backbone Polymerized Ionic Liquids <i>Atsushi Matsumoto, Preeya Kuray, Takeru Noda, Ciprian G. Iacob, Tadashi Inoue, Michael A Hickner, James Patrick Runt</i>
9:36AM - 9:48AM	34.00009: Tailoring Ion Transport Properties of Block Copolymer Electrolytes with End-functionalized Homopolymer Addition <i>JiHOON KIM, Moon Jeong Park</i>
9:48AM - 10:24AM	34.00010: Mechanisms of Ion Transport in Polymeric Ionic Liquids <i>Invited Author: Venkatraghavan Ganesan</i>
10:24AM - 10:36AM	34.00011: Quantifying Intrinsic Interfacial Transport Properties in Block Copolymer Electrolytes <i>Peter Bennington, Daniel Sharon, Michael Webb, Juan De Pablo, Paul F Nealey, Shrayesh Patel</i>
10:36AM - 10:48AM	34.00012: Multifunctional polymer electrolyte networks for energy harvesting and storage <i>Hamad Albehajjan, Thein Kyu</i>
10:48AM - 11:00AM	34.00013: Low-Voltage Reversible Electro-Adhesion of Ionoelastomer Junctions <i>Hyeong Jun Kim, Lindsay Paguin, Christopher Barney, Zhigang Suo, Alfred J Crosby, Ryan Hayward</i>

Monday, March 2, 2020 8:00 am – 11:00 am

### Session A35: Directed Self-Assembly of Copolymers in Confined Geometry I

Sponsoring Units: DPOLY

Chair: Teruaki Hayakawa, Tokyo Inst of Tech - Tokyo

Room: 507

8:00AM - 8:12AM	35.00001: Fabrication and characterization of freestanding phononic thermocrystal membranes via block-copolymer directed-self assembly <i>Elizabeth Ashley, Naoki Tambo, Masaki Fujikane, Yasuyuki Naito, Kouhei Takahashi, Peter J. Duda, Paul F Nealey</i>
8:12AM - 8:24AM	35.00002: Engineering Block Copolymers To Achieve Equal Surface Free Energy and Tunable $\chi N$ For Directed Self-Assembly Applications <i>Hongbo Feng, Moshe Dolejsi, Ning Zhu, Chun Zhou, Stuart J Rowan, Paul F Nealey</i>
8:24AM - 8:36AM	35.00003: Enhancing the Scale of Block Copolymer Lamellae Alignment using Ionic Liquid (IL) on a Planar Supporting Substrate <i>Ali Masud, Jack Douglas, Sean Bailey, Alamgir Karim</i>
8:36AM - 8:48AM	35.00004: Combining polymer synthesis with self-assembly of block copolymers <i>Zhe Qiang, Muzhou Wang</i>
8:48AM - 9:00AM	35.00005: Hexagonal pattern coarsening in cylinder-forming PS- <i>b</i> -PMMA block copolymer thin films <i>Gabriele Seguni, Michele Perego</i>
9:00AM - 9:12AM	35.00006: Selective Modification from PS- <i>b</i> -PMMA- <i>b</i> -Pt BA Triblock Copolymer for Ultrafiltration Membranes <i>Taesuk Jun, Sungmin Park, Hye Rin Yoon, Seongjun Jo, Chang Ryu, Du Yeol Ryu</i>
9:12AM - 9:24AM	35.00007: Irreversible Physisorption of PS- <i>b</i> -PMMA for Neutral Layer <i>Wooseop Lee, Yeongsik Kim, Seungyun Jo, Hyungju Ahn, Du Yeol Ryu</i>
9:24AM - 9:36AM	35.00008: Failure and mechanical properties of block copolymer thin films <i>Tianren Zhang, Ning Wang, Robert Riggelman</i>
9:36AM - 9:48AM	35.00009: Advanced metrology and molecular dynamics simulations for quantifying counterion condensation in block copolymer electrolyte thin films <i>Qi Lei, Christopher G Arges</i>
9:48AM - 10:00AM	35.00010: Modeling Surface Interactions for Block Copolymers and Polymer Brushes under Soft Confinement <i>Jun-Qing Song, Yi-Xin Liu, Hong-Dong Zhang</i>
10:00AM - 10:12AM	35.00011: Degradation of Block Copolymer Films <i>Ryan Sayko, Zilu Wang, Matthew L. Becker, Andrey Dobrynin</i>
10:12AM - 10:24AM	35.00012: Self-Assembly of Triblock Copolymer using Dissipative Particle Dynamics Simulations <i>Ji-Hyun Oh, Hejin Huang, Alfredo Alexander-Katz</i>
10:24AM - 11:00AM	35.00013: New insight into self-assembly of block copolymers at the solid-polymer melt interface <i>Invited Author: Tad Koga</i>

**Monday, March 2, 2020 8:00 am – 11:00 am**

**Session A68: 100 Years of Polymer Science**

Sponsoring Units: DPOLY

Chair: Connie Roth, Emory University

Room: Four Seasons 4

8:00AM - 8:36AM	68.00001: Equilibration and Dynamics in Block Copolymer Micelles <i>Invited Author: Timothy Lodge</i>
8:36AM - 9:12AM	68.00002: Polymers Science in Modeling Mushy, Squishy Systems <i>Invited Author: Anna Balazs</i>
9:12AM - 9:48AM	68.00003: Progress in understanding entangled polymer dynamics <i>Invited Author: Scott Milner</i>
9:48AM - 10:24AM	68.00004: Computer Simulations of Entangled Polymer Melts: From Segmental Dynamics to Viscoelastic Response <i>Invited Author: Gary Grest</i>
10:24AM - 11:00AM	68.00005: Application of Polymer Physics to tissue viscoelasticity: Entangled active matter <i>Invited Author: Francoise Brochard-Wyart</i>

Monday, March 2, 2020 8:00 am – 11:00 am

**Session A70: Polymer Dynamics at the Nano-to Meso-Scale Revealed by X-ray and Neutron Spectroscopy I**

Sponsoring Units: DPOLY DSOFIT

Chair: Laura Stingaciu, Oak Ridge National Lab and Antonio Faraone, University of Maryland, College Park

Room: 208

8:00AM - 8:12AM	70.00001: Dynamics of nanoparticles in polyelectrolyte solutions <i>Ali H Slim, Ryan Poling-Skutvik, Jacinta Conrad</i>
8:12AM - 8:24AM	70.00002: Correcting the Generalized Stokes-Einstein Relation to Include Effects of Hydrodynamic Interactions from Periodic Images <i>Jeffrey Ethier, Pouria Nourian, Rajesh Khare, Jay Schieber</i>
8:24AM - 8:36AM	70.00003: Resolving structure-property-dynamics relationships in model polymer nanocomposite systems <i>Benjamin Yavitt, Daniel Salatto, Zhixing Huang, Maya Endoh, Lutz Wiegart, Andrei Fluerașu, Yugang Zhang, Masafumi Fukuto, Ruipeng Li, Vera bocharova, Alexei Sokolov, Tad Koga</i>
8:36AM - 8:48AM	70.00004: Role of soft interactions in enhanced diffusivity of polymer-grafted nanoparticles in heterogeneous environments <i>Ryan Poling-Skutvik, Jacinta Conrad, Ramanan Krishnamoorti</i>
8:48AM - 9:00AM	70.00005: Dynamic Behavior of Polystyrene Soft Nanoparticles by Neutron Spin Echo <i>Jacob Fischer, Mark Dadmun, Antonio Faraone</i>
9:00AM - 9:12AM	70.00006: Universality in Microstructural Evolution of Deformed Polymer Melts as Revealed by Small-Angle Neutron Scattering and Molecular Dynamics Simulation <i>Wensheng Xu, Christopher N Lam, Jan-Michael Carrillo, Bobby G Sumpter, Yangyang Wang</i>
9:12AM - 9:48AM	70.00007: Nanoparticle effect on multiscale polymer dynamics in nanocomposites: insights from neutron and x-ray spectroscopy <i>Invited Author: Erkan Senses</i>
9:48AM - 10:00AM	70.00008: Molecular Dynamics Simulations of a Polymer Star under Shear Flow <i>Jan-Michael Carrillo, Yangyang Wang, Bobby G Sumpter, Wei-Ren Chen</i>
10:00AM - 10:12AM	70.00009: Dynamics and Rheology of THF Swollen Ionic Polymer Melts: Molecular Dynamics Simulation Study <i>Shalika D. K. Meedin, Chathurika Kosgallana, Manjula Senanayake, Gary Grest, Dvora Perahia</i>
10:12AM - 10:24AM	70.00010: Influence of Chain Architecture on the Kinetics of Chain Exchange Between BCC-Ordered Copolymer Micelles: A Dynamical Self-Consistent Mean-Field Theory Study <i>Mark Holden, Robert Wickham</i>
10:24AM - 10:36AM	70.00011: Revealing Structures and Dynamics of Bound Chains in Filler-Reinforced Elastomers <i>Daniel Salatto, Benjamin Yavitt, Maya Endoh, Tomomi Masui, Hiroyuki Kishimoto, Jan-Michael Carrillo, Takashi Taniguchi, Michihiro Nagao, Tadanori Koga</i>

10:36AM - 10:48AM

70.00012: The Effect of Rubbery/Glassy Block Copolymer Brushes on the Dynamic Behaviors of Silica Particles in Nanocomposite Elastomer

*Chao-Hung Cheng, Shiori Masuda, Nattanee Dechnarong, Kento Fukada, Kiyu Uno, Kazutaka Kamitani, Taiki Hoshino, Ken Kojio, Atsushi Takahara*

10:48AM - 11:00AM

70.00013: The Role of Fast Relaxations in Cross-Linked Polymer Networks for Impact Mitigation

*Christopher Soles, Kanae Ito, Adam B Burns, Madhusudan Tyagi, Daniel Knorr, Kevin A Masser, Joseph L Lenhart*

**Monday, March 2, 2020, 8:00 am – 11:00 am**

Additional DPOLY Co-Sponsored Sessions

**A05. *Focus* The Chemical Physics of Molecular Polaritons I. Photophysics**

Sponsoring Units: DCP DCMP DPOLY

Room: 111

**A26. *Focus* Mechanics of Cells and Tissues Across Scales I**

Sponsoring Units: DBIO GSNP DSOFT DPOLY

Room: 403

**A40. *Focus* Building the Bridge to Exascale: Applications and Opportunities for Materials, Chemistry, and Biology I**

Sponsoring Units: DCOMP DCMP DPOLY DBIO

Room: 705

**A45. *Focus* Understanding Glasses and Disordered Systems Through Computational Models I**

Sponsoring Units: DCOMP DSOFT GSNP DPOLY

Room: 706

**A58. *Focus* DFT and Beyond I**

Sponsoring Units: DCP DCOMP DPOLY DCMP

Room: Mile High Ballroom 3B



Monday, March 2, 2020 11:15 am – 2:15 pm

**Session B32: Polymer Networks, Gels, and Elastomers: Mechanics**

Sponsoring Units: DPOLY

Chair: Saad Khan, North Carolina State University

Room: 504

11:15AM - 11:27AM	32.00001: Multiaxial Stretching of Nearly Critical Gels with Extremely Low Modulus <i>Takuma Aoyama, Naoto Yamada, Kenji Urayama</i>
11:27AM - 11:39AM	32.00002: Rate-dependent fracture mechanics of transient networks <i>Franck J. Vernerey, Tong Shen</i>
11:39AM - 11:51AM	32.00003: High-Rate Dynamics and Fracture Behavior of Model Swollen Polymer Network Characterized by Seeded Laser-Induced Cavitation <i>Sacchita Tiwari, Ipek Sacligil, yue zheng, Christopher Barney, Carey Dougan, Shengqiang Cai, Alfred J Crosby, Shelly Peyton, Gregory N Tew, Jae-Hwang Lee</i>
11:51AM - 12:27PM	32.00004: Chemical tools for investigating the topology of polymer networks <i>Invited Author: Jeremiah Johnson</i>
12:27PM - 12:39PM	32.00005: Cavitation and Fracture of Soft Materials <i>Christopher Barney, Ipek Sacligil, Gregory N Tew, Alfred J Crosby</i>
12:39PM - 12:51PM	32.00006: Role of Topological Defects on Fracture of Polymer Networks <i>Akash Arora, Tzyy-Shyang Lin, Bradley Olsen</i>
12:51PM - 1:03PM	32.00007: Indentation Rate Sensitive Relaxation of Soft Hydrogels <i>Mohammad Islam, Michelle L. Oyen</i>
1:03PM - 1:15PM	32.00008: Influence of polymer concentration and midblock length on the mechanical behavior of [ABA] triblock copolymer gels in a B-selective solvent <i>Satish Mishra, Rosa Maria Badani Prado, Thomas E. Lacy, Santanu Kundu</i>
1:15PM - 1:27PM	32.00009: Fracture of Model End-Linked Networks <i>Christopher Barney, Ziyu Ye, Ipek Sacligil, Gregory N Tew, Robert Riggelman, Alfred J Crosby</i>
1:27PM - 1:39PM	32.00010: Unveiling the effects of molecular topology on the viscoelasticity of entangled polymers under gelation <i>Weizhong Zou, Alexandra A. Sourakov, Nathan Rebello, Tzyy-Shyang Lin, Bradley Olsen, Jeremiah Johnson</i>
1:39PM - 1:51PM	32.00011: Constitutive modelling of responsive and non-responsive polymer gels with limited compressibility <i>Priyanka Nemani, Ravi Sastri Ayyagari, Pratyush Dayal</i>
1:51PM - 2:03PM	32.00012: New Insights into the Chain Dynamics and Microstructure of Highly Crosslinked Polymer Networks as a Function of Network Heterogeneity <i>Brad Jones, Todd M Alam, Mathias C Celina, Sangwoo Lee</i>
2:03PM - 2:15PM	32.00013: Deformation of Inhomogeneous End-linked Polymer Networks <i>Ziyu Ye, Robert Riggelman</i>

Monday, March 2, 2020 11:15 am – 2:15 pm

**Session B33: Polymer Nanocomposites: Interfaces**

Sponsoring Units: DPOLY DSOFTE GSNP

Chair: Shiwang Cheng, Michigan State Univ

Room: 505

11:15AM - 11:51AM	33.00001: Designing Polymer Nanocomposites: Critical Role of the Interfacial Layer <i>Invited Author: Alexei Sokolov</i>
11:51AM - 12:03PM	33.00002: Dynamics in polymer and polymer-grafted nanocomposites: it's the interfacial zone after all <i>Emmanuel Mapesa, Dayton P. Street, S. Michael Kilbey II, Joshua Sangoro</i>
12:03PM - 12:15PM	33.00003: Theory of coupled activated relaxation in dense polymer-particle mixtures: effects of size ratio, particle loading and interfacial attraction <i>Yuxing Zhou, Kenneth Schweizer</i>
12:15PM - 12:27PM	33.00004: The interfacial zone around nanoparticles in polymer nanocomposites and in thin polymer films <i>Wengang Zhang, Hamed Emamy, Beatriz Pazmino Betancourt, Fernando Vargas-Lara, Francis Starr, Jack Douglas</i>
12:27PM - 1:03PM	33.00005: Polymer NanoComposites, Interfaces and Data <i>Invited Author: Catherine Brinson</i>
1:03PM - 1:15PM	33.00006: Chemical Heterogeneities and Architectures of Interfacial Layers in Polymer Nanocomposites <i>Di Wu, Siyang Yang, Pinar Akcora</i>
1:15PM - 1:27PM	33.00007: Interfacial mechanics and viscoelastic properties of patchy graphene oxide reinforced nanocomposites <i>Zhaoxu Meng</i>
1:27PM - 1:39PM	33.00008: Theory and Simulation of Polymer Brushes - Interaction and Structure <i>Sabin Adhikari, Sanat Kumar</i>
1:39PM - 1:51PM	33.00009: Aggregation of Grafted Nanoparticles in a Polymeric Matrix <i>Clement Koh, Gary Grest, Sanat Kumar</i>
1:51PM - 2:03PM	33.00010: Surface Segregation and Wetting of Nanoparticles in Polymer Nanocomposites <i>Shawn Maguire, John Derek Demaree, Connor Bilchak, Nadia Krook, Michael J. Boyle, Andreea-Maria Pana, Patrice Rannou, Manuel Maréchal, Kohji Ohno, Russell Composto</i>
2:03PM - 2:15PM	33.00011: Initial Solvent-Driven Nonequilibrium Effect on the Adsorption Layer of Polymer Nanocomposites <i>Sol Mi Oh, Mozdeh Abbasi, Tae Joo Shin, Kay Saalwaechter, So Youn Y Kim</i>

Monday, March 2, 2020 11:15 am – 2:15 pm

### Session B34: Confinement, Dynamics, and Ion Interactions in Ion-Containing Polymers II

Sponsoring Units: DPOLY DSOFIT

Chair: Bryan Beckingham, Auburn University

Room: 506

11:15AM - 11:27AM	34.00001: Ion Confinement in Self-Assembled Precisely Segmented Polyolefin Ionomers <i>Karen Winey, Lu Yan, Jinseok Park, Stefan Mecking</i>
11:27AM - 11:39AM	34.00002: Unraveling how nanoconfinement and phase-separation affect the transport properties of ionomer membranes <i>Rui Zhang, Ying Chen, Diego Troya, Louis A Madsen</i>
11:39AM - 11:51AM	34.00003: Polymeric Ionic Liquid-Ligand Gels Exhibiting Transient Gel Behavior and Multivalent Ion Conductivity <i>Seamus Jones, Nicole Michenfelder-Schauser, Glenn H Fredrickson, Rachel A Segalman</i>
11:51AM - 12:27PM	34.00004: Hydroxide conducting block copolymers <i>Invited Author: Yossef Elabd</i>
12:27PM - 12:39PM	34.00005: Simulation of Ion Transport through Percolated Aggregates in Precise Sulfophenylated Polyethylene Ionomers <i>Bryce Thurston, Mark Stevens, Benjamin Paren, Karen Winey, Amalie Frischknecht</i>
12:39PM - 12:51PM	34.00006: Mechanisms of Ion Transport in Block Copolymeric Polymerized Ionic Liquids <i>Zidan Zhang, Jakub Krajniak, Jordan R Keith, Venkatraghavan Ganesan</i>
12:51PM - 1:03PM	34.00007: Composition fluctuation in weakly heterogeneous dielectric medium containing ions <i>Xian Kong, Kevin J Hou, Jian Qin</i>
1:03PM - 1:15PM	34.00008: Permeation and copermeation behavior of methanol and acetate in cation exchange membranes <i>Jung Min Kim, Bryan Beckingham</i>
1:15PM - 1:27PM	34.00009: Percolated ionic aggregates in precise sulfophenylated polyethylene ionomers: Morphology and ion transport <i>Benjamin Paren, Bryce Thurston, Justin G Kennemur, Mark Stevens, Amalie Frischknecht, Karen Winey</i>
1:27PM - 1:39PM	34.00010: Investigation of monomer segment distributions, chain conformations, and lithium salt solvation in self-assembled, tapered block polymer electrolytes <i>Priyanka Ketkar, Kuan-Hsuan Shen, Lisa Hall, Thomas Epps</i>
1:39PM - 1:51PM	34.00011: Model single ion conducting polymer networks for understanding the impact of ion content, crosslink density, and side chain length on Li transport <i>Christopher Evans, Chengtian Shen</i>
1:51PM - 2:03PM	34.00012: Salt-tethered nanoparticles in solvent: A potential high conductivity, high lithium transference number electrolyte system <i>Sanket Kadulkar, Delia Milliron, Thomas Truskett, Venkatraghavan Ganesan</i>
2:03PM - 2:15PM	34.00013: Cluster Cohesion Effects on Segmental Dynamics in Ionic Polymer Solutions: Molecular Dynamics Simulation Studies

*Chaturika Kosgallana, Sidath I Wijesinghe, Manjula Senanayake, Supun Samindra Kamkanam Mohottalalage, Piotr Zolnierczuk, Gary Grest, Dvora Perahia*

Monday, March 2, 2020 11:15 am – 2:15 pm

**Session B35: Directed Self-Assembly of Copolymers in Confined Geometry II**

Sponsoring Units: DPOLY

Chair: Du Yeol Ryu, Yonsei University

Room: 507

11:15AM - 11:27AM	35.00001: In-Situ TEM Visualization of Pressure-Induced Ordering of Nanostructured Block Copolymer Thin Films <i>Rong-Ming Ho, Chen-Jung Hung, Shih-Yi Li, Jheng-Wei Lin, Hsiao-Fang Wang, Aum Sagar, Yi-Chien Lee, An-Chang Shi, Apostolos Avgeropoulos, Fan-Gang Tseng, Fu-Rong Chen</i>
11:27AM - 11:39AM	35.00002: Uncovering Hidden Structure in Polymer Films with Soft X-ray Reflectivity <i>Daniel Sunday, Jacob Thelen, Chun Zhou, R. Joseph Kline, Paul F Nealey</i>
11:39AM - 11:51AM	35.00003: Mapping Self-Assembled Ternary Polymer Blend Phase Behavior Using Gradient Composition Libraries <i>Gregory Doerk, KristofToth, Chinedum Osuji, Kevin Yager</i>
11:51AM - 12:03PM	35.00004: Rapid and Tunable Structuring of Block Copolymer Films using Controlled Solvent Swelling <i>Andrew Selkirk, Anna Trubetskaya, Michael Morris, Parvaneh Mokarian</i>
12:03PM - 12:15PM	35.00005: Rapid Vertical Ordering of Lamellar Block Copolymer Films by Dynamic Thermal Gradient Annealing for Ion Conduction Membranes <i>Maninderjeet Singh, Wenjie Wu, Monali N Basutkar, Joseph Walter Strzalka, Alamgir Karim</i>
12:15PM - 12:27PM	35.00006: Directed self-assembly of block copolymer thin film with vertical lamellae by applying filtered plasma and repeated shear stress <i>Jinwoo Oh, Jeong Gon Son</i>
12:27PM - 12:39PM	35.00007: Nanotubes from 6-arm star-shaped (PMMA- <i>b</i> -PS) <sub>6</sub> thin films <i>So Yeong Park, Chungryong Choi, Eunseol Kim, JunHo Jang, Yeseong Seo, JinKon Kim</i>
12:39PM - 12:51PM	35.00008: Nanostructure sizes and interfacial roughness in blends of linear and cyclic block copolymers <i>Amy D Goodson, Maxwell Rick, Jessie E. Troxler, Hank Ashbaugh, Julie Albert</i>
12:51PM - 1:27PM	35.00009: Morphological Evolution of Poly(solketal methacrylate)- <i>block</i> - polystyrene in Thin Films <i>Invited Author: Thomas Russell</i>
1:27PM - 1:39PM	35.00010: Ordering and Defectivity in Sub-10 nm Perpendicular Lamellar Block Copolymer Thin Films <i>Alvin Chandra, Ryuichi Nakatani, Takumi Uchiyama, Yuta Nabae, Teruaki Hayakawa</i>
1:39PM - 1:51PM	35.00011: Boundary-Directed Epitaxy of Block Copolymers <i>Robert Jacobberger, Vikram Thapar, Guangpeng Wu, Tzu-Hsuan Chang, Vivek Saraswat, Austin J Way, Katherine Jenkins, Zhenqiang Ma, Paul F Nealey, Su-Mi Hur, Shisheng Xiong, Michael Arnold</i>

1:51PM - 2:03PM

35.00012: Effect of chain architectures on the segregation degree of block copolymers

*Xianwen Ji, Wei-hua Li*

Monday, March 2, 2020 11:15 am – 2:15 pm

**Session B68: Machine Learning and Data in Polymer Physics**

Sponsoring Units: DPOLY

Chair: Jonathan Whitmer, University of Notre Dame

Room: Four Seasons 4

11:15AM - 11:51AM	68.00001: Autonomous X-ray Scattering <i>Invited Author: Kevin Yager</i>
11:51AM - 12:27PM	68.00002: Molecular Simulations Integrated Machine Learning Study of Bottlebrush Polymers <i>Invited Author: Sanket Deshmukh</i>
12:27PM - 1:03PM	68.00003: A Transfer Learning Framework for Improving Property Prediction, Interpretability, and Chemical Discovery from Scarce Datasets <i>Invited Author: Brett Savoie</i>
1:03PM - 1:39PM	68.00004: Optimization of organic molecules and macromolecules using machine learning <i>Invited Author: Yaroslava Yingling</i>
1:39PM - 2:15PM	68.00005: Closed-loop, sequential learning for polymer systems <i>Invited Author: Kristofer Reyes</i>

Monday, March 2, 2020 11:15 am – 2:15 pm

**Session B70: Polymer Dynamics at the Nano-to Meso-Scale Revealed by X-ray and Neutron Spectroscopy II**

Sponsoring Units: DPOLY DSOFIT

Chair: Tad Koga, State Univ of NY - Stony Brook and Antonio Faraone, University of Maryland, College Park

Room: 208

11:15AM - 11:27AM	70.00001: Soft Matter Dynamics with Neutron Spin Echo Spectroscopy at the Spallation Neutron Source <i>Piotr Zolnierczuk, Laura-Roxana Stingaciu, Michael Monkenbusch</i>
11:27AM - 11:39AM	70.00002: Dynamics of multi-domain macro-molecules in the context of polymer physics <i>Laura-Roxana Stingaciu, Volker Urban</i>
11:39AM - 11:51AM	70.00003: Mapping Structural Dynamics of Conjugated Polymers <i>Anne Guilbert, Mohamed Zbiri, Peter Finn, Jenny Nelson, Christian Nielsen</i>
11:51AM - 12:03PM	70.00004: Length-Scale Dependence of Block Copolymer Segmental Dynamics <i>Daniel Hallinan, Oluwabenga Iyiola, Kunlun Hong, Monojoy Goswami, Piotr Zolnierczuk, Laura-Roxana Stingaciu, William Thomas Heller, Kyoungmin Kim</i>
12:03PM - 12:15PM	70.00005: Investigating the effect of salt on polymer dynamics in block copolymer electrolytes through neutron spin-echo spectroscopy <i>Whitney Loo, Antonio Faraone, Nitash Balsara</i>
12:15PM - 12:27PM	70.00006: Ion transport in solid polymeric lithium ion electrolytes <i>Hans-Georg Steinrueck, Christopher Takacs, David Mackanic, Benjamin Holladay, Hong Keun Kim, Chuntian Cao, Suresh Narayanan, Eric Dufresne, Yuriy Chushkin, Federico Zontone, Beatrice Ruta, Johannes Will, Oleg Borodin, Sunil K Sinha, Venkat Srinivasan, Michael Toney</i>
12:27PM - 12:39PM	70.00007: Diffusion of Lithium Salt in Block Copolymer <i>Kyoungmin Kim, Micah Silverman, Daniel Hallinan</i>
12:39PM - 12:51PM	70.00008: Unravelling the Interplay Between Structural Dynamics and Water Transport in Perfluorosulfonated Ionomer Nanocomposites Through the use of Neutron Scattering and Infrared Spectroscopy <i>Apoorva Balwani, Allison B Domhoff, Madhusudan Tyagi, Antonio Faraone, Eric M Davis</i>
12:51PM - 1:03PM	70.00009: Connecting microscale stresses to macromolecular motion in entangled ring-linear DNA blends <i>Karthik Reddy Peddireddy, Megan C Lee, Jonathan Garamella, Ryan J. McGorty, Rae M Robertson-Anderson</i>
1:03PM - 1:15PM	70.00010: Structure and dynamics of homogeneously and heterogeneously crosslinked PNIPAM microgels <i>Tetyana Kyrey, Judith Witte, Laura-Roxana Stingaciu, Marcus Witt, Regine von Klitzing, Stefan Wellert, Olaf Holderer</i>
1:15PM - 1:27PM	70.00011: Dynamics of polymeric additives in bicontinuous microemulsions adjacent to planar hydrophilic surfaces <i>Henrich Frielinghaus, Frederik Lipfert, Olaf Holderer, Stefan Mattauch, Michael Monkenbusch, Nikolas Arend, Dieter Oswald Richter</i>



1:27PM - 1:39PM

70.00012: High shear rate rheology in microcapillary flow with SANS

*Paul Salipante, Ryan Murphy, Vishnu Dharmaraj, Katie Weigandt, Steven Hudson*

1:39PM - 2:15PM

70.00013: In-Situ/Operando X-ray Photon Correlation Spectroscopy Studies of Polymer Dynamics During 3D-Printing of Dual-Cure Polymer Epoxy

*Invited Author: Stanislas Petrash*

**Monday, March 2, 2020, 11:15 am – 2:15 pm**

Additional DPOLY Co-Sponsored Sessions

**B04. *Focus* Coherent Nonlinear Optical Microscopy I**

Sponsoring Units: DCP DSOFT DPOLY DLS

Room: 109

**B05. *Focus* The Chemical Physics of Molecular Polaritons II. Photophysics II**

Sponsoring Units: DCP DCMP DPOLY

Room: 111

**B25. *Focus* From Responsive Matter to Actuated Structures**

Sponsoring Units: GSNP DPOLY

Room: 402

**B26. *Focus* Mechanics of Cells and Tissues Across Scales II**

Sponsoring Units: DBIO DSOFT DFD DPOLY

Room: 403

**B45. *Focus* Understanding glasses and disordered systems through computational models II**

Sponsoring Units: DCOMP DSOFT GSNP DPOLY

Room: 706

Monday, March 2, 2020 2:30 pm – 5:30 pm

**Session D32: Responsive Polymers, Soft Materials, and Hybrids I**

Sponsoring Units: DPOLY DSOFT DBIO

Chair: Jinhye Bae, University of California, San Diego

Room: 504

2:30PM - 3:06PM	32.00001: <i>Silk-inspiration: hierarchy, assembly, and mechanics in polyurea-polypeptide hybrids</i> <i>Invited Author: LaShanda Korley</i>
3:06PM - 3:18PM	32.00002: Osmotic Swelling Behavior of Ionic Cylindrical Microgels <i>Mohammed Alziyadi, Alan Denton</i>
3:18PM - 3:30PM	32.00003: Swelling-induced Morphological Deformation and Constitutive Relation of Soft Materials in Micro-patterned Hydrogel <i>Jung Gun Bae, Won Bo Lee</i>
3:30PM - 3:42PM	32.00004: Dynamics of 3D polymer gel with reversible linkers <i>Santidan Biswas, Victor V Yashin, Anna Balazs</i>
3:42PM - 3:54PM	32.00005: Phototunable Viscoelasticity in Hydrogels Through Thioester Exchange <i>Benjamin Carberry, Varsha V Rao, Kristi Anseth</i>
3:54PM - 4:06PM	32.00006: Toughening mechanism of tough and self-healing physical hydrogels <i>KUNPENG CUI, Jian Ping Gong</i>
4:06PM - 4:18PM	32.00007: Anisotropic Hollow Microgels That Can Adapt Their Size, Shape, and Softness <i>Anne Nickel, Andrea Scotti, Judith Houston, Jerome Crassous, Jan Skov Pedersen, Walter Richtering</i>
4:18PM - 4:30PM	32.00008: Osmotic Pressure of Permeable Ionic Microgels <i>Alan Denton, Mohammed Alziyadi</i>
4:30PM - 4:42PM	32.00009: Spontaneous deswelling of microgels controlled by counterion clouds <i>Urs Gasser, Andrea Scotti, Alberto Fernandez-Nieves</i>
4:42PM - 4:54PM	32.00010: Tuning Diblock Copolymer Morphologies by Stimuli-Responsive Supramolecular Interactions <i>Xiangyu Zhang, Jing Zong, Dong Meng</i>
4:54PM - 5:06PM	32.00011: On the solvation of elastin-like polypeptides in aqueous mixtures <i>Yani Zhao, Manjesh Kumar Singh, Kurt Kremer, Robinson Cortes Huerto, Debashish Mukherji</i>
5:06PM - 5:18PM	32.00012: Chemomechanical origin of directed gel locomotions driven by internal chemical pulses <i>Qingyu Gao, Lin Ren, Irving R Epstein</i>
5:18PM - 5:30PM	32.00013: Competition between Hydrophobic and Electrostatic Interactions determine pH-responsive Supramolecular Self-assembly <i>Saikat Chakraborty, Christian M. Berac, Pol Besenius, Thomas Speck</i>

Monday, March 2, 2020 2:30 pm – 5:30 pm

**Session D33: Morphology Characterization: Frontier of Scattering and Microscopy**

Sponsoring Units: DPOLY

Chair: Xiaodan Gu, Univ of Southern Mississippi

Room: 505

2:30PM - 2:42PM	33.00001: Computational Reverse-Engineering Analysis for Scattering Experiments (CREASE) on Amphiphilic Block Polymer Solutions <i>Arthi Jayaraman, Daniel J Beltran, Michiel Wessels</i>
2:42PM - 2:54PM	33.00002: Feature Engineering for Small-Angle Scattering Model Selection <i>Yuke Wang, Tyler Martin</i>
2:54PM - 3:06PM	33.00003: Identification of Frank-Kasper Phases in Conformationally Asymmetric Linear Block Copolymer Self-assembly <i>Seungbae Jeon, Taesuk Jun, Seongjun Jo, Hyungju Ahn, Byeongdu Lee, Du Yeol Ryu</i>
3:06PM - 3:42PM	33.00004: Combining Advanced Experimental Methods to Characterization of Polymer Nanocomposites <i>Invited Author: Karen Winey</i>
3:42PM - 3:54PM	33.00005: Deformation Mechanics during Drawing of Ultra-High Molecular Weight Polyethylene Fibers <i>Christopher Henry, Giuseppe Palmese, Nicolas Alvarez</i>
3:54PM - 4:06PM	33.00006: 3D Structure of Grain Boundaries in Tubular Network Block Copolymers <i>Xueyan Feng, Amanda Suarez, Derrick Ong, Kaiqi Yang, Hua Guo, Edwin Thomas</i>
4:06PM - 4:18PM	33.00007: Local density and free volume inhomogeneities govern transport properties in reverse osmosis membranes <i>Michael Geitner, Tyler Culp, Jeffrey D. Wilbur, Steven Jons, Manish Kumar, Enrique D Gomez</i>
4:18PM - 4:30PM	33.00008: Three-Dimensional Imaging the Crystalline Structure of Polypeptoid Nanosheet with Atomic Resolution <i>Xi Jiang, Sunting Xuan, Nan Li, David Prendergast, Ronald Zuckermann, Nitash Balsara</i>
4:30PM - 4:42PM	33.00009: Pushing the resolution limits for imaging conjugated polymers in the transmission electron microscope <i>Brooke Kuei, Enrique D Gomez</i>
4:42PM - 4:54PM	33.00010: Observation of Elongated Nano Domains in Organic Photovoltaic Active Layers with Electric Field Treatment using Cross-Sectional Scanning Tunneling Microscopy and Spectroscopy. <i>Rabindra Dulal, Akshay Iyer, Umar Ghumman, Joydeep Munshi, Aaron Wang, Ganesh Balasubramanian, Wei Chen, Te-Yu Chien</i>
4:54PM - 5:06PM	33.00011: Directly Visualizing Conformations of Bottlebrush Polymers in Bulk Films using Super-Resolution Optical Microscopy <i>Jonathan Chan, Avram Kordon, Zhe Qiang, Muzhou Wang</i>
5:06PM - 5:18PM	33.00012: Kinetically Controlled Morphology in Copolymer-based Hydrogels Crosslinked by Crystalline Nanodomains Determines Efficacy of Ice Inhibition <i>Pablo Sepulveda-Medina, Chao Wang, Bryan Vogt</i>

5:18PM - 5:30PM

33.00013: Morphological Investigations of Anion-Conducting Polymer-Catalyst Interface

*Nora Buggy, Yifeng Du, Mei-Chen Kuo, Bryan Coughlin, Andrew Herring*

Monday, March 2, 2020 2:30 pm – 5:30 pm

### Session D34: Charged and Ion-Containing Polymers

Sponsoring Units: DPOLY

Chair: Moon Jeong Park, Pohang Univ of Sci & Tech

Room: 506

2:30PM - 2:42PM	34.00001: Role of chain architecture and composition on dynamics and ionic solvation in polyether-based electrolytes <i>Peter Bennington, Daniel Sharon, Michael Webb, Chuting Deng, Juan De Pablo, Paul F Nealey, Shrayesh Patel</i>
2:42PM - 2:54PM	34.00002: Self Diffusion Dynamics and Viscoelasticity of Fluorescently Labeled Polymerized Ionic Liquids <i>Qiuqie Zhao, Christopher Evans</i>
2:54PM - 3:06PM	34.00003: First consideration of density scaling of the dynamic and thermodynamic properties in polymerized ionic liquid. <i>Malgorzata Musial, Zaneta Wojnarowska, Shinian Cheng, Adam Holt, Charles M. Roland, Eric Drockenmuller, Marian Paluch</i>
3:06PM - 3:18PM	34.00004: Probing ion solvation and diffusion behavior in polymer electrolytes <i>Daniel Sharon, Peter Bennington, Michael Webb, Chuting Deng, Juan De Pablo, Shrayesh Patel, Paul F Nealey</i>
3:18PM - 3:30PM	34.00005: Charging Neutral Polymer by Simple and Macro Ions in Solution <i>Manuela Ferreira, Benxin Jing, Yingxi Elaine Zhu</i>
3:30PM - 3:42PM	34.00006: Addition of Zwitterions to Single-ion Conducting Ionomers <i>Wenwen Mei</i>
3:42PM - 4:18PM	34.00007: Polymer Electrolytes Containing Solvate Ionic Liquid and Beyond <i>Invited Author: Masayoshi Watanabe</i>
4:18PM - 4:30PM	34.00008: The Overlap Concentration in Strong Polyelectrolytes <i>Mark Stevens, Jon Bollinger, Gary Grest, Michael Rubinstein</i>
4:30PM - 4:42PM	34.00009: Salt Effect on Swelling of Polyelectrolyte Networks with Brush-like Strands <i>Michael Jacobs, Zilu Wang, Andrey Dobrynin</i>
4:42PM - 4:54PM	34.00010: Electrostatic Effects on Charged Block Copolymer Melts <i>Yihao Liang, Boran Ma, Monica Olvera De La Cruz</i>
4:54PM - 5:06PM	34.00011: Transference Numbers of Aqueous Polyelectrolyte Solutions <i>Tyler Lytle, Arun Yethiraj</i>
5:06PM - 5:18PM	34.00012: Hydration Phenomena in Sulfonated Poly(arylene ether sulfone) Membranes <i>Chengyuan Wen, Britannia Vondrasek, Judy Riffle, Jack Lesko, Shengfeng Cheng</i>
5:18PM - 5:30PM	34.00013: Dynamics at Internal Interfaces in Ionizable Polymer Blends <i>Jayme Alger, Manjula Senanayake, Gary Grest, Dvora Perahia</i>

Monday, March 2, 2020 2:30 pm – 5:30 pm

**Session D35: Biopolymers, Polymer Bioconjugates, and Their Self-Assembled Phases**

Sponsoring Units: DPOLY DSOFIT

Chair: Thomas Angelini, University of Florida

Room: 507

2:30PM - 2:42PM	35.00001: Asymmetric Lipid/Polymer Vesicles <i>Yuting Huang</i>
2:42PM - 2:54PM	35.00002: Polyelectrolyte dynamical self-consistent field theory <i>Sylvia Luyben, Robert Wickham</i>
2:54PM - 3:06PM	35.00003: Dynamics of self-interacting bio-inspired polymers in shear flows <i>Helman Amaya-Espinosa, Alfredo Alexander-Katz, Camilo Aponte-Santamaría</i>
3:06PM - 3:18PM	35.00004: Computational prediction of molecular shape through the assembly of sequence-controlled polymers <i>Davindra Tulse, David Simmons</i>
3:18PM - 3:30PM	35.00005: Bottom-up Coarse-grained Molecular Simulations of Peptoids with Enhanced Sampling <i>Mingfei Zhao, Janani Sampath, Christopher J Mundy, Jim Pfaendtner, Andrew L Ferguson</i>
3:30PM - 3:42PM	35.00006: Solution Self-Assembly of Block Copolypeptoids with a Crystallizable Core-Forming Block <i>Naisheng Jiang, Tianyi Yu, Shuo Qian, Igor Kevin Mkam Tsengam, Vijay T John, Donghui Zhang</i>
3:42PM - 4:18PM	35.00007: Transforming protein-polymer conjugate purification by tuning protein solubility <i>Invited Author: Alan Russell</i>
4:18PM - 4:30PM	35.00008: Characterization of Fiber Formation of Sugar-based Poly(D-glucose carbonate) Amphiphilic Block Copolymers in Solution <i>Jee Young Lee, Yue Song, Karen L Wooley, Darrin John Pochan</i>
4:30PM - 4:42PM	35.00009: Computationally designed bundlemers for hybrid physical-covalent assembly of rigid polymers <i>Nairiti Sinha, Grethe Vestergaard Jensen, Darrin John Pochan</i>
4:42PM - 4:54PM	35.00010: Random Heteropolymer Self-Assembly into Protein-Like Nanoparticles <i>Shayna Hilburg, Ting Xu, Alfredo Alexander-Katz</i>
4:54PM - 5:30PM	35.00011: Utilizing nonlinearity of biopolymer matrix in both intracellular and extracellular spaces <i>Invited Author: Ming Guo</i>

**Monday, March 2, 2020 2:30 pm – 5:30 pm**

**Session D68: Highly Loaded and Morphologically Enhanced Polymer Nanocomposites**

Sponsoring Units: DPOLY

Chair: Zahra Fakhraai, University of Pennsylvania

Room: Four Seasons 4

2:30PM - 3:06PM	68.00001: Infiltration of polymers into nanoparticle packings to produce highly loaded nanocomposites <i>Invited Author: Daeyeon Lee</i>
3:06PM - 3:42PM	68.00002: Biomimetic Nanocomposites <i>Invited Author: Nicholas Kotov</i>
3:42PM - 4:18PM	68.00003: Polymer Processing at Liquid Crystal-Air Interfaces <i>Invited Author: Laura Bradley</i>
4:18PM - 4:54PM	68.00004: Driving and manipulating polymer degradation in nanocomposites via photothermal heating of the particle <i>Invited Author: Laura Clarke</i>
4:54PM - 5:30PM	68.00005: Biological Blueprints Towards Next Generation Multiscale Composites <i>Invited Author: David Kisailus</i>



Monday, March 2, 2020 2:30 pm – 5:30 pm

### Session D70: Rheology and Dynamics of Polymer Liquids and Glasses

Sponsoring Units: DPOLY DSOFT GSNP DBIO

Chair: Thomas O'Connor, Sandia National Laboratories

Room: 208

2:30PM - 2:42PM	70.00001: Molecular Simulations of Poly[ <i>n</i> ]catenane Dynamics and Rheology <i>Phillip Rauscher, Kenneth Schweizer, Stuart J Rowan, Juan De Pablo</i>
2:42PM - 2:54PM	70.00002: Graft Polymers and Entanglements: From Linear Chains to Filaments <i>Andrey Dobrynin, Heyi Liang, Gary Grest</i>
2:54PM - 3:06PM	70.00003: Effect of Head-to-Head Association/Dissociation on Relaxation of Entangled Chains <i>Hiroshi Watanabe, Yumi Matsumiya, Youngdon Kwon</i>
3:06PM - 3:18PM	70.00004: Unified analytic expressions for the entanglement length, tube diameter, and plateau modulus in polymer melts <i>Robert Hoy, Martin Kröger</i>
3:18PM - 3:30PM	70.00005: The Source of Strain Hardening in Glassy Polymers Investigated by Molecular Dynamics and Brownian Dynamics Simulations <i>Ronald Larson, Robert Hoy, Soroush Moghadam, Weizhong Zou</i>
3:30PM - 3:42PM	70.00006: Predicting time-temperature-superposition breakdown near the glass transition with the Heterogeneous Rouse Model <i>David Simmons</i>
3:42PM - 3:54PM	70.00007: Relationship Between Large Amplitude Oscillatory Strain (LAOS) Experiments and Commercial Pressure Sensitive Adhesives Applications Testing <i>Alan Nakatani, Sipei Zhang, Sehban Ozair, Asghar Peera, Owen Young, Kylie Manning, Cachae Pearson, Himal Ray</i>
3:54PM - 4:06PM	70.00008: Polymer rheology predictions from first-principles using the slip-link model <i>Diego Becerra, Andres Cordoba, Maria Katzarova, Marat Andreev, David Christopher Venerus, Jay Schieber</i>
4:06PM - 4:18PM	70.00009: <i>A priori</i> Determination of the Extensional Viscosity of Polydisperse Linear Polymer Melts <i>John Dorgan, John Szfranski</i>
4:18PM - 4:54PM	70.00010: Thinning and break up of freestanding polymer solutions <i>Invited Author: Jan Vermant</i>
4:54PM - 5:06PM	70.00011: Uniaxial Extensional Rheology of Associating Polymers: from Processing to Performance <i>Zachary Hinton, Nicolas Alvarez</i>
5:06PM - 5:18PM	70.00012: Liquid to soft solid transition in block polymers via low strength magnetic fields <i>Karthika Suresh, Michelle A Calabrese</i>
5:18PM - 5:30PM	70.00013: Multiscale simulation of a well-entangled polymer melt flow in between two coaxial cylinders under non-isothermal condition <i>Yuji Hamada, Takeshi Sato, Takashi Taniguchi</i>

**Monday, March 2, 2020, 2:30 pm – 5:30 pm**

Additional DPOLY Co-Sponsored Sessions

**D05. Focus Electronic-Vibrational Coupling in Light Harvesting I. Photosynthetic Light Harvesting**

Sponsoring Units: DCP DAMOP DCOMP DPOLY

Room: 111

**D26. Focus Mechanics of cells and tissues across scales III**

Sponsoring Units: DBIO DPOLY DSOF GSNP

Room: 403

**D30. Focus Self-Limiting Assemblies I: Functional Structures in Biology**

Sponsoring Units: DSOF DPOLY DBIO

Room: 502

**D31. Focus Wetting and Adhesion of Soft Materials: Dynamics and Instability I**

Sponsoring Units: DSOF GSNP DPOLY

Room: 503

**D45. Focus Understanding glasses and disordered systems through computational models III**

Sponsoring Units: DCOMP DSOF GSNP DPOLY

Room: 706

**D58. Focus DFT and Beyond III**

Sponsoring Units: DCP DCOMP DPOLY DCOMP

Room: Mile High Ballroom 3B

**Monday, March 2, 2020, 5:45 pm – 6:45 pm**

**E34. Open Discussion on Polymer Science and Polymer Scientists in the Age of Global Plastics Pollution**

Chair: Andy Lovinger

Room: 506

Tuesday, March 3, 2020 8:00 am – 11:00 am

**Session F32: Responsive Polymers, Soft Materials, and Hybrids II**

Sponsoring Units: DPOLY DSOFT DBIO

Chair: Jinhye Bae, University of California, San Diego

Room: 504

8:00AM - 8:36AM	32.00001: BREAK
8:36AM - 8:48AM	32.00002: Detection of Polypeptide Conformational Transitions in Solution via Sound Velocity and Optical Rotation <i>Alyssa Blake, Graham Parkinson, Paul Russo</i>
8:48AM - 9:00AM	32.00003: Giant hyaluronan polymer brushes display polyelectrolyte brush polymer physics behavior <i>Jessica Faubel, Rhiddi P Patel, Jennifer Curtis, Blair K Brettmann</i>
9:00AM - 9:12AM	32.00004: <i>Detecting Bacteria with Plasmonic Microcapsules</i> <i>Remi Dreyfus, Céline Burel, Christopher B Murray, Bertrand Donnio</i>
9:12AM - 9:48AM	32.00005: Enzyme-Responsive Materials for Regenerative Medicine <i>Invited Author: Sarah Heilshorn</i>
9:48AM - 10:00AM	32.00006: Shape Control of Charge-patterned Nanocontainers <i>Nicholas Brunk, Vikram Jadhao</i>
10:00AM - 10:12AM	32.00007: A simple mechanical model for synthetic catch bonds <i>Kerim Dansuk, Sinan Keten</i>
10:12AM - 10:24AM	32.00008: Towards Tumor pH Detection Using Plain Radiography: An Injectable pH-Responsive Polyacrylic Acid Based Hydrogel Biosensor <i>Sachindra Kiridena, Uthpala Wijayaratna, Md. Arifuzzaman, Jeffrey N. Anker</i>
10:24AM - 10:36AM	32.00009: Modulation of hydrogel biophysical properties using photoadaptable chemistry improves formation of intestinal organoids <i>Max Yavitt, Tobin Brown, Ella Hushka, Peter Dempsey, Kristi Anseth</i>
10:36AM - 10:48AM	32.00010: Biosensor physics: DNA folding in a crowded environment <i>Mark Taylor, Wolfgang Paul</i>
10:48AM - 11:00AM	32.00011: Effect of Nanoparticle Surface Functionality on Magnetic and Interfacial Properties of Iron Oxide–Poly(ethylene oxide) Nanocomposites <i>Donovan Weiblen, Grace L Gionta, Deniz Rende, Pinar Akcora, Rahmi Ozisik</i>

Tuesday, March 3, 2020 8:00 am – 11:00 am

**Session F33: Morphology Characterization: Resonant X-ray Scattering**

Sponsoring Units: DPOLY

Chair: Cheng Wang, Lawrence Berkeley National Laboratory

Room: 505

8:00AM - 8:36AM	33.00001: BREAK
8:36AM - 9:12AM	33.00002: Polymer Morphology Measurement by Polarized Resonant Soft X-ray Scattering <i>Invited Author: Dean DeLongchamp</i>
9:12AM - 9:24AM	33.00003: 12-ID – Soft Matter Interfaces (SMI) – A new resonant tender x-rays scattering Beamline at NSLS II <i>Guillaume Freychet</i>
9:24AM - 9:36AM	33.00004: Molecular orientation in polyamide reverse osmosis membranes revealed by polarized resonant soft x-ray scattering <i>Peter Beaucauge</i>
9:36AM - 9:48AM	33.00005: Label-free characterization of aqueous molecular micelle nanostructure and dynamics via in-situ RSoXS <i>Terry McAfee, Brian Akira Collins, Isvar Cordova, Cheng Wang, Thomas Ferron, Phillip Pickett</i>
9:48AM - 10:00AM	33.00006: Probing Buried Chemical Profiles in Novel EUV Resists with Energy-Tunable X-Rays <i>Isvar Cordova, Luke Long, Guillaume Freychet, Cheng Wang, Patrick Naulleau</i>
10:00AM - 10:12AM	33.00007: Revealing Strain-Induced Conjugated Polymer Behaviors with Soft X-Ray Scattering and Spectroscopy <i>Wenkai Zhong, Gregory Su, Qin Hu, Feng Liu, Wanli Yang, Thomas Russell, Cheng Wang</i>
10:12AM - 10:24AM	33.00008: Polarized resonant soft X-ray scattering reveals local chain orientation in polymer-grafted nanoparticles <i>Subhrangsu Mukherjee, Jason Streit, Richard Arthur Vaia, Dean DeLongchamp</i>
10:24AM - 10:36AM	33.00009: Combining spectroscopy with DFT for optical models of polarized RSoXS to reveal molecular alignment in nanostructures <i>Victor Murcia, Brian Akira Collins</i>
10:36AM - 10:48AM	33.00010: Control of solvent aggregation to impact active layer morphology and enhance performance in non-fullerene organic solar cells <i>Guoyan Zhang, Sintu Rongpipi, Brooke Kuei, Enrique D Gomez</i>
10:48AM - 11:00AM	33.00011: Controlling Ionomer Phase Separation Through Side-Chain Engineering <i>Gregory Su, Isvar Cordova, William White, Matthew Lindell, Michael Yandrasits, Lawrence Renna, Jun Feng, Shane Ardo, Cheng Wang, Ahmet Kusoglu</i>

Tuesday, March 3, 2020 8:00 am – 11:00 am

### Session F34: 3D Printing of Polymers and Soft Materials I

Sponsoring Units: DPOLY DSOFTE GSNP DFD

Chair: Anthony Kotula, National Institute of Standards and Technology

Room: 506

8:00AM - 8:36AM	34.00001: BREAK
8:36AM - 8:48AM	34.00002: Re-Printable, Self-Healing Polymer Networks <i>Svetlana Sukhishvili, Frank Gardea, Qing Zhou</i>
8:48AM - 9:00AM	34.00003: Reactive Processing in Extrusion based Polymeric 3D Printing with Surface Segregating Additives <i>Neiko Levenhagen, Mark Dadmun</i>
9:00AM - 9:12AM	34.00004: 3D Printing Polylactic Acid: modelling residual alignment, annealing and templated crystallinity <i>Claire McIlroy, Richard S Graham, Dario Cavallo, Jon Seppala, Anthony Kotula</i>
9:12AM - 9:24AM	34.00005: Determination of polymer chain orientation in 3D printed filaments using Polarized Raman spectroscopy and Birefringence <i>Nora Hassan, Jonathan Seppala, Anthony Kotula, Angela Hight Walker, Kalman Migler</i>
9:24AM - 9:36AM	34.00006: Mechanical Properties of an Additively Manufactured Cyanate Ester <i>Marissa Giovino, Hilmar Koerner, Jeffery Baur</i>
9:36AM - 9:48AM	34.00007: Effect of Chain Alignment and Entanglements on Thermal Welding in Fused Filament Fabrication <i>Marco Galvani, Mark Robbins</i>
9:48AM - 10:24AM	34.00008: 3D Printing of Polymers and Soft Materials <i>Invited Author: Jon Seppala</i>
10:24AM - 10:36AM	34.00009: Using Eigenvector Centrality to Predict the Mechanical Properties of Structured Materials <i>Cynthia Welch, Paul Welch, Brian Patterson, Matthew Herman, Lindsey Kuettner</i>
10:36AM - 10:48AM	34.00010: Mechanical Enhancement of Polydopamine Nano-Coatings via Thermal Annealing <i>Katerina G Malollari, Peyman Delparastan, Tanner Fink, Helen Zha, Phillip B Messersmith</i>
Author Not Attending	34.00011: The Role of Ionization in Thermal Transport of Solid Polyelectrolytes <i>Tengfei Luo, Xingfei Wei</i>

Tuesday, March 3, 2020 8:00 am – 11:00 am

### Session F35: Biopolymer Structures and Assemblies

Sponsoring Units: DPOLY DSOFIT

Chair: John Dorgan, Michigan State Univ

Room: 507

8:00AM - 8:36AM	35.00001: BREAK
8:36AM - 8:48AM	35.00002: From Modeling Free Chains with the Rosenbluth Algorithm to Modeling Rigid, Compact, and Overlapped Chains with Our Developed Algorithm <i>Ebtisam Aldais, Scott Russell Crittenden</i>
8:48AM - 9:00AM	35.00003: Simulations of Grafted Methylcellulose Chains in Solution <i>Vaidyanathan Sethuraman, Kevin D Dorfman</i>
9:00AM - 9:12AM	35.00004: Random Copolymer Complexation with Proteins and Possible Applications <i>Jeremy Wang, Baofu Qiao, Trung Nguyen, John Torkelson, Monica Olvera De La Cruz</i>
9:12AM - 9:24AM	35.00005: Synthesis and Self-assembly of Saccharide-Polystyrene Hybrid Block Copolymers <i>Minji Seo, Sheng Li</i>
9:24AM - 9:36AM	35.00006: Polyvinyl alcohol composite hydrogels containing mixtures of cellulose nanocrystals and chitin nanofibers <i>Cameron Irvin, Chinmay Satam, Paul Russo, James Carson Meredith, Meisha Shofner</i>
9:36AM - 9:48AM	35.00007: Hierarchically Organized Structure of Electrospun Nanofibers from Computationally Designed Peptide Bundlers <i>Kyunghee Kim, Christopher J. Kloxin, Jeffery G Saven, Darrin John Pochan</i>
9:48AM - 10:00AM	35.00008: Chitin Nanocrystals confined to polymer microgels. <i>Sujin Lee, Elsa Reichmanis, Jung O Park, Mohan Srinivasarao</i>
10:00AM - 10:12AM	35.00009: Enhanced mechanical properties of fatty acid-derived thermoplastic elastomers through incorporation of ionic interactions <i>Megan Robertson, Wenye Ding, Josiah Hanson</i>
10:12AM - 10:24AM	35.00010: Characterizing Network Structure in Lignin-Based Hydrogel Composites for Aqueous Separations <i>Nicholas Gregorich, Junhuan Ding, Mark C. Thies, Eric M Davis</i>
10:24AM - 10:36AM	35.00011: Gelation and fibril formation of poly( <i>N</i> -isopropylacrylamide)-grafted methylcellulose <i>McKenzie Coughlin, Jerrick Edmund, S. Piril Ertem, Svetlana Morozova, Peter Schmidt, Theresa M Reineke, Frank S Bates, Timothy Lodge</i>
10:36AM - 10:48AM	35.00012: Anomalous Hyperpolarization observed in polyacrylate gels and their implications on polyelectrolyte theory <i>Susan Kozawa, Anne Walker, Jonah Scott-McKean, Jeanette Garr, Chris Flask, Michael Hore, Alberto Costa, Gary Wnek</i>
10:48AM - 11:00AM	35.00013: Strain-Field Analysis of Subsonic and Supersonic Cracks in Filled Elastomers <i>Thanh-Tam Mai, Kenji Urayama</i>

Tuesday, March 3, 2020 8:00 am – 11:00 am

**Session F68: Polymer Physics Prize Symposium**

Sponsoring Units: DPOLY

Chair: Kurt Kremer, Max Planck Inst

Room: Four Seasons 4

8:00AM - 8:36AM	68.00001: Statistical Mechanics and Phase Transitions of Semiflexible Polymers <i>Invited Author: Kurt Binder</i>
8:36AM - 9:12AM	68.00002: Cartilage-inspired superlubricious hydrogels <i>Invited Author: Jacob Klein</i>
9:12AM - 9:48AM	68.00003: Some Thoughts On Polyelectrolyte Persistence Length <i>Invited Author: Philip Pincus</i>
9:48AM - 10:24AM	68.00004: Conformational properties and phase behavior of polymers in ionic liquids <i>Invited Author: Arun Yethiraj</i>
10:24AM - 11:00AM	68.00005: Phase transitions in single grafted molecules <i>Invited Author: Friederike Schmid</i>

**Tuesday, March 3, 2020, 8:00 am – 11:00 am**

Additional DPOLY Co-Sponsored Sessions

**F05. *Focus* The Chemical Physics of Molecular Polaritons III. Vibrational strong coupling**

Sponsoring Units: DCP DCMP DPOLY

Room: 111

**F22. *Focus* Biomaterials I: Paleo and Modern Structure and Function in Animals**

Sponsoring Units: DBIO DCP DMP DPOLY

Room: 303

**F26. *Focus* Mechanics of cells and tissues across scales IV**

Sponsoring Units: DBIO DSOFT DPOLY GSNP

Room: 403

**F30. *Focus* Self-Limiting Assemblies II: Programmable Assemblies**

Sponsoring Units: DSOFT DPOLY DBIO

Room: 502

**F31. *Focus* Wetting and Adhesion of Soft Materials: Dynamics and Instability II**

Sponsoring Units: DSOFT GSNP DPOLY

Room: 503



Tuesday, March 3, 2020 11:15 am – 2:15 pm

**Session G19: Revealing the Microscopic Dynamics Driving Nonlinear Polymer Flows**

Sponsoring Units: DPOLY

Chair: Mark Robbins, Johns Hopkins University

Room: 207

11:15AM - 11:51AM	19.00001: Self-Healing Recovery and Dynamics of Associating Polymers under Uniaxial Extension <i>Invited Author: Nicolas Alvarez</i>
11:51AM - 12:27PM	19.00002: Decoding the viscoelastic response of monodisperse and bidisperse linear polymers under uniaxial extension <i>Invited Author: Evelyn van Ruymbeke</i>
12:27PM - 1:03PM	19.00003: Evidence of Flow-Induced Crystallization in Material Extrusion Additive Manufacturing <i>Invited Author: Anthony Kotula</i>
1:03PM - 1:39PM	19.00004: How the Microscopic Dynamics of Different Polymer Architectures Drive Nonlinear Extensional Flows <i>Invited Author: Thomas O'Connor</i>
1:39PM - 2:15PM	19.00005: Polymer Scission in Contraction Flows <i>Invited Author: Peter Olmsted</i>

Tuesday, March 3, 2020 11:15 am – 2:15 pm

**Session G32: Responsive Polymers, Soft Materials, and Hybrids III**

Sponsoring Units: DPOLY DSOFT DBIO

Chair: Jinhye Bae, University of California, San Diego

Room: 504

11:15AM - 11:27AM	32.00001: Ordering hard-sphere particle suspensions by medium crystallization: Effect of size and interaction strength <i>Vianney Gimenez-Pinto</i>
11:27AM - 11:39AM	32.00002: Exploring Solution Behavior of Fully Rigid “Block Copolymers” with Sphere-Rod Molecular Architecture <i>JIANCHENG LUO, Tong Liu, Stephen Cheng, Tianbo Liu</i>
11:39AM - 11:51AM	32.00003: Stimuli-responsive phase behavior of block copolymers in ionic liquids <i>Claire Seitzinger, Cecilia C Hall, Timothy Lodge</i>
11:51AM - 12:03PM	32.00004: Exploring the Limits of Actuation Force Output of Stretch-based Deformation of Liquid Crystalline Elastomers <i>JOSELLE MCCRACKEN, Kelsey M Lynch, Timothy J White</i>
12:03PM - 12:15PM	32.00005: Electro-responsive Ionic Liquid Crystal Elastomers <i>Chenrun Feng, Chathuranga Prageeth Rajapaksha, Vikash Kaphle, Bjorn Lussem, Thein Kyu, Antal Istvan Jakli</i>
12:15PM - 12:27PM	32.00006: Voltage-induced deformation in soft dielectric elastomers <i>Abhishek Ghosh, Sumit Basu</i>
12:27PM - 1:03PM	32.00007: Tough, Responsive and Soft Biomaterials for Tissue Repair and Regeneration <i>Invited Author: Jianyu Li</i>
1:03PM - 1:15PM	32.00008: Flexoionic effect of Ionic Liquid Crystal Elastomers <i>Chathuranga Prageeth Rajapaksha, Chenrun Feng, Camilo Piedrahita, Hamad Albehajian, Vikash Kaphle, Pushpa Paudel, Bjorn Lussem, Thein Kyu, Antal Istvan Jakli</i>
1:15PM - 1:27PM	32.00009: Statistical field theory model for Liquid Crystal Elastomers <i>Pratik Khandagale, Kaushik Dayal, Carmel Majidi</i>
1:27PM - 1:39PM	32.00010: Branching out and back: Reconfigurable nematic drops driven by molecular heterogeneity <i>Wei-Shao Wei, Yu Xia, Sophie A Ettinger, Yuchen Wang, Shu Yang, Arjun G Yodh</i>
1:39PM - 1:51PM	32.00011: Imaging crack propagation in tough model gels by ultrasound elastography <i>Heiva Le Blay, Thomas Deffieux, Mickael Tanter, Alba Marcellan</i>
1:51PM - 2:03PM	32.00012: Photoisomerization in a Glassy Matrix: Predicting a Broad Distribution of Dynamics with Machine Learning <i>Kenneth Salerno, Timothy W Sirk, Juan De Pablo</i>
2:03PM - 2:15PM	32.00013: Response of Polymer Conformations to Crowded Environments <i>Kurt VanDonselaar, Matthew Kurtti, Alan Denton</i>

Tuesday, March 3, 2020 11:15 am – 2:15 pm

**Session G33: Polymer Nanocomposites: Structure and Property**

Sponsoring Units: DPOLY DSOFT GSNP

Chair: Shiwang Cheng, Michigan State Univ

Room: 505

11:15AM - 11:27AM	33.00001: Silicone-Iron Oxide Nanocomposite Encapsulants for Common Mode Noise Reduction in Switching Power Electronics <i>Hayden Carlton, Reece Whitt, Amol Deshpande, Sarah Myane, Noah Akey, David Huitink</i>
11:27AM - 11:39AM	33.00002: Flexible Textured Nanocomposite for Energy Harvesting Applications <i>Viney Ghai, Harpreet Singh, Prabhat K Agnihotri</i>
11:39AM - 11:51AM	33.00003: Nanoparticle Assembly Modulated by Biobased Polymers and Its Coating Application <i>Emily Olson, Yifan Li, Fang-Yi Lin, Ana Miller, Fei Liu, Ayuna Tsyrenova, Greg Curtzwiler, Keith Vorst, Eric Cochran, Shan Jiang</i>
11:51AM - 12:03PM	33.00004: Coarse-grained molecular dynamics simulations on mechanical properties of polymer composites for bulk heterojunction solar cells <i>Yuta Yoshimoto, Sou Sugiyama, Toshihiro Kaneko, Shu Takagi, Ikuya Kinefuchi</i>
12:03PM - 12:15PM	33.00005: Nanoparticle Templating of Ultrathin and High Density 6 nm Pore Arrays <i>Grayson Jackson, Xiao-Min Lin, Heinrich M. Jaeger</i>
12:15PM - 12:27PM	33.00006: Gas Transport of Self-assembled Polymer Nanocomposites with Binary Nanoparticle Size <i>Sophia Chan, Mayank Jhalaria, Andrew Jimenez, Sebastian T Russell, Brian C Benicewicz, Sanat Kumar</i>
12:27PM - 12:39PM	33.00007: Polymer Composites of Two-Dimensional Layered Materials for Structural Applications <i>Sehmus Ozden, Nikita S. Dutta, Katelyn Randazzo, Craig Arnold, Rodney Priestley</i>
12:39PM - 12:51PM	33.00008: Mesostructured Metal Superconductors via Block Copolymer Nanocomposites: Quantum Metamaterials from Soft Matter <i>Randal Thedford, Sol Michael Gruner, Ulrich Wiesner</i>
12:51PM - 1:03PM	33.00009: Experiments and Simulations of Nanoplate String Assembly in Lamellar Diblock Copolymer <i>Russell Composto, nadia krook, Christian Tabezki, Kevin Yager, Katherine Elbert, Christopher B Murray, Robert Riggleman</i>
1:03PM - 1:15PM	33.00010: Molecular engineering of graft and matrix polymers for tuning grafted particle dispersion in polymer nanocomposites: A theory and simulation study <i>Arjita Kulshreshtha, Arthi Jayaraman</i>
Author Not Attending	33.00011: Polymer grafted nanoparticles on Polymer Films: Entropic and Enthalpic effects on structure and dynamics <i>Jaydeep Basu, Nimmi Das Anthuparambil, Aparna Swain</i>
1:27PM - 1:39PM	33.00012: Gradient-Based Explicit Theoretical Framework for Simulation of Block Copolymer-Nanoparticle Co-assembly <i>Daniil Bochkov, Frederic Gibou</i>
1:39PM - 2:15PM	33.00013: Relating Entanglements and Toughness in Model Polymer-Grafted NPs <i>Invited Author: Lisa Hall</i>

Tuesday, March 3, 2020 11:15 am – 2:15 pm

**Session G34: Machine Learning and Data in Polymer Physics II**

Sponsoring Units: DPOLY DBIO DCOMP

Chair: Tyler Martin, National Institute of Standards and Technology

Room: 506

11:15AM - 11:51AM	34.00001: Machine Learning and Data in Polymer Physics Research - Interpretation of Experiments, Model Development, and Enhanced Sampling <i>Invited Author: Juan De Pablo</i>
11:51AM - 12:03PM	34.00002: Neural Network Accelerated Self-Consistent Field Theory <i>Hejin Huang, Karim Gadelrab, Alfredo Alexander-Katz</i>
12:03PM - 12:15PM	34.00003: Neural network for phase diagrams of polymer-containing liquid mixtures <i>Issei Nakamura</i>
12:15PM - 12:27PM	34.00004: Predicting the glass transition behaviors of polymers via integration of molecular simulations, theory, and machine learning <i>Wenjie Xia, Amirhadi Alesadi</i>
12:27PM - 12:39PM	34.00005: Extracting molecular mechanisms of shear-thinning of liquids at high strain rates using machine learning <i>Vikram Jadhao, JCS Kadupitiya</i>
12:39PM - 12:51PM	34.00006: Hybrid machine learning/materials science modeling for semi-crystalline polymer during film fabrication process <i>Jian Yang, Teresa Karjala, Jonathan Mendenhall, Valeriy Ginzburg, Rajen Patel, Fawzi Hamad, Elva Lugo, Pavan Valavala</i>
12:51PM - 1:03PM	34.00007: Developing Databases for Polymer Informatics <i>Roselyne Tchoua, Zhi Hong, Debra Audus, Shrayesh Patel, Logan Ward, Kyle Chard, Juan De Pablo, Ian Foster</i>
1:03PM - 1:39PM	34.00008: Data Science and Machine Learning for polymer films and beyond <i>Invited Author: Daniela Ushizima</i>
1:39PM - 1:51PM	34.00009: Parameter Estimation for Spatio-Temporal Models using Bayesian Optimisation and Gaussian Processes <i>Nigel Clarke, Joao Cabral, Richard Wilkinson, Wil Ward, Sebastian Pont</i>
1:51PM - 2:03PM	34.00010: Evolutionary couplings detect side-chain interactions in protein structures <i>Adam J. Hockenberry, Claus Wilke</i>
2:03PM - 2:15PM	34.00011: Tracking Accelerated Aging of Cross-Linked Polyethylene Pipes by Applying Machine Learning Concepts to Infrared Spectra <i>Melanie Hiles, Joseph D'Amico, Benjamin Morling, Fatemeh Abbasi, Michael Grossutti, John Dutcher</i>

Tuesday, March 3, 2020 11:15 am – 2:15 pm

**Session G35: Padden Award Symposium**

Sponsoring Units: DPOLY

Chair: Ramanan Krishnamoorti, Univ of Houston

Room: 507

11:15AM - 11:27AM	35.00001: Photo-induced Melting of Semi-Crystalline Polymers via Azobenzene Isomerization <i>Alexa Kuenstler, Ryan Hayward</i>
11:27AM - 11:39AM	35.00002: Materials by design for hairy nanoparticle assemblies <i>Nitin Hansoge, Sinan Keten</i>
11:39AM - 11:51AM	35.00003: Multiscale Polymer and Nanoparticle Dynamics in Attractive Polymer Nanocomposite Melts <i>Eric Bailey, Russell Composto, Karen Winey</i>
11:51AM - 12:03PM	35.00004: Polymers under Extreme Nanoconfinement <i>Haonan Wang, Yiwei Qiang, Jyo Lyn Hor, Ahmad Arabi Shamsabadi, Prantik Mazumder, Daeyeon Lee, Zahra Fakhraai</i>
12:03PM - 12:15PM	35.00005: Deformation response of a two-dimensional polymer <i>Beatrice Soh, Patrick Doyle</i>
12:15PM - 12:27PM	35.00006: Decoupling the role of entanglements and mobility in the mechanics of ultrathin polymer glasses <i>R. Konane Bay, Alfred J Crosby</i>
12:27PM - 12:39PM	35.00007: Influence of Polymer Polarity on Ion Transport in Polymer Electrolytes <i>Bill Wheatle, Nathaniel A Lynd, Venkatraghavan Ganesan</i>
12:39PM - 12:51PM	35.00008: Solvation-Site and Dielectric Control of Ion Conduction in Polymer Electrolytes <i>Nicole Michenfelder-Schauser, Douglas Grzetic, Glenn H Fredrickson, Ram Seshadri, Rachel A Segalman</i>
12:51PM - 1:03PM	35.00009: Self-assembly of Salt-Doped Ternary Polymer Blends <i>Shuyi Xie, Timothy Lodge</i>
1:03PM - 1:15PM	35.00010: SANS Partial Structure Factor Analysis for Determining Protein-Polymer Interactions in Semidilute Solution <i>Helen Yao, Aaron Huang, Bradley Olsen</i>
1:15PM - 1:27PM	35.00011: Self-regulating metal cross-linked hydrogels via competition <i>Seth Cazzell, Niels Holten-Andersen</i>
1:27PM - 1:39PM	35.00012: Deciphering Low-Temperature Dielectric Relaxation of a Series of Amorphous Polymers <i>Daniel Wilcox, Grigori Medvedev, Hosup Song, James M Caruthers, Bryan Boudouris</i>

**Tuesday, March 3, 2020, 11:15 am – 2:15 pm**

Additional DPOLY Co-Sponsored Sessions

**G04. Focus Coherent Nonlinear Optical Microscopy II**

Sponsoring Units: DCP DSOFD DPOLY DLS

Room: 109

**G05. Focus Electronic-Vibrational Coupling in Light Harvesting II. Excitons, Polarons, Perovskites, and Non-Adiabatic Dynamics**

Sponsoring Units: DCP DAMOP DCMP DPOLY

Room: 111

**G30. Self-Limiting Assemblies III: Soft Assemblies and In and Out of Equilibrium**

Sponsoring Units: DSOFD DPOLY DBIO

Room: 502

**G58. Focus DFT and Beyond V**

Sponsoring Units: DCP DCOMP DPOLY DCMP

Room: Mile High Ballroom 3B

Tuesday, March 3, 2020 2:30 pm – 5:30 pm

### Session J32: Dynamics of Glassy Polymers Under Nanoscale Confinement I

Sponsoring Units: DPOLY DSOFT DCP

Chair: Robert Riggleman, University of Pennsylvania

Room: 504

2:30PM - 3:06PM	32.00001: BREAK
3:06PM - 3:42PM	32.00002: Mobility Gradient of Polymer Chains near a Solid Interface <i>Invited Author: Keiji Tanaka</i>
3:42PM - 3:54PM	32.00003: Direct observation of mobility of thin polymer layers via asymmetric interdiffusion using neutron reflectivity measurements <i>Koji Fukao, Megumi Ooe, Kairi Miyata, Jun Yoshioka, Norifumi L. Yamada</i>
3:54PM - 4:06PM	32.00004: Reconciling Computational and Experimental Trends in the Temperature Dependence of Interfacial Mobility in Polymer Films <i>Jack Douglas, Wengang Zhang, Francis Starr</i>
4:06PM - 4:18PM	32.00005: Ellipsometry Modeling with Gradient in Refractive Index Resolves Unrealistic Density Increases in Thin Polymer Films and Demonstrates Inhomogeneous Film Structure Decoupled from Dynamics <i>Yixuan Han, Connie Roth</i>
4:18PM - 4:30PM	32.00006: Density Measurements of Thin Polymeric Films using Magnetic Levitation <i>Samuel Root, Rui Gao, Shencheng Ge, George M. Whitesides</i>
4:30PM - 4:42PM	32.00007: Polymeric Liquid Layer Densified by Surface Acoustic Wave <i>Tianhao Hou, Jingfa Yang, Wen Wang, Jiang Zhao</i>
4:42PM - 4:54PM	32.00008: Investigating molecular origins of mechanical stress during deformation of polymer glasses: in-situ birefringence measurements <i>DA HUANG, Masoud Razavi, Shiqing Wang</i>
4:54PM - 5:06PM	32.00009: Light-facilitated dewetting in amorphous selenium thin films <i>Aixi Zhang, Danixa Rodriguez, Richard B Stephens, Zahra Fakhraai</i>
5:06PM - 5:18PM	32.00010: Geometry-Dictated Wrinkle Patterns in Vapor-Deposited Thin Films on Liquid Substrates <i>Robert Enright, Laura Bradley</i>
5:18PM - 5:30PM	32.00011: In situ Molecular Aggregation Structure Analyses on Glassy Polymers during Mechanical Deformation <i>Ken Kojio, Aya Fujimoto, Tomoko Kajiwara, Chao-Hung Cheng, Shiori Masuda, Nattanee Dechnarong, Kento Fukada, Kazutaka Kamitani, Atsushi Takahara</i>

Tuesday, March 3, 2020 2:30 pm – 5:30 pm

**Session J33: Thermodynamics and Structures of Microstructured Polymers**

Sponsoring Units: DPOLY

Chair: Sangwoo Lee, Rensselaer Polytechnic Institute

Room: 505

2:30PM - 3:06PM	33.00001: BREAK
3:06PM - 3:18PM	33.00002: Packing Frustration in Block Copolymer Double Gyroids: Is it really all about the tubular domains? <i>Abhiram Reddy, Xueyan Feng, Edwin Thomas, Gregory Grason</i>
3:18PM - 3:30PM	33.00003: Effects of Tacticity on the Formation of Bicontinuous Phases in Diblock Copolymers <i>Chi To Lai, An-Chang Shi</i>
3:30PM - 3:42PM	33.00004: Cylindrical to Lamellar Microdomain Order to Order Transition upon Heating for Upper Critical Ordering Transition Block Copolymer <i>Seonghyeon Ahn, Yeseong Seo, Chao Duan, Lixun Zhang, Wei-hua Li, JinKon Kim</i>
3:42PM - 3:54PM	33.00005: Unique self-assembly behaviors of ABCA tetrablock copolymer <i>Qiong Xie, Wei-hua Li</i>
3:54PM - 4:06PM	33.00006: Tuning Helical Structures via Designed Block Copolymer Systems <i>Mei-jiao Liu, Wei-hua Li</i>
4:06PM - 4:18PM	33.00007: Miscibility Enhancement in Polyisoprene-Polyolefin Block Copolymers via Styrene Incorporation <i>Sravya Jangareddy, Richard Register</i>
4:18PM - 4:30PM	33.00008: Pressure effects on self-assembly in mixtures containing block copolymers with uncharged or zwitterionic architecture <i>Xiang Li, Mingge Zhao, Junhan Cho</i>
4:30PM - 4:42PM	33.00009: Pattern Imprinted Polyacrylonitrile Thin Films Using an Ionic Liquid <i>Chuqing Yuan, Rebecca Barry, Kathryn Beers, Alamgir Karim</i>
4:42PM - 4:54PM	33.00010: Glass Transitions in PS-TiO <sub>2</sub> Nanocomposites <i>Mircea Chipara, Elvia Curiel Izaguirre, Dorina Chipara, Mataz Alcoutlabi</i>
4:54PM - 5:30PM	33.00011: The pliable morphology of block copolymer crystals <i>Invited Author: Edwin Thomas</i>



Tuesday, March 3, 2020 2:30 pm – 5:30 pm

### Session J34: Dillon Medal Symposium

Sponsoring Units: DPOLY

Chair: Richard Register, Princeton University

Room: 506-507

2:30PM - 3:06PM	34.00001: Structured Polymer Colloids by Flash NanoPrecipitation <i>Invited Author: Rodney Priestley</i>
3:06PM - 3:18PM	34.00002: Exploiting supramolecular associations in interpenetrating networks and elastomers <i>LaShanda Korley</i>
3:18PM - 3:30PM	34.00003: Droplet aggregates as model systems for connecting granular systems to continuum mechanics: how few is too few? <i>Kari Dalnoki-Veress, Jean-Christophe Ono-dit-Biot, Johnathan Hoggarth</i>
3:30PM - 3:42PM	34.00004: Evolution of polymer conformation during droplet-to-particle formation <i>Joao Cabral</i>
3:42PM - 3:54PM	34.00005: Gelation of Methylcellulose Chains Versus Methylcellulose Fibers <i>Timothy Lodge, Sveta Morozova, S. Piril Ertem, McKenzie Coughlin, Frank S Bates</i>
3:54PM - 4:06PM	34.00006: Non-linear Deformation of Polymer Grafted Nanoparticles <i>Ramanan Krishnamoorti</i>
4:06PM - 4:18PM	34.00007: Harnessing nanoparticle vibrations to probe surface mobility and glass transition <i>Eunsoo Kang, Bartlomiej Graczykowski, George Fytas, Katelyn Randazzo, Rodney Priestley</i>
4:18PM - 4:30PM	34.00008: Non-Equilibrium Effects in Polymer Nanocomposites <i>Sanat Kumar</i>
4:30PM - 4:42PM	34.00009: Programming surface energy driven Marangoni convection to pattern polymer films <i>Christopher Ellison</i>
4:42PM - 4:54PM	34.00010: Influence of Pore Morphology on the Diffusion of Water in Triblock Copolymer Membranes <i>Dipak Aryal, Michael P Howard, Rituparna Samanta, Segolene Antoine, Rachel A Segalman, Thomas Truskett, Venkatraghavan Ganesan</i>
4:54PM - 5:06PM	34.00011: Enhanced Conductivity <i>via</i> Homopolymer-Rich Pathways in Block Polymer Composite Electrolytes <i>Thomas Epps, Melody A Morris</i>
5:06PM - 5:18PM	34.00012: Comparison of macroscopic and microscopic measurements of segmental dynamics in aging polymer glasses <i>Mark Ediger, Josh Ricci, Trevor Bennin, Enran Xing</i>
5:18PM - 5:30PM	34.00013: Confinement Effects on Dye Diffusivity in Polymer Films Depend on Polymer Molecular Weight: Relation to Fragility-Confinement Effects <i>John Torkelson, Tong Wei, Tian Lan</i>

Tuesday, March 3, 2020 2:30 pm – 5:30 pm

**Session J70: 3D Printing of Polymers and Soft Materials II**

Sponsoring Units: DPOLY DSOFT GSNP DFD

Chair: Jinhye Bae, University of California, San Diego

Room: 208

2:30PM - 3:06PM	70.00001: BREAK
3:06PM - 3:18PM	70.00002: Printing direction dependent microstructures in direct ink writing <i>Leanne Friedrich, Matthew Begley</i>
3:18PM - 3:30PM	70.00003: Polymer Network Formation in Epoxy-Acrylate Dual-Cure Thermoset Resins for Direct Ink Write Additive Manufacturing <i>Leah Appelhans, Jessica Kopatz, Jaclynn Unangst, Adam Cook, Derek Reinholtz</i>
3:30PM - 3:42PM	70.00004: Understanding the structure-property relationships of nanostructured epoxy inks for direct ink writing <i>Deborah Liu, Gavin Donely, Simon A Rogers, Daniel Krogstad</i>
3:42PM - 4:18PM	70.00005: Chemical Approaches to Diversifying the 3D Printing Ecosystem <i>Invited Author: Andrew Boydston</i>
4:18PM - 4:30PM	70.00006: 3D Control of Properties in Single-Material Digital Stereolithography for the Treatment of Growth Plate Injury <i>Asais Camila Uzcatogui, Callie I. Higgins, John Hergert, Archish Muralidharan, Jason Kilgore, Stephanie J. Bryant, Robert R. McLeod</i>
4:30PM - 4:42PM	70.00007: Cure Depth Effects on Photopolymer Reactivity in Stereolithography 3D Printing <i>Anna Smallwood, Rykelle B. Adley, Caius J. Jacott, Chang Ryu</i>
4:42PM - 4:54PM	70.00008: Design and Fabrication of 3D Printed Polymer Composites using Grayscale Stereolithography <i>John Hergert, Asais Camila Uzcatogui, Archish Muralidharan, Robert R. McLeod</i>
4:54PM - 5:06PM	70.00009: High resolution polymer-composite structures using Micro-stereolithography <i>Afra Alketbi, Aikifa Raza, Hongxia Li, Tiejun Zhang</i>
5:06PM - 5:18PM	70.00010: Theory and Implementation of Volumetric 3D Printing <i>Charles Rackson, Maxim Shusteff, Robert R. McLeod</i>
5:18PM - 5:30PM	70.00011: Stiffness can mediate the balance between hydrodynamic forces and avidity to impact the targeting of flexible polymeric nanoparticles in flow <i>Samaneh Farokhirad, Abhay Ranganathan, Jacob Myerson, Vladimir R. Muzykantov, Portonovo Ayyaswamy, David M. Eckmann, Ravi Radhakrishnan</i>

**Tuesday, March 3, 2020, 2:30 pm – 5:30 pm**

Additional DPOLY Co-Sponsored Sessions

**J05. Focus The Chemical Physics of Molecular Polaritons IV. Photophysics 3**

Sponsoring Units: DCP DCMP DPOLY

Room: 111

**J22. Focus Biomaterials II: Paleo and Modern Structure and Function in Animals**

Sponsoring Units: DBIO DCP DMP DPOLY

Room: 303

**J45. Focus Emerging Trends in Molecular Dynamics Simulations and Machine Learning I**

Sponsoring Units: DCOMP GDS DSOFT DPOLY

Room: 706

**J58. Focus DFT and Beyond VI**

Sponsoring Units: DCP DCOMP DPOLY DCMP

Room: Mile High Ballroom 3B

**Tuesday, March 3, 2020, 5:45 pm – 6:45 pm**

**K34. DPOLY Business Meeting**

Room: 506-507

**Tuesday, March 3, 2020, 6:45 pm – 7:45 pm**

**K59. NSF Question & Answer Session on Polymers and Soft Matter**

Chair: Andy Lovinger

Room: 506

Wednesday, March 4, 2020 8:00 am – 11:00 am

### Session L32: Dynamics of Glassy Polymers Under Nanoscale Confinement II

Sponsoring Units: DPOLY DSOFT DCP

Chair: Biao Zuo, Zhejiang Sci-Tech University

Room: 504

8:00AM - 8:36AM	32.00001: Measuring dynamic mechanical properties of thin polymer films <i>Invited Author: Yunlong Guo</i>
8:36AM - 8:48AM	32.00002: An explanation of how nanoconfinement affects the control of local dynamic relaxation <i>Jane E Lipson, Ronald White</i>
8:48AM - 9:00AM	32.00003: Is there a general compensation rule governing the relaxation dynamics of polymeric surface patterns? <i>Sonal Bhadauriya, Christopher M Stafford, Jack Douglas, Alamgir Karim</i>
9:00AM - 9:12AM	32.00004: A simulation study on nonlinear mechanical responses of glassy polymer nanofibers <i>Taejin Kwon, Bong June Sung</i>
9:12AM - 9:24AM	32.00005: Gradient overlap effects in the thin films <i>Asieh Ghanekarade, David Simmons</i>
9:24AM - 9:36AM	32.00006: Dynamical gradients, barrier factorization and interface coupling in thick and thin films of glass-forming liquids <i>Kenneth Schweizer, Anh D. Phan</i>
9:36AM - 9:48AM	32.00007: Thickness dependence of surface glass transition temperature of polymer supported films <i>Jinsong YAN, Jianquan XU, Lu-tao Weng, Ophelia Tsui</i>
9:48AM - 10:00AM	32.00008: Dynamical phase transitions in amorphous thin films <i>Robert Ivancic, Robert Riggleman</i>
10:00AM - 10:12AM	32.00009: Modeling the Glass Transition in Polymers using a Mean-Field "TS2" Model: Bulk and Thin Films <i>Valeriy Ginzburg</i>
10:12AM - 10:24AM	32.00010: Tuning the Effective Viscosity of Random Copolymer films of Styrene and 4-Methoxystyrene by Varying the Copolymer Composition <i>Jianquan XU, Chao LV, binyang DU, Ophelia Tsui</i>
10:24AM - 10:36AM	32.00011: The Glass Transition Behavior and Structural Recovery of 2D Stacked Polystyrene Nanorods <i>Madhusudhan Reddy Pallaka, Sindee L Simon</i>
10:36AM - 10:48AM	32.00012: The Importance of Density in Segmental Dynamics: Applications of the Cooperative Free Volume Rate Model and Connections with the Density Scaling Approach <i>Ronald White, Jane E Lipson</i>

Wednesday, March 4, 2020 8:00 am – 11:00 am

**Session L33: Hierarchical Structural Emergence in Elastomer Nanocomposites: Dispersion, Dynamics, Structure, Modeling, and Simulation I**

Sponsoring Units: DPOLY DSOFT

Chair: Anne-Caroline Genix, Université de Montpellier

Room: 505

8:00AM - 8:12AM	33.00001: Rheological and Electrical Percolation Behavior of Carbon Black Suspended in Propylene Carbonate <i>Jeffrey Richards, Julie Hipp, Norman J. Wagner</i>
8:12AM - 8:24AM	33.00002: Dielectric & Dynamic response of emergent hierarchical filler networks in polymer nanocomposites <i>Kabir Rishi, Ashish Gogia, Greg Beaucage, Vikram Kuppa, Anh Tang</i>
8:24AM - 8:36AM	33.00003: Rheology and Shear-Induced Structural Evolution in Model Conductive Carbon Black Suspensions <i>Julie Hipp, Jeffrey Richards, Norman J. Wagner</i>
8:36AM - 8:48AM	33.00004: Polyisoprene silica nanocomposites and its structure property relationship <i>Deboleena Dhara, Andrew Jimenez, Zaid M Abbas, Morton M Denn, Brian C Benicewicz, Sanat Kumar</i>
8:48AM - 9:00AM	33.00005: Microscopic Origins of Dynamic Mechanical Properties of Filled Rubber Investigated with X-ray Photon Correlation Spectroscopy <i>Dillon Presto, Suresh Narayanan, Bryce Meyer, John Meyerhofer, Sergio Moctezuma, Mark Sutton, Mark Foster</i>
9:00AM - 9:12AM	33.00006: Probing dynamics and crosslink morphology of thermosets during cure via XPCS <i>Edward Trigg, Hilmar Koerner</i>
9:12AM - 9:24AM	33.00007: Influence of Graft Density on Dynamically Coupled Polymer Grafted Nanocomposites <i>Andrew Ehlers, Pinar Akcora, Rahmi Ozisik</i>
9:24AM - 9:36AM	33.00008: The emergence of quasi-sinusoidal nonlinearity in particle-filled polymer solutions <i>Wentao Xiong, Xiaorong Wang</i>
9:36AM - 9:48AM	33.00009: Single Particle Tracking of Sticky and Non-Sticky Nanoparticles in Polymer Melts <i>Jinseok Park, Eric Bailey, Russell Composto, Karen Winey</i>
9:48AM - 10:00AM	33.00010: A Coarse Grained Model for the Simulation of dynamic Properties of Filled Elastomers <i>Mariia Viktorova, Reinhard Hentschke, Hossein Ali Karimi-Varzaneh</i>
10:00AM - 10:12AM	33.00011: The influence of shear rate and adsorbed polymer chain flexibility on thermally stiffening nanocomposites <i>Chen Gong, Pinar Akcora, Rahmi Ozisik</i>
10:12AM - 10:24AM	33.00012: Understanding the Dispersion and Aggregation of fillers in Polymer Nanocomposites using Dissipative Particle Dynamics (DPD) Simulations of Polymer-Filler Blends

*Ashish Gogia, Kabir Rishi, Alex M McGlasson, Greg Beaucage, Vikram Kuppa*

10:24AM - 11:00AM

33.00013: Polymer – nanocomposites at rest and under deformation: structure of the nanofillers, conformation of the chains, and related mechanical reinforcement

*Invited Author: François Boué*

Wednesday, March 4, 2020 8:00 am – 11:00 am

**Session L34: Molecular Design of Polymers: Structure, Mechanics and Thermal Properties**

Sponsoring Units: DPOLY DCOMP

Chair: Joerg Rottler, University of British Columbia

Room: 506

8:00AM - 8:12AM	34.00001: Tunable thermal transport and reversible thermal conductivity switching in topologically networked bio-inspired materials <i>John Tomko, Abdon Pena-francesch, Huihun Jung, Madhusudan Tyagi, Benjamin Allen, Melik Demirel, Patrick Hopkins</i>
8:12AM - 8:24AM	34.00002: A Thermal Resistance Network Model for Heat Conduction of Amorphous Polymers <i>Jun Zhou, Qing Xi, Jixiong He, Nakayama Tsuneyoshi, Yuanyuan Wang, Jun Liu</i>
8:24AM - 8:36AM	34.00003: Improving ductility of glassy semicrystalline polymers by pre-deformation <i>Travis Smith, Masoud Razavi, Shiqing Wang</i>
8:36AM - 9:12AM	34.00004: Low, high, and switchable thermal conductivity in soft materials <i>Invited Author: David Cahill</i>
9:12AM - 9:24AM	34.00005: Making transparent, super-ductile and heat-resistant semi-crystalline polymers <i>Masoud Razavi, Shiqing Wang</i>
9:24AM - 9:36AM	34.00006: Estimation of mechanical properties of interfaces in polymer nanocomposites using molecular dynamics <i>Abhishek Shandilya, Prajakta Prabhune, Catherine Brinson, Ravishankar Sundararaman</i>
9:36AM - 9:48AM	34.00007: Thermal transport of solid polymers and polymer blends <i>Debashish Mukherji</i>
9:48AM - 10:24AM	34.00008: Abnormal Seebeck effect in doped polymer and two-band transport model <i>Invited Author: Zhigang Shuai</i>
10:24AM - 10:36AM	34.00009: Properties of plasticized poly(vinyl chloride) via molecular simulation: thermodynamics, mechanics, and rheology <i>Li Xi, Dongyang Li, Ali Heydari Beni, Kushal Panchal, Roozbeh Mafi</i>
10:36AM - 10:48AM	34.00010: Effect of polymer architecture on the gas separation performance of PIM-1 membranes <i>Venkat Padmanabhan</i>
10:48AM - 11:00AM	34.00011: Surface Segregation of Branched Chain-ends in PDMS <i>Monica Marks, Kyriaki Kalaitzidou, Will Gutekunst</i>

Wednesday, March 4, 2020 8:00 am – 11:00 am

### Session L35: Sustainable Biopolymers for Enhanced Applications

Sponsoring Units: DPOLY

Chair: John Dutcher, Univ of Guelph

Room: 507

8:00AM - 8:12AM	35.00001: Dendrimeric Morphology and Mechanical Modulus of Soft Phytoglycogen Nanoparticles Revealed by AFM Force Spectroscopy <i>Benjamin Baylis, Erin Shelton, John Dutcher</i>
8:12AM - 8:24AM	35.00002: Structure of Native and Hydrophobically Modified Phytoglycogen Nanoparticles Using Small Angle Neutron Scattering <i>John H Atkinson, Jonathan Nickels, Michelle Michalski, Michael Grossutti, Adrian Schwan, John Katsaras, John Dutcher</i>
8:24AM - 8:36AM	35.00003: Hydration water structure, hydration forces, and mechanical properties of polysaccharide films <i>Michael Grossutti, John Dutcher</i>
8:36AM - 9:12AM	35.00004: Carbohydrate-Based Polymers and Nanomaterials for Advanced Technologies <i>Invited Author: Maren Roman</i>
9:12AM - 9:24AM	35.00005: Structure-Property Mappings for Bio-Advantaged Polyhydroxyalkanoate (PHA)-based Polymers <i>Karteek Bejagam, Carl N. Iverson, Babetta L. Marrone, Ghanshyam Pilonia</i>
9:24AM - 9:36AM	35.00006: Enabling Circular Polymer Chemistry Through Computation <i>Alexander Epstein, Peter Christensen, Trevor Seguin, Brett Helms, Kristin Persson</i>
9:36AM - 9:48AM	35.00007: Compression of Acid Hydrolyzed Phytoglycogen Nanoparticles at High Packing Densities <i>Hurmiz Shamana, John Dutcher</i>
9:48AM - 10:00AM	35.00008: Tunable Yield Stress of Aqueous Dispersions of Hydrophobically-Modified Phytoglycogen Nanoparticles <i>Carley Miki, Hurmiz Shamana, John Dutcher</i>
10:00AM - 10:12AM	35.00009: Binding of Proteins to a Phytoglycogen-Functionalized Surface Plasmon Resonance Sensor Surface <i>Kathleen Charlesworth, Nicholas van Heijst, Aidan Maxwell, Michael Grossutti, John Dutcher</i>
10:12AM - 10:24AM	35.00010: Plastic Resins for the Circular Economy: from Wind Turbines to Gummy Bear Candy and Beyond. <i>John Dorgan, Bin Tan, Harshal Bambhania</i>
10:24AM - 11:00AM	35.00011: Performance-advantaged bioproducts from biomass <i>Invited Author: Gregg Beckham</i>



**Wednesday, March 4, 2020 8:00 am – 11:00 am**

**Session L70: Vitrimers and Associative Networks**

Sponsoring Units: DPOLY DSOFIT

Chair: Christopher Evans, University of Illinois at Urbana-Champaign

Room: 208

8:00AM - 8:12AM	70.00001: Microscopic Theory of the Role of Strong Attractions on the Local Dynamics and Elasticity of Associating Copolymer Liquids <i>Ashesh Ghosh, Kenneth Schweizer</i>
8:12AM - 8:24AM	70.00002: LINEAR VISCOELASTICITY AND FLOW OF SELF-ASSEMBLED VITRIMERS: THE CASE OF A POLYETHYLENE/DIOXABOROLANE SYSTEM <i>Ralm Ricarte, François Tournilhac, Michel Cloître, Ludwik Leibler</i>
8:24AM - 8:36AM	70.00003: Effect of salt on viscoelasticity and conductivity in vitrimers and dynamic networks <i>Brian Jing, Christopher Evans</i>
8:36AM - 8:48AM	70.00004: Understanding the Self-healing of Reversible Polymer Networks through Molecular Dynamic Simulation <i>Zhiqiang Shen, HUILIN YE, Ying Li</i>
8:48AM - 9:00AM	70.00005: Role of Dynamic Bonds on Crystallization in Polyethylene Vitrimers <i>Bhaskar Soman, Christopher Evans</i>
9:00AM - 9:12AM	70.00006: Tuning vitrimer mechanics with prepolymer and crosslinker structure <i>Julia Kalow</i>
9:12AM - 9:48AM	70.00007: Catalyst and Architecture Effects in Polyester Dynamic Covalent Materials <i>Invited Author: Christopher Bates</i>
9:48AM - 10:00AM	70.00008: Recycling of Poly(thiourethane) Thermosets Enabled by Thiourethane Bonds <i>Sijia Huang, Maciej Podgorski, Xun Han, Christopher Bowman</i>
10:00AM - 10:12AM	70.00009: Rheology and Rupture of Partial Vitrimer <i>Shengqiang Cai</i>
10:12AM - 10:24AM	70.00010: Investigation of viscoelastic behavior over wide temperature range in PDMS vitrimers <i>Laura Porath, Christopher Evans</i>
10:24AM - 10:36AM	70.00011: Intrinsically reprocessable, self-healing elastomers <i>Liheng Cai</i>
10:36AM - 10:48AM	70.00012: Melt Recyclable Shape Memory Elastomers through Main Chain Association <i>Daniel Krajovic, Mitchell Anthamatten</i>
10:48AM - 11:00AM	70.00013: Leveraging the Stability of Ionic Liquids in Processing Polyampholytes <i>David Delgado, Jian Ping Gong, Kenneth R Shull</i>

**Wednesday, March 4, 2020, 8:00 am – 11:00 am**

Additional DPOLY Co-Sponsored Sessions

**L04. *Focus* Electronic-Vibrational Coupling in Light Harvesting III. Singlet Fission, Upconversion, and Energy Transfer**

Sponsoring Units: DCP DAMOP DCMP DPOLY

Room: 109

**L05. *Focus* The Chemical Physics of Molecular Polaritons V. Plasmonic cavities**

Sponsoring Units: DCP DCMP DPOLY

Room: 111

**L22. *Focus* Biomaterials III: Tissue-Scale Physics**

Sponsoring Units: DBIO DCP DMP DPOLY

Room: 303

**L26. *Mechanics of cells and tissues across scales V***

Sponsoring Units: DBIO DSOFT GSNP DPOLY

Room: 403

**L29. *Liquid Crystals I: Fields and Interfaces***

Sponsoring Units: DSOFT DPOLY

Room: 501

Wednesday, March 4, 2020 11:15 am – 2:15 pm

**Session M71: Poster Session III**

**DPOLY POSTERS**

Room: Exhibit Hall C/D

71.00001: POLYMER PHYSICS

71.00002: A Novel Focused Electrohydrodynamic Printing Method

*Matthew Strohmayer, Atul Dhall, Pujhitha Ramesh, Natalya Tokronova, Carl Ventrice*

71.00003: 3D printed Liquid Crystal Elastomer mechanical devices

*Devesh Mistry, Nicholas Traugutt, Ross Volpe, Sabina Ula, Christopher Yakacki*

71.00004: Effect of Post-Processing on Thermo-Mechanical Properties of a 3D-Printed UV-Curable Polymer

*Katheryn Husmann, Brandon McReynolds, Stephan Comeau, John McCoy, Alexandria N. Marchi*

71.00005: Competition between Phase Separating and UV Curing Kinetics during Photopolymerization-Induced Phase Separation in Confined Resin Films

*Anna Smallwood, Olivia T. Sherman, Chang Ryu*

71.00006: Triplet Triplet Annihilation Polymerization for High Resolution 3D Printing

*David Limberg, Ji-Hwan Kang, Ryan Hayward*

71.00007: Digital Printers and Image Quality

*Suresh Ahuja*

71.00008: Immersion Precipitation 3D Printing (*ip* 3DP)

*Rahul Karyappa, Michinao Hashimoto*

71.00009: 3D Printing with Waste High-Density Polyethylene

*Aniket Gudadhe, Nirmalya Bachhar, Anil Kumar, Prem Andrade, Guruswamy Kumaraswamy*

71.00010: Printing Resolution and Depth-Of-Cure Study For Stereolithography 3D Printing Resins

*Keith David DeNivo, Anna Smallwood, Chang Ryu*

71.00011: Geometrical and Mechanical Characterization of Interlayer Bonding Quality in Fused Filament Fabrication

*Lichen Fang, Yishu Yan, Ojaswi Agarwal, Jonathan Seppala, Kevin J. Hemker, Sung Kang*

71.00012: Study of the end-to-end probability distributions of low-molecular weight, aqueous polyethylene oxide solutions using experimental DEER measurements and molecular dynamics simulations

*Nick Sherck, Thomas Webber, Dennis Robinson Brown, Timothy Keller, Jacob Monroe, Mikayla Barry, Rachel A Segalman, Glenn H Fredrickson, scott shell, Songi Han*

71.00013: PEO-Sn Nanofibers

*Mataz Alcoutlabi, Maximiliano Aguilar Alonso, Mohammed Uddin, Bryan Hoke, Francisco DeSantiago, Elamin Ibrahim, Juan Huitron, Mircea Chipara*

71.00014: Unraveling the Morphological Evolutions during Solvent Vapor Annealing for Organic Solar Cells Using in situ Resonant Soft X-Ray Scattering

*Wenkai Zhong, Isvar Cordova, Yufeng Jiang, Cheng Wang, Feng Liu, Thomas Russell*

71.00015: The Effect of Electrostatic Interactions on the Interfacial Adsorption and Covalent Reaction of Coiled Coil Bundles

*Matthew Langenstein, Darrin John Pochan, Jeffery G Saven, Christopher J. Kloxin*

71.00016: Development and use of a new model for the Worm Like Chain

*Angelo Setaro, Patrick Underhill*

71.00017: Enrichment and Distribution of Pb<sup>2+</sup> Ions in Zwitterionic Poly(cysteine methacrylate) Brushes at the Solid-Liquid Interface

*Qiming He, Yinjun Qiao, Wei Chen, Matthew Tirrell*

71.00018: Oligomeric Cellulose Based Block Copolymer

*Xin Zhang, Feng Jiang, Robert Briber, Howard Wang*

71.00019: Resistive Pulse Sensing of Phytoglycogen Nanoparticle Translocation: Examining Structure and Brownian motion

*William R Lenart, Michael Hore*

71.00020: A photo-responsive protein-polymer bioconjugate for control of a model protein

*Justin Horn, Chen Chen, Allie Obermeyer*

71.00021: Secondary structure drives self-assembly in weakly segregated globular protein-rod block copolymers

*Helen Yao, Kai Sheng, Jialing Sun, Shupeng Yan, Yingqin Hou, Hua Lu, Bradley Olsen*

71.00022: Computationally designed coiled coil peptide bundle chains with positive charges: Self-assembly and click conjugation

*Yao Tang, Rui Guo, Jeffery G Saven, Christopher J. Kloxin, Darrin John Pochan*

71.00023: Self-Assembly of Protein-based Block Copolymers – A Minimal Coarse-grained Model

*Akash Arora, Helen Yao, Bradley Olsen*

71.00024: Tuning stoichiometry and physical interactions of peptide rigid rods through 'click' chemistry of computationally designed coiled coil

*Yi Shi, Rui Guo, Jacquelyn Blum, Jeffery G Saven, Christopher J. Kloxin, Darrin John Pochan*

71.00025: In Situ SANS on Gelatinization of Polysaccharides

*Howard Wang, Xin Zhang, Feng Jiang, Robert Briber*

71.00026: Directed Self-Assembly of Fluorine-Containing High- $\chi$  Block Copolymers using Top Coat and Electric Field

*Seongjun Jo, Seungbae Jeon, Taesuk Jun, Du Yeol Ryu*

71.00027: SCFT Study on Topological Defects of Symmetric Block Copolymers

*Tianyi Hu, Wei-hua Li*

71.00028: Emergence of multi-stranded helices by the self-assembly of a new AB-type multiblock copolymer under cylindrical confinement

*Lixun Zhang*

71.00029: Gyroidal Thin Films from Block Copolymer Self-Assembly as Structural Directing Templates for Fabrication of Mesostructured Crystalline Inorganic Materials

*Fei Yu, Qi Zhang, Ulrich Wiesner*

71.00030: Unusual Phase Behavior by Blending Star-Shaped Block Copolymer and Linear Block Copolymer

*Yeseong Seo, Seonghyeon Ahn, So Yeong Park, Jaeyong Lee, Wei-hua Li, JinKon Kim*

71.00031: Universal Perpendicular Orientation of Block Copolymer Microdomains using a Filtered Plasma

*Jeong Gon Son, Jinwoo Oh*

71.00032: High  $\chi$ -low N fluorine-based block copolymers for sub-10 nm lithography

*Cian Cummins, Daniele Mantione, Federico Cruciani, Virginie Ponsinet, Guillaume Fleury, Georges Hadziioannou*

71.00033: Development of Shape-Tunable Monodisperse Block Copolymer Particles through Particle Restructuring by Solvent Vapor Annealing

*Jae Man Shin, Eun Ji Kim, Young Jun Lee, Mingoo Kim, Kang Hee Ku, Junhyuk Lee, YongJoo Kim, Hongseok Yun, Kin Liao, Craig J Hawker, Bumjoon Kim*

71.00034: Assessing the Capabilities of the Sharp-Interface Gradient-Based Theoretical Framework for the Simulation of Free-Surface Block Copolymers

*Daniil Bochkov, Frederic Gibou*

71.00035: Self-Assembly in Large Molecular Weight Block Copolymers for Dual Metal Nanodot Patterning and Optical Applications

*Eleanor Mullen*

71.00036: Morphological Changes in Block Copolymer Thin Films Driven by Complex Coacervation

*Hursh Sureka, Bradley Olsen*

71.00037: Self-assembly of Block Copolymers with Ionic Liquid Crystals in Thin Films

*Chuqing Yuan, Pradip Bhowmik, Alamgir Karim*

71.00038: Influence of Charge Sequence on the Adsorption of Polydispersed and Monodispersed Polyelectrolytes onto Monodispersed Polyelectrolyte Brush

*Vaidyanathan Sethuraman, Kevin D Dorfman*

71.00039: X-ray scattering characterization of polystyrene chains tagged with a single quaternary ammonium group per chain.

*Sangwoo Lee, Sungmin Park, Chulsung Bae, Liwen Chen*

71.00040: Transport through ionic layers in sulfonated telechelic polyethylenes

*Benjamin Paren, Manuel Haeussler, Patrick Rathenow, Stefan Mecking, Karen Winey*

71.00041: Current-induced morphological changes in block copolymer electrolytes

*Whitney Loo, Michael Galluzzo, Chenhui Zhu, Nitash Balsara*

71.00042: Polymer Electrolytes with Abundant Hydrogen Bonding Sites

*Ruiyang Wang, Moon Jeong Park*

71.00043: The Effect of Host Incompatibility and Polarity Contrast on Ion Transport in Ternary Polymer-Polymer-Salt Blend Electrolytes

*Bill Wheatle, Erick F. Fuentes, Nathaniel A Lynd, Venkatraghavan Ganesan*

71.00044: Ion Transport in Ether-Based Polymer Electrolytes

*Youngwoo Choo, Rachel Snyder, Brooks Abel, Neel Shah, Geoffrey Coates, Nitash Balsara*

71.00045: Entropic transport of interacting Brownian particles in a channel with reflecting boundaries

*Narender Khatri, P. S. Burada*

71.00046: Shear-induced Counterion Redistribution of a Single Polyelectrolyte

*Kaikai Zheng, Kuo Chen, Jiang Zhao*

71.00047: Through-plane Structural Analysis of Engineered Nafion Surfaces

*Natalie Linnell Schwab, Yuanchao Li, Trung Van Nguyen, Robert Briber, Joseph A. Dura*

71.00048: Single-ion polymers based on ion-conducting crystalline phases

*Jaemin Min, Moon Jeong Park*

71.00049: On the Transference Numbers and Inverse Haven Ratios of Ionic Liquids and Polymeric Ionic Liquids

*Zidan Zhang, Bill Wheatle, Jakub Krajniak, Jordan R Keith, Venkatraghavan Ganesan*

71.00050: Comparing Ion Conductivity and Transference Number of Single-ion and Salt-doped Block Copolymer Electrolytes

*Kuan-Hsuan Shen, Lisa Hall*

71.00051: Enhanced ion transport in block polymer electrolytes through the manipulation of salt and monomer segment distributions

*Priyanka Ketkar, Melody A Morris, Seung Hyun Sung, Joseph A. Dura, Ryan Nieuwendaal, Thomas Epps*

71.00052: Investigation of proton conductivity in polymer nanocomposite films

*Sanket Kadulkar, Vikram Lakhanpal, Delia Milliron, Thomas Truskett, Venkatraghavan Ganesan*

71.00053: The effects of processing method on conductivity and dielectric relaxations in PVDF blended with a zwitterionic copolymer

*Andrew Clark, Miriam Salcedo, Nelaka Dilshan Govinna, Sam Louder, Ayse Asatekin, Peggy Cebe*

71.00054: Gyroid Morphologies in Single-Ion Conducting Polymers and the Consequences for Ion Conductivity

*Jinseok Park, Anne Staiger, Christina Rank, Stefan Mecking, Karen Winey*

71.00055: Understanding the interactions of polyols with hexafluoroisopropanol containing polynorbornene biobutanol membranes using QCM-D

*Siyuan Li, Bryan Vogt*

71.00056: Self-assembly of Linear Block Copolymers and Bottlebrush Block Copolymers in Thin Films  
*Mingqiu Hu, Darren Smith, Duk Man Yu, Xindi Li, Javid Rzaev, Thomas Russell*

71.00057: Macrorheology and particle tracking to study tracer transport, viscoelasticity and network structure of mucin and mucin-like biopolymer solutions

*Joshua Tamayo, Arvind Gopinath*

71.00058: Rheological Scaling of Imidazolium-Based Polyelectrolyte in Ionic Liquid Semidilute Solutions  
*Atsushi Matsumoto, Amy Qing Shen*

71.00059: Rheological Properties of Bare and Grafted Nanoparticle Polymer Networks

*Yi Feng, Pinar Akcora*

71.00060: Effect of topological constraints in semidilute polymer solutions under planar extensional flow  
*Charles Young, Charles Sing*

71.00061: The effects of the structure of a confinement on the ejection rate of a polymer chain from a nanopore

*Chung Bin Park, Bong June Sung*

71.00062: Interfacial Dynamics Governs the Mechanical Properties of Nanoconfined Glassy Polymers  
*Wenjie Xia*

71.00063: Surface and bulk dynamics of compressed polystyrene films: A  $\beta$ -NMR study

*Derek Fujimoto, Owen Brazil, Aris Chatzichristos, Martin H Dehn, Victoria L. Karner, Robert F Kiefl, Philip C. P. Levy, Ryan M. L. McFadden, Iain McKenzie, Gerald Morris, Matt Pearson, Monika K Stachura, John Ticknor, W Andrew MacFarlane, Graham Cross*

71.00064: Reduction of Dielectric Signal of the Interfacial Segmental Dynamics in Polymer Nanocomposites  
*Ivan Popov, Bobby Carroll, Vera bocharova, Anne-Caroline Genix, Shiwang Cheng, Airat Khamzin, Alexander Kisliuk, Alexei Sokolov*

71.00065: The Influence of Polymer and Ion Solvation on Counter-ion Cloud Formation and Charge Fluctuations in Highly Charged Polyelectrolytes

*Jack Douglas, Alexandros Chremos*

71.00066: Reflection band-gap for a transversely stretched composite cholesteric elastomer  
*Guillermo Reyes, Adrian Reyes*

71.00067: Structure Instability in Particle Filled Elastomeric Polymer Composite Under Tensile Stress  
*Lanfang Li, Wei Guo, Zhiyu Jiang, Chong Shen, Willie Lau, H Daniel Ou-Yang*

71.00068: Thermo-electro-mechanical and Rheological Properties of Rubber Composites Filled with  $sp^2$ -Hybridized Different Carbon Fillers

*Emil Fernando, Thusitha Etampawala, Laleen Karunanayake, Dharani Abeysinghe, Amanda Ekanayake, Narayana Sirimuthu, A R Kumarasinhge, Dilhara Edirisinghe*

71.00069: Aqueous pigment dispersions: The thermodynamics of hierarchical aggregation

*Andrew J Mulderig, Kabir Rishi, Greg Beaucauge*

71.00070: A model nanocomposite designed to understand the interfacial behavior in a novel thermally stiffening nanocomposite

*Chen Gong, Kristina Nguyen, Pinar Akcora, Rahmi Ozisik*

71.00071: Compatibility/incompatibility in surface-modified, aggregated, precipitated silica nanocomposites  
*Lahari Pallerla, Kabir Rishi, Greg Beaucauge*

71.00072: New Insights into Hierarchical Structures in Polymer Nanocomposites: A Dissipative Particle Dynamics (DPD) Simulation Study

*Ashish Gogia, Kabir Rishi, Alex M McGlasson, Greg Beaucage, Vikram Kuppa*

71.00073: Localizing Genesis in Polydomain Liquid Crystal Elastomers

*Hayden Fowler, Brian R Donovan, JOSELLE MCCRACKEN, Francisco Lopez Jimenez, Timothy J White*

71.00074: Optical reconfiguration of the blue phase in liquid crystalline elastomers

*Kyle Schlafmann, Timothy J White*

71.00075: Predicting Stress-Strain Behavior of Thermoplastic Elastomer by Theoretical Calculation and Deep Learning

*Takeshi Aoyagi*

71.00076: BigSMILES: A Digitalization Scheme for Data-Driven Macromolecules Research

*Tzyy-Shyang Lin, Bradley Olsen*

71.00077: Achieving Atomic Scale Resolution of Metastable Polymers in Solution using Machine Learning

*Thomas Oweida, Ho shin Kim, Johnny Donald, Yaroslava Yingling*

71.00078: Structural Prediction and Inverse Design by a Strongly Correlated Neural Network

*Jianfeng Li, Jeff Chen*

71.00079: High-throughput study of mechanical properties of organic stable glasses by nanoindentation

*Sarah Wolf, Sage Fulco, Aixi Zhang, Yi Jin, Shivajee Govind, Haoqiang Zhao, Patrick Walsh, Kevin Turner, Zahra Fakhraai*

71.00080: Photovoltaic and Electrical Properties of Diketopyrrolopyrrole Based Organic Semiconductors

*MAJHARUL HOQUE, Andrew Levine, Saul Blain, Joseph Hammer, Vishal Narang, Adam Braunschweig, Milan Begliarbekov*

71.00081: Low-temperature carrier transport of purely organic radicals embedded in double tunnel junctions

*Tuhin Basu, Ryoma Hayakawa, Mikhail Kabdulov, Thomas Huhn, Naho Tsunetomo, Kazuhiro Marumoto, Yutaka Wakayama*

71.00082: Glass Transition Temperature from the Chemical Structure of Conjugated Polymers

*Renxuan Xie, Enrique D Gomez, Ralph Colby*

71.00083: Investigating vapor doping dynamics in poly(3-alkylthiophenes) using *in situ* technique

*Mark DiTusa, Garrett Grocke, Tengzhou Ma, Shrayesh Patel*

71.00084: Mechanism of charge transfer and separation in polymer/nonfullerene acceptor organic solar cells

*Nozomi Ohta, Koichi Yamashita, Azusa Muraoka*

71.00085: Towards the prediction and design of low-glass transition Donor-Acceptor semiconducting polymers

*Song Zhang, Amirhadi Alesadi, Simon Rondeau-Gagne, Wenjie Xia, Xiaodan Gu*

71.00086: Tuning side chains to affect phase behavior and charge mobilities of PCPDTBT donor-acceptor conjugated polymers

*James Sutjianto, Enrique D Gomez*

71.00087: The Impact of Illumination on the Photoluminescence and Depth Profile of MEH-PPV/dPS Thin Films

*Joshua Moncada, Tanguy Terlier, Rafael Verduzco, Mark Dadmun*

71.00088: Controlling the Backbone Flexibility of Conjugated Polymer to Achieve Superior Backbone Tensile Alignment

*Luke Galuska, William McNutt, Zhiyuan Qian, Song Zhang, Sujata Dhakal, Zhiqiang Cao, Jianguo Mei, Xiaodan Gu*

71.00089: Photoabsorption of acceptor molecules in non-fullerene type organic thin film solar cells

*Sumire Ikeyama, Nozomi Ohta, Koichi Yamashita, Azusa Muraoka*

71.00090: Controlling mixed Li/electronic conduction in conjugated polymeric ionic liquids through the addition of ionic and electronic dopants

*Dongwook Lee, Dakota Rawlings, Ioan-Bogdan Magdau, Elayne Thomas, Thomas Miller, Ram Seshadri, Rachel A Segalman*

71.00091: Insight into the Structural dynamics of Bulk Heterojunctions

*Anne Guilbert, Mohamed Zbiri, Peter Finn, Christian Nielsen, Jenny Nelson*

71.00092: Effect of pH on the phase behavior of multiple proteins in oppositely charged weak polyelectrolyte solution

*Rituparna Samanta, Venkatraghavan Ganesan*

71.00093: Effect of divalent ions on mixtures of like-charged polyelectrolytes

*Carlos Lopez*

71.00094: Interpolymer Hydrogen Bonding in the Presence of a Low-Molecular Competitor

*Aliaksei Aliakseyeu, Viktor Selin, John F Ankner, Svetlana Sukhishvili*

71.00095: Physical property scaling relationships for polyelectrolyte complex micelles

*Alexander E. Marras, Jeffrey Viereg, Matthew Tirrell*

71.00096: Polymer Infiltrated Nanoporous Metals to Create Bicontinuous Composite Materials

*Connor Bilchak, Shawn Maguire, Theresa Tsaggaris, Samuel Welborn, John Corsi, Eric Detsi, Jamie Ford, James Pressly, Zahra Fakhraai, Russell Composto*

71.00097: Morphological Effects on Ionic Conductivity in Solid Polymer Nanocomposite Electrolytes

*Shawn Maguire, Andreea-Maria Pana, Hyun-su Lee, Patrice Rannou, Manuel Maréchal, Kohji Ohno, Russell Composto*

71.00098: Spectroscopic Investigations of PEO Based Polymers and Nanofibers

*Mircea Chipara, Mohammed Uddin, Omosola Oriretan, Elamin Ibrahim, Karen Lozano, Carlos Delgado, Dorina Chipara*

71.00099: Deformation Mechanisms of Polyolefin Hard-Elastic Films during Uniaxial Stretching

*Yuanfei Lin, Liangbin Li*

71.00100: The Rheology of Crystallizing Polymers: Towards a Universal Description

*Kalman Migler, Debra Audus*

71.00101: Suppression of crystallization in thin films of cellulose acetates and its effect on gas transport characteristics

*Haiqing Lin*

71.00102: Prefreezing of Different Folding States of Linear Polyethylene on Graphite

*Oleksandr Dolynchuk, Ann-Kristin Flieger, Thomas Thurn-Albrecht*

71.00103: Epitaxial Crystallization of PE Atop Graphene by Vapor Deposition

*Yucheng Wang, Rodney Priestley*

71.00104: Chiral Recognition of Poly(Lactic Acid) Stereocomplex

*Toshikazu Miyoshi, Wei Chen*

71.00105: Chain-Level Structure of Semi-crystalline Polymer in Thermodynamically Stable Crystal and Quenched Glass

*Yi Zhang, Fan Jin, Toshikazu Miyoshi*

71.00106: Nanoindentation of nanocomposites

*Suresh Ahuja*

71.00107: Physical Aging in Anhydride-Cured DGEBA Epoxy

*Catherine Groves, Jamie M Kropka, John McCoy*

71.00108: Accelerated aging of an epoxy glass under elevated temperatures and compressive stresses

*Noah White, Stephan Comeau, Gabe Arechederra, John McCoy, Jamie M Kropka*



71.00109: Metallization of Chiral and Grooved Polymers at Nanoscale

*Anthony Gray, Kyra Fuleihan, Benjamin Schutsky, Christopher La Fond, Meghan Evans, Petr V Shibaev*

71.00110: Apparent effect of crosslinker concentration on structure and dynamics of polymeric microgels

*Kiril Strelitzky, Samantha C Tietjen, Samantha R Hudson*

71.00111: Guided Design of Composite Graphene-Polymer Foams: From Graphene Stabilized Emulsion to Electrically Conductive Foams

*Zilu Wang, Yuan Tian, Heyi Liang, Andrey Dobrynin, Douglas Adamson*

71.00112: Designing Polymer Nanocomposites for Membrane Gas Separation: an Integrated Experimental and Modeling Approach

*Haiqing Lin*

71.00113: Fabrication of Carbonized Block Copolymer Particles for Cathode Catalyst of Proton Exchange Membrane Fuel Cell

*Young Jun Lee, Juhyuk Choi, Hyunjoo Lee, Bumjoon Kim*

71.00114: Effects of Heterogeneous Segmental Friction on the Decoupling of Segmental and Chain Dynamics

*Walter Young, Joesph P. Saez, Thomas D. Kumlin, Reika Katsumata*

71.00115: Effect of Softness of Polymer Grafted Nanoparticles on the Co-assembly Behavior in 3D Confined Nanoparticle/Block Copolymer Hybrid System

*Meng Xu, Hongseok Yun, Kang Hee Ku, Bumjoon Kim*

71.00116: Interconnected Nanoporous Polysulfone Membranes by Microphase Separation of Randomly End-linked Copolymer Networks

*Jaechul Ju, Ryan Hayward*

71.00117: Brush Structure of Polymer Grafted SiO<sub>2</sub> Nanoparticles Measured with Neutron Scattering

*Yuan Wei, Michael Hore*

71.00118: Quantum metamaterials from block copolymers: synthetic pathways to and emergent properties of superconducting gyroids from triblock terpolymer nanocomposites

*Peter Beaucauge*

71.00119: Deformation-Structure Correlations in Glassy Polymer-Grafted Nanoparticle Assemblies

*Allen Schantz, Florian Käfer, Jinho Hyon, Jason Streit, Christopher Ober, Edwin Thomas, Lawrence Drummy, Richard Arthur Vaia*

71.00120: Controlling Morphology of Self Assembling Nanocrystalline Reinforcing Domains by Grafting Density Design

*Aarushi Srivastava, John Meyerhofer, Yihong Zhao, Susana Teixeira, Li Jia, Mark Foster, Wenhan Zhao*

71.00121: Influence of Graft Chain Properties on Polymer Grafted Nanocomposites

*Andrew Ehlers, Pinar Akcora, Rahmi Ozisik*

71.00122: Plasmon-Coupled Gold Nanoparticles in Stretched Shape Memory Polymers

*Prachi R. Yadav, Sumeet R. Mishra, Brian S. Chapman, Brian Lynch, Amy L Oldenburg, Joseph Tracy*

71.00123: Nonlinear Elasticity and Swelling of Comb and Bottlebrush Networks

*Michael Jacobs, Heyi Liang, Erfan Dashtimoghadam, Benjamin Morgan, Sergei Sheiko, Andrey Dobrynin*

71.00124: Gelation of DGEBA epoxy in the presence of a tertiary amine for temperatures above and below the ceiling temperature

*John McCoy, Catherine T. House, Jamie M Kropka*

71.00125: The effect of water sorption, high temperature aging, and cooling rate on the calorimetric signature of the aging of an epoxy glass

*Stephan Comeau, Brandon McReynolds, Taylor Le, John McCoy, Jamie M Kropka*

71.00126: Introducing imide-based functional groups for enhanced self-healing properties of polyurethane

*Hee Jeong Park, Sung Woo Hong, Dong Hyun Lee*

71.00127: Relationship of Local Strain-Field and shape of Crack-tip in the Dynamic Crack of Filled Elastomers  
*Thanh-Tam Mai, Kenji Urayama*

71.00128: From quantum mechanics to viscoelasticity: A multiscale modeling and characterization of radical initiated modification of polyolefin in molten state  
*Weizhong Zou, Amber Tupper, Nathan Rebello, Wontae Joo, Duminda S. Ranasinghe, Tzyy-Shyang Lin, Gending Ji, Sarah Khanniche, Bradley Olsen, William H. Green, Krish Gopalan, Christopher Couch*

71.00129: Electro-mechanical transduction of ionoelastomer junctions  
*Matthew McBride, Hyeong Jun Kim, Baohong Chen, Zhigang Suo, Ryan Hayward*

71.00130: Comparison of the mesh size for semi-dilute worm-like micelles obtained through rheology, neutron scattering, cryo-TEM, and theory.  
*Hanqiu Jiang, Kabir Rishi, Greg Beaucage, Karsten Vogtt*

71.00131: Nonlinear shear flow experiments suggest no missing physics in slip-link models of entangled polymer melts  
*Diego Becerra, Andres Cordoba, Jay Schieber*

71.00132: Co-Crystallization and Liquid-Liquid Equilibrium in Polyoxacyclobutane-Water Mixtures  
*Joyita Bannerjee, Peter Koronaios, Steven Geib, Eric Beckman, John Keith, Robert Enick, Sachin Velankar*

71.00133: Biaxial Stretching of Nearly Critical Gels with Extremely Sparse Network Structures  
*Takuma Aoyama, Naoto Yamada, Kenji Urayama*

71.00134: Capturing change in microstructure of physically assembled gels as a function of temperature and strain using in-situ RheoSAXS technique  
*Rosa Maria Badani Prado, Satish Mishra, Wesley Roth Burghardt, Santanu Kundu*

71.00135: The Geometric State of a Solid-Solid Interface  
*Thomas Pilvelait, Sam Dillavou, Shmuel Rubinstein*

71.00136: Surface Micro Replicas of Self-Assembled Chiral Polymers and Grooves  
*Kyra Fuleihan, Christopher La Fond, Petr V Shibaev, Anthony Gray, Benjamin Schutsky, Meghan Evans*

71.00137: Interactions and Competitive Adsorption at Solid/Liquid Interface  
*Nityanshu Kumar, Sukhmanjot Kaur, Rajat Kumar, Saranshu Singla, Michael C Wilson, Selemone Bekele, Mesfin Tsige, Ali N Dhinojwala*

71.00138: Nanoparticles as Universal Adhesives  
*Ryan Sayko, Zhen Cao, Heyi Liang, Andrey Dobrynin*

71.00139: Does Flexoelectricity Drive Triboelectricity?  
*Christopher Mizzi, Alex Y.W. Lin, Laurence D. Marks*

71.00140: Unravelling the Behaviour of Brush Block Nanocomposites at Ultrahigh Strain Rates  
*Sravya Nuguri, Anuraag Gangineri Padmanaban, Jae-Hwang Lee, James J Watkins*

71.00141: Guided Design of Strain-Adaptive Polymer Networks  
*Heyi Liang, Andrey Dobrynin, Mohammad Vatankhah-Varnosfaderani, Andrew N. Keith, Sergei Sheiko*

71.00142: A Comparative Study of Hydrogen Bond Organization between Hyperbranched Polymers and Dendrimers Based on bis-MPA  
*Beibei Chen, Samantha Daymon, Maliha N. Syed, Oluwapelumi Kareem, McKenna Redding, Brian Olson, Scott M Grayson, Sergei Nazarenko*

71.00143: Unusual Protein Adsorption Phenomena on Ultrathin Homopolymer Films  
*Yuto Koga, Yashasvi Bajaj, Daniel Salatto, Zhixing Huang, Jan-Michael Carrillo, Dmytro Nykypanchuk, Maya Endoh, Tad Koga*

71.00144: Unravelling the mechanism behind adhesion failure events at the polymer-solid interfaces  
*Zhixing Huang, Daniel Salatto, Justin Cheung, Maya Endoh, Tad Koga*

71.00145: Phase behavior of disk-coil block copolymers under cylindrical confinement: Curvature-induced structural frustrations

*Min Young Ha, YongJoo Kim, Won Bo Lee*

71.00146: Disordered Assemblies of Rubber Bands as a Model of Polymer Rings

*Nicolas Garcia, Leopoldo R Gomez, Thorsten Poeschel*

71.00147: Multiple arms star polymer translocation from a cylindrical cavity subject to a pulling force

*Mesay Tilahun Abebe, Yergou Tatek*

71.00148: The Cononsolvency Effects: A Coarse Grained Simulation Study

*Jing Zong, Dong Meng*

71.00149: Detection of Hip Infections Using an Injectable Hydrogel Based Synovial Fluid pH Sensor

*Sachindra Kiridena, Uthpala Wijayarathna, Md. Arifuzzaman, Jeffrey N. Anker*

71.00150: Design of Polyelectrolyte-based Materials using Molecular Modeling

*Thomas Oweida, Ibrahim Ahmad, Yaroslava Yingling*

71.00151: Shape-Switchable Block Copolymer Particles Exhibiting Light-Responsive Surfactants

*Kang Hee Ku, Junhyuk Lee, Young Jun Lee, Bumjoon Kim*

71.00152: Configurational contribution to the Soret effect of a protein ligand system

*Jutta Luettmer-Strathmann*

71.00153: Packing density, homogeneity, and regularity: quantitative correlations between topology and thermoresponsive morphology of PNIPAM-co-PAA microgel coatings

*Camden Cutright, Zach Brotherton, Jake Harris, Landon Alexander, Kaihang Shi, Saad Khan, Jan Genzer, Stefano Menegatti*

71.00154: Magnetically Induced Self-Healing in Iron Oxide-Poly(ethylene oxide) Nanocomposites

*Donovan Weiblen, Sarah Dalakas, Charlotte Teunisse, Vanessa R Swepson, Grace L Gionta, Deniz Rende, Rahmi Ozisik*

71.00155: Tuning Diblock Copolymer Morphologies by Stimuli-Responsive Supramolecular Interactions

*Xiangyu Zhang, Jing Zong, Dong Meng*

71.00156: Water Dynamics and Poly(N-isopropyl acrylamide) Co-nonsolvency in Water-Methanol Solutions at Variable Temperature and Pressure

*Bart-Jan Niebuur, Wiebke Lohstroh, Chia-Hsin Ko, Marie-Sousai Appavou, Alfons Schulte, Christine Papadakis*

71.00157: Phase behavior and self-assembly of liquid-crystalline block copolymers in nematic solvents

*Changyeon Lee, Dennis Ndaya, Reuben Bosire, Rajeswari M. Kasi, Chinedum Osuji*

71.00158: Toward molecular modeling of ductility and drawability of semi-crystalline polymers

*Masoud Razavi, Shiqing Wang*

71.00159: Probing the Impact of Polymer Hydrophobicity on Solution and Hydrated Surface Conformation

*Audra DeStefano, Sally Jiao, Mikayla Barry, Segolene Antoine, Timothy Keller, scott shell, Songi Han, Rachel A Segalman*

71.00160: Unfolding of Polymer Thin Films on Liquid Surfaces

*R. Konane Bay, Klara Zarybnicka, Josef Jancar, Alfred J Crosby*

71.00161: Polymers in confinement: Free energy scaling and folding transitions

*Mark Taylor, Antonia Sikon, Troy Prunty*

71.00162: Tunable Assembling of Soft Polymer Janus Nanoparticle at Liquid Interface

*Yufeng Jiang, Ramzi Chakroun, André Gröschel, Thomas Russell*

71.00163: Mussel inspired polymers for flexible electronics applications

*Eleni Papananou, Reika Katsumata, Rubayn Goh, Feng Liu, Mingqi Li, Peter Trefonas, Rachel A Segalman*

71.00164: Study of a passive enhancement architecture for FRET-enabled molecular communication.

*Matthew Hawkins, Hemali P Rathnayake, Joseph M Starobin*

71.00165: Charge density gradients of polyelectrolyte thin films generated by diffusion and reaction in the vapor phase

*Yeongun Ko, Jan Genzer*

71.00166: Spontaneous degrafting of weak and strong polycationic brushes in aqueous buffer solutions

*Jan Genzer, Yeongun Ko, Yuanchao Li*

71.00167: Structure of Irreversibly Adsorbed Star Polymer Layers

*Gizem KIREVLIYASI, David Uhrig, Kunlun Hong, Bulent Akgun*

71.00168: Visualization of interface effect on the molecular morphology in block copolymer thin films by SVSEM tomography

*Amanda Suarez, Xueyan Feng, Edwin Thomas*

71.00169: Universal cohesive law governing interaction between nanoparticles in hairy nanoparticle assemblies

*Nitin Hansoge, Agam Gupta, Sinan Keten*

71.00170: Recyclable Bio-based Thermoset Furan-Epoxy Networks via Diels-Alder Crosslinks

*LUC LE, Karl Jacob, Kyriaki Kalaitzidou*

Wednesday, March 4, 2020, 11:15 am – 2:15 pm

Additional DPOLY Co-Sponsored Sessions

**M22. Focus Biomaterials IV: Nano and Bioinspired materials**

Sponsoring Units: DBIO DCP DMP DPOLY

Room: 303

**M29. Liquid Crystals II: Phases and Transitions**

Sponsoring Units: DSOF DPOLY

Room: 501

**M30. Focus Soft Mechanics via Geometry II**

Sponsoring Units: DSOF DPOLY

Room: 502

**M32. Focus Physics of Complex Liquid Interfaces**

Sponsoring Units: DSOF DPOLY

Room: 504

**M45. Focus Emerging Trends in Molecular Dynamics Simulations and Machine Learning III**

Sponsoring Units: DCOMP GDS DSOF DPOLY

Room: 706

Wednesday, March 4, 2020 2:30 pm – 5:30 pm

**Session P32: Molecular and Polymer Glass Dynamics**

Sponsoring Units: DPOLY DSOFT DCP DMP

Chair: Mark Ediger, University of Wisconsin - Madison

Room: 504

2:30PM - 3:06PM	32.00001: Evidence for heterogeneous bulk melting dominating the transition of organic stable glasses <i>Invited Author: Marta Gonzalez-Silveira</i>
3:06PM - 3:18PM	32.00002: Solvent vapor annealing of stable glasses <i>Shivajee Govind, Haoqiang Zhao, Patrick Walsh, Zahra Fakhraai</i>
Author Not Attending	32.00003: Secondary Dynamics in Ultrastable Polystyrene Thin Films Studied by $\beta$ -NMR <i>Iain McKenzie, Danaan Cordoni-Jordan, Derek Fujimoto, Victoria Karner, Robert F Kiefl, Philip C. P. Levy, W Andrew MacFarlane, Ryan M. L. McFadden, Gerald Morris, Matt Pearson, Adam Raegen, John Ticknor, James A Forrest</i>
3:30PM - 3:42PM	32.00004: Uncovering $\beta$ -relaxations in amorphous phase-change materials <i>Shuai Wei, Si-Xu Peng, Yudong Cheng, Julian Pries, Hai-Bin Yu, Matthias Wuttig</i>
3:42PM - 3:54PM	32.00005: A direct static scattering evidence on the dynamic nature of glass formation process in polystyrene <i>He Cheng, Guisheng Jiao, Taisen Zuo, Changli Ma, Zehua Han, Junrong Zhang, Junpeng Zhao, Charles C Han</i>
3:54PM - 4:06PM	32.00006: Effects of aromatic side-group structure on thermal transitions of polyzwitterions <i>Andrew Clark, Yajnaseni Biswas, Ayse Asatekin, Morgan E Taylor, Matthew J Panzer, Christoph Schick, Peggy Cebe</i>
4:06PM - 4:18PM	32.00007: Rigorous analysis of the linear viscoelastic behavior of thermo-rheologically complex amorphous materials <i>Grigori Medvedev, James M Caruthers</i>
4:18PM - 4:30PM	32.00008: Relaxation processes in polymer glasses: a hierarchical approach <i>Peter Olmsted, Daniel L Baker, Matthew Reynolds, Johan Mattsson, Robin Masurel</i>
4:30PM - 4:42PM	32.00009: Unusual Viscoelasticity in Polyrotaxane Glasses <i>Karan Dikshit, Carson J Bruns</i>
4:42PM - 4:54PM	32.00010: Volume recovery and physical aging of pressure-densified glasses <i>Daniel Fragiadakis, Adam Holt, Charles M. Roland</i>
4:54PM - 5:06PM	32.00011: Understanding aging phenomena by the free-energy-landscape approach <i>Takashi Odagaki</i>
5:06PM - 5:18PM	32.00012: Lifetime of Rate Domains: Comparison of Simulations and Single-Molecule Experiments in <i>o</i> -Terphenyl <i>Harveen Kaur, Keewook Paeng, Laura Kaufman, Mark Berg</i>
5:18PM - 5:30PM	32.00013: Unified description of the Arrhenian and super-Arrhenian behavior of OTP by the excess internal energy model <i>James M Caruthers, Jack Yungbluth, Grigori Medvedev, Brett Savoie</i>

Wednesday, March 4, 2020 2:30 pm – 5:30 pm

**Session P33: Hierarchical Structural Emergence in Elastomer Nanocomposites: Dispersion, Dynamics, Structure, Modeling, and Simulation II**

Sponsoring Units: DPOLY DSOFIT

Chair: Greg Beaucage, Univ of Cincinnati

Room: 505

2:30PM - 2:42PM	33.00001: A small-angle scattering approach to percolation in nanoparticle assemblies <i>Julian Oberdisse, Anne-Caroline Genix</i>
2:42PM - 2:54PM	33.00002: Quantification of dispersion for weakly and strongly correlated fillers in polymer nanocomposites <i>Alex M McGlasson, Kabir Rishi, Greg Beaucage, Michael Chauby, Vikram Kuppa</i>
2:54PM - 3:06PM	33.00003: Recent Study of Small-Angle Neutron Scattering Spectrometer Suanni on Elastomer Nanocomposites <i>Yue Shui, Lizhao Huang, Tingting Wang, Guangai Sun, Jian Gong, Jie Chen, Dong Liu</i>
3:06PM - 3:18PM	33.00004: Isostructural Softening of the Filler Network in Crude and Vulcanized SBR/Silica Nanocomposites <i>GUILHEM BAEZA, Florent Dalmas, Fabien Dutertre, Jean-Charles Majesté</i>
3:18PM - 3:30PM	33.00005: Effect of Initial Dispersion State on the Structure and Property of Polymer Nanocomposites <i>Ga Young Kim, So Youn Y Kim</i>
3:30PM - 3:42PM	33.00006: Thermodynamic model for dispersion in nanocomposites. <i>Greg Beaucage, Karsten Vogtt, Kabir Rishi, Hanqiu Jiang, Andrew Mulderig</i>
3:42PM - 4:18PM	33.00007: Scattering Studies on Hierarchically Self-Organized Filler Particles in Polymers <i>Invited Author: Mikihiro Takenaka</i>
4:18PM - 4:30PM	33.00008: First principles Study of Interaction of Polymer Molecules with Flat Carbon Nanotubes <i>Geeta Sachdeva, Ravindra Pandey, Gregory M. Odegard</i>
4:30PM - 4:42PM	33.00009: Multiscale Modeling of Fracture in Epoxy/CNT Nanocomposites <i>Hayden Hollenbeck, Chengyuan Wen, Ralph Romero, Tabassum Ahmed, Neslihan Genckal, Nishant Shirodkar, Gary Seidel, Shengfeng Cheng</i>
4:42PM - 4:54PM	33.00010: Molecular Dynamics Investigation of the Structural and Mechanical Properties of Off-Stoichiometric Epoxy Resins <i>Chang Woon Jang, John Lawson</i>
4:54PM - 5:06PM	33.00011: Deformation of Epoxy Nano-Composites <i>Suresh Ahuja</i>
5:06PM - 5:18PM	33.00012: Effect of interface modifiers on the cure, mechanical and viscoelastic properties of hierarchical carbon nanotube composites. <i>Ajay Krishnamurthy, Ran Tao, Qi An, Aaron M Forster</i>
5:18PM - 5:30PM	33.00013: Adhesion Strength of Block Copolymer Modified Epoxy Adhesives <i>Vincent Pang, Zachary John Thompson, Guy D. Joly, Frank S Bates, Lorraine F. Francis</i>

Wednesday, March 4, 2020 2:30 pm – 5:30 pm

**Session P34: Characterization of Non-equilibrium or Exotic Structures of Polymers**

Sponsoring Units: DPOLY DSOFT

Chair: Douglas Tree, Brigham Young Univ - Provo

Room: 506

2:30PM - 2:42PM	34.00001: Non-equilibrium laser annealing derived mesostructured silicon templated in mesoporous thin film network structures from block copolymer self-assembly <i>Fei Yu, Qi Zhang, Ulrich Wiesner</i>
2:42PM - 2:54PM	34.00002: Probing Block-Copolymer Self-Assembly Kinetics with In-Situ Spectroscopic Ellipsometry <i>Connor Bilchak, Guillermo Contreas, Shivajee Govind, Shawn Maguire, Russell Composto, Zahra Fakhraai</i>
2:54PM - 3:06PM	34.00003: A fluorescence-based method for determining order-disorder transition temperatures in block copolymers <i>Muzhou Wang, Zhe Qiang, Lingqiao Li, John Torkelson</i>
3:06PM - 3:18PM	34.00004: Evolution of disordered hyperuniformity in block copolymers thin films by homopolymer dilution <i>Uri Gabinet, Changyeon Lee, Chinedum Osuji</i>
3:18PM - 3:30PM	34.00005: Fluctuation/Correlation Effects in Symmetric Diblock Copolymers: On the Disordered Phase <i>Yan Wang, Jing Zong, Delian Yang, Qiang Wang</i>
3:30PM - 3:42PM	34.00006: Multiscale Modeling of Multicompartment Micelle Consisting of Block Copolymers <i>Mackenzie Mallard, Seung Min Lee, Seung Soon Jang</i>
3:42PM - 3:54PM	34.00007: Direct Observation of Block Copolymer Micelle Fragmentation in Ionic Liquids <i>Julia T Early, Kevin Yager, Timothy Lodge</i>
3:54PM - 4:06PM	34.00008: The Effects of the Size of Crystal Domains to the Polymorphism of Close-Packed Micelles <i>Sangwoo Lee, Liwen Chen, Han Seung Lee, Mikhail Zhernenkov</i>
4:06PM - 4:18PM	34.00009: Quasiperiodic Ordering of Minimally Hydrated Ionic Surfactant Micelles <i>Ashish Jayaraman, Carlos Baez-Cotto, Tyler J Mann, Mahesh Mahanthappa</i>
4:18PM - 4:54PM	34.00010: Processing Path-Dependent Complex Micelle Packings of Hydrated Diblock Polymer Amphiphiles <i>Invited Author: Mahesh Mahanthappa</i>
4:54PM - 5:06PM	34.00011: Expanding spherical regions of block copolymers via designed chain architectures <i>Yicheng Qiang, Wei-hua Li</i>
5:06PM - 5:18PM	34.00012: Exotic Phase Behaviors of Purposely Designed Dendron-Like Block Copolymers <i>Yicheng Qiang, Wei-hua Li</i>
5:18PM - 5:30PM	34.00013: The impact of asymmetric architecture on the spherical region of AB-type block copolymers <i>Congcong Li, Wei-hua Li</i>



Wednesday, March 4, 2020 2:30 pm – 5:30 pm

**Session P35: Polyelectrolyte Complexation: Thermodynamics and Self-Assembly**

Sponsoring Units: DPOLY DSOFIT

Chair: Samanvaya Srivastava, University of California, Los Angeles

Room: 507

2:30PM - 2:42PM	35.00001: Modeling of complexation of oppositely charged polyelectrolytes in aqueous solutions <i>Mohsen Ghasemi, Sean Friedowitz, Jian Qin, Ronald Larson</i>
2:42PM - 2:54PM	35.00002: "Looping-back" complexation in stoichiometrically asymmetric polyelectrolyte solutions <i>Sean Friedowitz, Junzhe Lou, Yan Xia, Jian Qin</i>
2:54PM - 3:06PM	35.00003: Created by kT <i>Joseph Schlenoff, Mo Yang, Zach Digby, Qifeng Wang</i>
3:06PM - 3:42PM	35.00004: Polyelectrolyte micellar complexes <i>Invited Author: Matthew Tirrell</i>
3:42PM - 3:54PM	35.00005: Kinetics of phase separation of polyelectrolyte complex coacervates exhibiting lower critical solution temperature <i>Samim Ali, Yuanchi Ma, Yimin Mao, Vivek Prabhu</i>
3:54PM - 4:06PM	35.00006: Quantification of the lower critical solution temperature phase diagram of polyelectrolyte complex coacervates <i>Yuanchi Ma, Samim Ali, Yimin Mao, Debra Audus, Vivek Prabhu</i>
4:06PM - 4:18PM	35.00007: An Anomalous Small Angle X-ray Scattering Study of Counterion Distribution around Macroion <i>Jiahui Chen, Mrinal Bera, Tianbo Liu</i>
4:18PM - 4:30PM	35.00008: Polymer chain conformation in polyelectrolyte complexes <i>Sadhana Chalise, Jyoti P Mahalik, Murugappan Muthukumar</i>
4:30PM - 4:42PM	35.00009: Constraint Release in Entangled Liquid Coacervates Made from Oppositely Charged Polyelectrolytes <i>Christian Aponte-Rivera, Michael Rubinstein</i>
4:42PM - 4:54PM	35.00010: Solid-to-Liquid Phase Transition in Polyelectrolyte Complexes: Structural Evolution, Dynamics, and Phase Behavior <i>Siqi Meng, Jeffrey M Ting, Hao Wu, Matthew Tirrell</i>
4:54PM - 5:06PM	35.00011: Free Energy Profile of Complexation of two oppositely charged Polyelectrolytes <i>Soumik Mitra, Arindam Kundagrami</i>
5:06PM - 5:18PM	35.00012: Scaling relation of Complex Coacervate Core Micelles <i>Taeyoung Heo, Debra Audus, SooHyung Choi</i>
5:18PM - 5:30PM	35.00013: Ionic-group-dependent phase behavior of polyelectrolyte coacervates <i>Sojeong Kim, Minhwan Lee, Won Bo Lee, SooHyung Choi</i>

Wednesday, March 4, 2020, 2:30 pm – 5:30 pm

Additional DPOLY Co-Sponsored Sessions

**P29. *Focus* Active Matter and Liquid Crystals in Biological Systems I**

Sponsoring Units: DSOF DBIO GSNP DPOLY

Room: 501

**P30. *Soft Mechanics via Geometry III***

Sponsoring Units: DSOF DPOLY

Room: 502

**P45. *Focus* Emerging Trends in Molecular Dynamics Simulations and Machine Learning IV**

Sponsoring Units: DCOMP GDS DSOF DPOLY

Room: 706

APS wide Kavli Session

**P00. *Invited* Kavli Foundation Special Symposium: Frontiers of Computation: Machine Learning and Quantum Computing**

Sponsoring Units: APS

Room: Bellco Theatre

Thursday, March 5, 2020 8:00 am – 11:00 am

**Session R28: Physics of Foams: From Beer to Windmill Blades and Everything in Between**

Sponsoring Units: DPOLY FIAP

Chair: Valeriy Ginzburg, Dow Chemical Co

Room: 405-407

8:00AM - 8:36AM	28.00001: Following a Theoretical Roadmap to Low Nucleation Barriers for CO <sub>2</sub> Nucleation in Polyol <i>Invited Author: Julia A Kornfield</i>
8:36AM - 9:12AM	28.00002: Polymer Foams for Building Insulation (STYROFOAM and beyond) <i>Invited Author: Stephane Costeux</i>
9:12AM - 9:48AM	28.00003: Polyurethane Application Innovation: Translating Chemistry to Materials to Solve Real-World Problems <i>Invited Author: William Koonce</i>
9:48AM - 10:24AM	28.00004: Modeling Nucleation in Polymeric Foams using Self-Consistent Field Theory <i>Invited Author: Russell B Thompson</i>
10:24AM - 11:00AM	28.00005: Fluid dynamics of bubbly drinks <i>Invited Author: Roberto Zenit</i>

Thursday, March 5, 2020 8:00 am – 11:00 am

### Session R32: Molecular and Polymer Glass Structure

Sponsoring Units: DPOLY DSOFT DCP DMP

Chair: Tianyi Liu, L'Oreal

Room: 504

8:00AM - 8:12AM	32.00001: On the Allowable or Forbidden Nature of Vapor-Deposited Glasses <i>Mathieu Bauchy</i>
8:12AM - 8:24AM	32.00002: Stable polystyrene glass films through PVD and UV radiation <i>Junjie Yin, Adam Raegen, James A Forrest</i>
8:24AM - 8:36AM	32.00003: Physical vapor deposition of a polyamorphic system <i>Benjamin Kasting, Madeleine Beasley, Megan Tracy, Mark Ediger</i>
8:36AM - 9:12AM	32.00004: Physical properties of ultrastable computer-generated glasses <i>Invited Author: Ludovic Berthier</i>
9:12AM - 9:24AM	32.00005: Effects of internal degrees of freedom on simulated vapor deposited glass films <i>Alex Moore, Patrick Walsh, Zahra Fakhraai, Robert Riggelman</i>
9:24AM - 9:36AM	32.00006: Anisotropy of extremely monodisperse polymer stable glass thin films <i>Adam Raegen, Junjie Yin, Qi Zhou, James A Forrest</i>
9:36AM - 9:48AM	32.00007: Stability dependence of local elastic inhomogeneities of amorphous solids <i>Alireza Shakerpoor, Elijah Flenner, Grzegorz Szamel</i>
9:48AM - 10:00AM	32.00008: Strong elasticity anisotropy in molecular glasses <i>Zuyuan Wang, Yu Cang, George Fytas, Camille Bishop, Mark Ediger</i>
10:00AM - 10:12AM	32.00009: High Stability of Ultrathin Vapor Deposited Molecular Glasses <i>Yi Jin, Yue Zhang, Sarah Wolf, Aixi Zhang, Shivajee Govind, Connor N Woods, Subarna Samanta, Mikhail Zhernenkov, Guillaume Freychet, Zahra Fakhraai</i>
10:12AM - 10:24AM	32.00010: Over what length-scale can the substrate perturb the structure of a vapor-deposited organic glass? <i>Kushal Bagchi, Chuting Deng, Camille Bishop, Yuhui Li, Nicholas Jackson, Michael Toney, Lian Yu, Juan De Pablo, Mark Ediger</i>
10:24AM - 10:36AM	32.00011: Molecular Orientation Depth Profiles from Resonant Soft X-ray Reflectivity <i>Jacob Thelen, Kushal Bagchi, Camille Bishop, Subhrangsu Mukherjee, Eliot H Gann, R. Joseph Kline, Mark Ediger, Dean DeLongchamp</i>
10:36AM - 10:48AM	32.00012: Molecular dynamics simulation for investigation of Boson peak in a polymer system <i>Akira Koyama, Koji Fukao, Takashi Yamamoto</i>
10:48AM - 11:00AM	32.00013: The effect of molecular architecture on the physical properties of supercooled liquids studied by MD simulations. Density scaling and its relation to the equation of state <i>Kajetan Koperwas, Grzybowski Andrzej, Marian Paluch</i>

Thursday, March 5, 2020 8:00 am – 11:00 am

**Session R33: Chirality in Polymers and Soft Matter: From Molecular to Hierarchical Scales**

Sponsoring Units: DPOLY DSOFT DBIO

Chair: Gregory Grason, Univ of Mass - Amherst

Room: 505

8:00AM - 8:36AM	33.00001: Spontaneous Appearance of Chiral Structures from Lyotropic Liquid Crystals in Confinement <i>Invited Author: Mohan Srinivasarao</i>
8:36AM - 8:48AM	33.00002: Threading the Spindle: A Geometric Study of Chiral Liquid Crystal Polymer Microparticles <i>Helen Ansell, Dae Seok Kim, Randall D Kamien, Eleni Katifori, Teresa Lopez-Leon</i>
8:48AM - 9:00AM	33.00003: Chiral nematic liquid crystals in cylinders: Layering transition and conservation of layer structure <i>Jonghee Eun, Sung-Jo Kim, Joonwoo Jeong</i>
9:00AM - 9:12AM	33.00004: Truth about the origin of twist - a circular argument <i>Elisabetta Matsumoto, Alireza Dastan, Doug J Cleaver</i>
9:12AM - 9:24AM	33.00005: Thermoresponsive Colloidal Chains Collapse to Form Helices <i>Bipul Biswas, KP Fayis, Suresh Bhat, Guruswamy Kumaraswamy</i>
9:24AM - 9:36AM	33.00006: Skyrmion formation and organization on a shell <i>Viviana Palacio-Betancur, Guillaume Durey, Alexander Cohen, Monirosadat Sadati, Teresa López León, Juan P. Hernandez-Ortiz, Juan De Pablo</i>
9:36AM - 9:48AM	33.00007: Peculiar Phase Morphologies from Twisting of Self-Assembled Ribbons in Chiral Block Copolymers <i>Kai-Chieh Yang, Rong-Ming Ho</i>
9:48AM - 10:24AM	33.00008: Folding of chiral colloidal membranes <i>Invited Author: Prerna Sharma</i>
10:24AM - 10:36AM	33.00009: Self-assembly of chiral networks in achiral block copolymer systems using coarse-grained simulations <i>Natalie Buchanan, Krysia Browka, Lianna Ketcham, Hillary Le, Poornima Padmanabhan</i>
10:36AM - 10:48AM	33.00010: Amino Acids as RNA-Folding Chaperones: Single Molecule Experiments Reveal Chiral Sensitivity <i>David Nicholson, David John Nesbitt</i>
10:48AM - 11:00AM	33.00011: Insensitivity of Sterically-Defined Helical Chain Conformation to Solvent Quality in Dilute Solution <i>Beihang Yu, Scott Danielsen, Kai-Chieh Yang, Rong-Ming Ho, Lynn Walker, Rachel A Segalman</i>

Thursday, March 5, 2020 8:00 am – 11:00 am

**Session R34: Processing-Dependent Nanoscale Structures in Polymers and Predictive Methods**

Sponsoring Units: DPOLY DSOFT

Chair: Michael Hore, Case Western Reserve University

Room: 506

8:00AM - 8:12AM	34.00001: Solvent-Non-Solvent Rapid Injection for the Preparation of Hierarchically Ordered Hydrogels <i>Robert Hickey</i>
8:12AM - 8:24AM	34.00002: Nano Spray-Dried Block Copolymer Nanoparticles and Their Transformation into Hybrid and Inorganic Nanoparticles <i>Inbal Weisbord, Neta Shomrat, Hen Moshe, Alejandro Sosnik, Tamar Segal-Peretz</i>
8:24AM - 8:36AM	34.00003: Understanding and controlling metal oxide growth within block copolymers <i>Neta Shomrat, Inbal Weisbord, Rotem Azoulay, Barun Barick, Assaf Simon, Tamar Segal-Peretz</i>
8:36AM - 8:48AM	34.00004: Process-directed self-assembly: Do we understand the collective short-time dynamics in multicomponent polymer melts? <i>Marcus Mueller</i>
8:48AM - 9:00AM	34.00005: Nonsolvent Induced Phase Separation in Polymer Droplets <i>Douglas Tree, Rami Alhasan, Dakota Banks, Tanner Wilcoxson</i>
9:00AM - 9:12AM	34.00006: Arrested mobility and thermal fluctuation effects on the mass transfer induced phase separation of ternary polymer solutions <i>Jan Ulric Garcia, Douglas Tree, Tatsuhiro Iwama, Kris T Delaney, Glenn H Fredrickson</i>
9:12AM - 9:48AM	34.00007: Precision polymer nanoparticles <i>Invited Author: Rachel O'Reilly</i>
9:48AM - 10:00AM	34.00008: Molecular Modeling of Poly(methylmethacrylate- <i>block</i> -acrylonitrile) as Precursors of Porous Carbon Fibers <i>Xi Ryan Hao, Joel M. Serrano, Tianyu Liu, Assad Ullah Khan, Brandon Botset, Benjamin J. Stovall, Zhen Xu, Dong Guo, Ke Cao, Guoliang Liu, Shengfeng Cheng</i>
10:00AM - 10:12AM	34.00009: Phase diagram for diblock copolymer melts from Langevin field-theoretic simulations <i>Tom Beardsley, Mark W Matsen</i>
10:12AM - 10:24AM	34.00010: Entanglements in block copolymers self-assembled into lamellae morphology <i>Nicolas Garcia, Jean-Louis BARRAT</i>
10:24AM - 10:36AM	34.00011: Systematic construction of the dynamic density functional theory for inhomogeneous polymer systems <i>Sriteja Mantha, Friederike Schmid</i>
10:36AM - 10:48AM	34.00012: Spectrally-Accurate Linear-Scaling Self Consistent Field Theory and Applications <i>Daniel Vigil, Carlos J Garcia-Cervera, Kris T Delaney, Glenn H Fredrickson</i>
10:48AM - 11:00AM	34.00013: Open-source SCFT on graphics processing units <i>Guo Kang Cheong, Anshul Chawla, David Clark Morse, Kevin D Dorfman</i>

Thursday, March 5, 2020 8:00 am – 11:00 am

**Session R35: Electric Polarization and Polymer Physics**

Sponsoring Units: DPOLY GSNP DCP DCOMP

Chair: Jihong Ma, Oak Ridge National Lab

Room: 507

8:00AM - 8:36AM	35.00001: How to Define Electric Potential in a Polarized Polymer Electrolyte Why is it Important? <i>Invited Author: Nitash Balsara</i>
8:36AM - 8:48AM	35.00002: The impact of chemical modification on charge injection at metal/polyolefin interfaces <i>Yiyuan Wang, Mikael Unge, Sari J. Laihonon, Arash A Mostofi</i>
8:48AM - 9:00AM	35.00003: Field-theoretic study of salt-induced order and disorder in a polarizable diblock copolymer <i>Douglas Grzetic, Kris T Delaney, Glenn H Fredrickson</i>
9:00AM - 9:12AM	35.00004: Nanostructure and Local Dynamic Effects on Ionic Conductivity of Polymer-Grafted Nanoparticles in Ionic Liquids <i>Siqi Liu, Madhusudan Tyagi, Pinar Akcora</i>
9:12AM - 9:24AM	35.00005: Capacitance of films containing polymerized ionic liquids <i>Rajeev Kumar, Vera bocharova, Jyoti P Mahalik, Kevin Silmore</i>
9:24AM - 9:36AM	35.00006: Comparing Stockmayer Fluid Simulation and Experiment: Ion Solvation with Permanent Dipoles <i>Cameron Shock, Issei Nakamura, Amalie Frischknecht, Mark Stevens</i>
9:36AM - 9:48AM	35.00007: Enhancing the Dielectric Breakdown Strength of Solid-State Polymer Capacitors by Chain End Manipulations <i>Maninderjeet Singh, Wenjie Wu, Mei Dong, David Tran, Karen L Wooley, Nihar Pradhan, Dharmaraj Raghavan, Alamgir Karim</i>
9:48AM - 10:00AM	35.00008: Dendrimer Approach toward High Permittivity Polymer Dielectrics for Electrical Energy Storage <i>Beibei Chen, Samantha Daymon, Oluwapelumi Kareem, McKenna Redding, Brian Olson, Mohamed K. Hassan, Scott M Grayson, Sergei Nazarenko</i>
10:00AM - 10:12AM	35.00009: High $\kappa$ polymers of intrinsic microporosity: A new class of high-temperature and low-loss dielectrics for microelectronic applications <i>Lei Zhu, Zhongbo Zhang, Man Hin Kwok</i>
10:12AM - 10:24AM	35.00010: Phase equilibria in P(TrFE-VDF): conformation and chirality <i>Bing Zhang, Wenchang Lu, Yang Liu, Wenhan Xu, Aziguli Haibibu, Zhubing Han, Qing Wang, Jerry Bernholc</i>
10:24AM - 11:00AM	35.00011: Ionic and Local Electric Polarization Effects in Polymers <i>Invited Author: George Floudas</i>

Thursday, March 5, 2020, 8:00 am – 11:00 am

Additional DPOLY Co-Sponsored Sessions

**R24. Focus Physics of Protein Structure, Folding and Design**

Sponsoring Units: GSNP DBIO DPOLY

Room: 401

**R26. Focus Physics of Genome Organization: From DNA to Chromatin: I**

Sponsoring Units: DBIO DPOLY GSNP

Room: 403

**R29. Focus Active Matter and Liquid Crystals in Biological Systems II**

Sponsoring Units: DSOFD DBIO GSNP DPOLY

Room: 501

**R30. Focus Visualizing Forces in Soft Materials via Photoelastic and Other Optical Techniques**

Sponsoring Units: DSOFD DPOLY GSNP DBIO

Room: 502

**R58. Focus DFT and Beyond VIII**

Sponsoring Units: DCP DCOMP DPOLY DCOMP

Room: Mile High Ballroom 3B



Thursday, March 5, 2020 11:15 am – 2:15 pm

### Session S32: Dynamics of Glassy Polymers Under Nanoscale Confinement III

Sponsoring Units: DPOLY DSOFT DCP

Chair: Jane Lipson, Dartmouth College

Room: 504

11:15AM - 11:27AM	32.00001: A Novel Technique for the Characterization of Freestanding Ultrathin Film Mechanics <i>Luke Galuska, Song Zhang, Eric Muckley, Dakota Ehlenberg, Ilia Ivanov, Xiaodan Gu</i>
11:27AM - 11:39AM	32.00002: Chains entanglements and flow within the mobile surface layers of glassy polymers <i>Biao Zuo, Zhiwei Hao, Xinping Wang, Rodney Priestley</i>
11:39AM - 11:51AM	32.00003: Entanglement Effect on Mechanical Properties of Ultrathin Glassy Polymer Films <i>Cynthia Bukowski, Alfred J Crosby</i>
11:51AM - 12:27PM	32.00004: Effect of Confinement on Modulus and Fracture of Thin Conjugated Polymer Films For Organic Electronics <i>Invited Author: Xiaodan Gu</i>
12:27PM - 12:39PM	32.00005: Mechanical Relaxations of Free-standing Polymer Films <i>Hailin YUAN, Ophelia Tsui</i>
12:39PM - 12:51PM	32.00006: Effects of Nanoparticles Motion on a Bound Layer in Strongly Attractive Polymer Nanocomposites <i>Hamed Emany, Francis Starr, Sanat Kumar</i>
12:51PM - 1:03PM	32.00007: Growth of Irreversibly Adsorbed Layers and Corresponding Local Tg Perturbances in Polymer Nanocomposites <i>Katelyn Randazzo, Biao Zuo, Rodney Priestley</i>
1:03PM - 1:15PM	32.00008: Comparison of Solution Grown and Film Washed Adsorbed Layers and Their Corresponding Impact on Film Dynamics <i>Connie B Roth, Michael F Thees, Jennifer A McGuire, Xinru Huang</i>
1:15PM - 1:27PM	32.00009: Property enhancements and dynamic gradients in P2VP-silica nanocomposites <i>Tong Wei, John Torkelson</i>
1:27PM - 1:39PM	32.00010: Polymer conformations and dynamics in polymer nanoparticle composite with high nanoparticle loading <i>Emily Lin, Robert Riggelman</i>
1:39PM - 1:51PM	32.00011: Direct probing of the fracture behavior for pseudo-free-standing polymeric ultra-thin films <i>Song Zhang, Masato Koizumi, Lihua Jin, Xiaodan Gu</i>
1:51PM - 2:03PM	32.00012: Glassy, Conjugated Polymer Nanoparticles Formed by a Semiflexible Polymer: A Molecular Dynamic Study <i>Supun Samindra Kamkanam Mohottalalage, Gary Grest, Dvora Perahia</i>
2:03PM - 2:15PM	32.00013: On the stability of initiators for surface-initiated controlled radical polymerization <i>Christian Pester</i>

Thursday, March 5, 2020 11:15 am – 2:15 pm

**Session S33: Physics of Foams: Fundamentals and Applications**

Sponsoring Units: DPOLY FIAP DSOF T GSNP

Chair: Kshitish Patankar, Dow

Room: 505

11:15AM - 11:51AM	33.00001: Bubble Nucleation in Polymer-CO <sub>2</sub> Mixtures <i>Invited Author: Zhen-Gang Wang</i>
11:51AM - 12:03PM	33.00002: Equilibrium coexistence between polyol, CO <sub>2</sub> , and a physical blowing agent at elevated pressures <i>Huikuan Chao, Andrew Ylitalo, Julie Kornfield, Valeriy Ginzburg, Weijun Zhou, Thomas Fitzgibbons, Zhen-Gang Wang</i>
12:03PM - 12:15PM	33.00003: Microfluidic Approach to Study Bubble Nucleation in Polymeric Foams for the Development of DFT-based Models <i>Andrew Ylitalo, Huikuan Chao, Thomas Fitzgibbons, Valeriy Ginzburg, Weijun Zhou, Zhen-Gang Wang, Julie Kornfield</i>
12:15PM - 12:27PM	33.00004: An Off-Lattice Sanchez-Lacombe Related Equation of State Extensible to Polymeric Foams <i>Hassan Alam, Chul B. Park, Russell B Thompson</i>
12:27PM - 1:03PM	33.00005: Experimental Test of the Border-Crossing Model of Diffusive Coarsening in Wet Foams <i>Invited Author: Douglas Durian</i>
1:03PM - 1:15PM	33.00006: Experimentally Testing a Generalized Coarsening Model for Quasi-Two-Dimensional Wet Foams <i>Anthony Chieco, Douglas Durian</i>
1:15PM - 1:27PM	33.00007: Intelligent Design of Cellular Solids for Impact Mitigation <i>Marcos Reyes-Martinez, Meng Shen, Edwin P Chan, Christopher Soles, Nidhi Pashine, Sidney Robert Nagel, Heinrich M. Jaeger, Juan De Pablo</i>
1:27PM - 1:39PM	33.00008: Heat transfer of low-density styrenic foam <i>Anson Wong, Mark Rickard</i>
1:39PM - 1:51PM	33.00009: Human Comfort and the Physics of Foams <i>Kaoru Aou, Wenbo Xu, Laura Dietsche, Douglas Brune, Manoj Thota</i>
1:51PM - 2:03PM	33.00010: Foam formation in microfluidic EDGE devices: tuning the bubble size <i>Boxin Deng, Karin Schroën, Jolet De Ruiter</i>
2:03PM - 2:15PM	33.00011: Phoaamtonic designs yield sizeable 3D photonic band gaps <i>Michael Andreas Klatt, Paul J Steinhardt, Salvatore Torquato</i>

Thursday, March 5, 2020 11:15 am – 2:15 pm

**Session S34: Organic Electronics I: Microstructure and Mechanical Property**

Sponsoring Units: DPOLY FIAP DMP

Chair: Stephanie Lee, Stevens Inst of Tech

Room: 506

11:15AM - 11:51AM	34.00001: Advances in Non-Fullerene Organic Photovoltaics <i>Invited Author: Samson Jenekhe</i>
11:51AM - 12:03PM	34.00002: Revealing the Microstructure of the Active Layer of Ternary Organic Solar Cells using Energy-Filtered TEM <i>Ismail Alperen Ayhan, Enrique D Gomez</i>
12:03PM - 12:15PM	34.00003: Solution Processed Organic and Inorganic Transistors – Application in Inverter Circuits <i>John Barron, Alec Pickett, James Glaser, Suchismita Guha</i>
12:15PM - 12:27PM	34.00004: Electric field-induced second harmonic generation imaging of organic thin-film devices <i>PAYAL BHATTACHARYA, Oksana Ostroverkhova, Ping Yu, Suchismita Guha</i>
12:27PM - 12:39PM	34.00005: Structure of vapor-deposited glasses within a few nanometers of organic-organic interfaces is bulk-like <i>Marie Fiori, Kushal Bagchi, Michael Toney, Mark Ediger</i>
12:39PM - 12:51PM	34.00006: Polymer light-emitting diodes with an emitting layer based on a nano-confined semiconducting polymer blend <i>Anielen Ribeiro, Katharina Landfester, Paul Blom, Jasper Michels</i>
12:51PM - 1:03PM	34.00007: Sub-Turn-on Exciton Quenching Modulated by Spontaneous Orientation Polarization in Organic Light-Emitting Devices <i>John Bangsund, Jack R Van Sambeek, Russell J Holmes</i>
1:03PM - 1:39PM	34.00008: Influence of Acceptor Type and Polymer Molecular Weight on the Mechanical and Photovoltaic Properties of Polymer Solar Cells <i>Invited Author: Bumjoon Kim</i>
1:39PM - 1:51PM	34.00009: Mechanically-durable high performance OPVs using semi-interpenetrating networks <i>Zhiqi Hu, Changxu Sun, Joshua Jackson, Tanguy Terlier, Rafael Verduzco</i>
1:51PM - 2:03PM	34.00010: Mechanically-Robust and High-Performance Thin Film Transistors with Regioregular- <i>block</i> -Regiorandom Poly(3-hexylthiophene) Copolymers <i>Hyeonjung Park, Boo Soo Ma, Jin-Seong Kim, Youngkwon Kim, Hyeong Jun Kim, Donguk Kim, Hongseok Yun, Junghun Han, Felix Sunjoo Kim, Taek-Soo Kim, Bumjoon Kim</i>
2:03PM - 2:15PM	34.00011: Multiscale-ordered, highly stretchable polymer semiconductor through nanoconfinement <i>Jie Xu</i>

Thursday, March 5, 2020 11:15 am – 2:15 pm

**Session S35: Electrostatic Complexation of Proteins and Protein Mimics**

Sponsoring Units: DPOLY

Chair: Samanvaya Srivastava, University of California, Los Angeles

Room: 507

11:15AM - 11:27AM	35.00001: The Effect of Protein Surface Charge Distribution on Protein-Polymer Complexation <i>Sieun Kim, Hursh Sureka, Basak Kayitmazer, Bradley Olsen</i>
11:27AM - 11:39AM	35.00002: Influence of charge heterogeneity and charge regulation in complexation between proteins and weak polyelectrolytes. <i>Rituparna Samanta, Venkatraghavan Ganesan</i>
11:39AM - 11:51AM	35.00003: Coacervate gel composites: Phase behavior and topologically frustrated dynamical hierarchy <i>Di Jia, Murugappan Muthukumar</i>
11:51AM - 12:03PM	35.00004: SAXS Investigations of Structure and Phase Behavior of Polyelectrolyte-Nanoparticle Assemblies <i>Advait Holkar, Jesse Toledo, Samanvaya Srivastava</i>
12:03PM - 12:15PM	35.00005: Stabilizing Membraneless Polyelectrolyte Complex Coacervates Towards Inherent Coalescence <i>Aman Agrawal, Alamgir Karim</i>
12:15PM - 12:27PM	35.00006: Protein Purification by Complex Coacervation <i>Rachel Kapelner, Allie Obermeyer</i>
12:27PM - 12:39PM	35.00007: Effects of therapeutic chemical modifications on polyelectrolyte properties of oligonucleotides <i>Jeffrey Viereggs, Alexander E. Marras, Matthew Tirrell</i>
12:39PM - 12:51PM	35.00008: From Monomer Sequence to Self-Assembly in Polyelectrolyte Coacervation <i>Gary Min Chiang Ong, Tyler Lytle, Charles Sing</i>
12:51PM - 1:03PM	35.00009: Sequence-Controlled Complex Coacervation of Random Polyelectrolytes <i>Artem Rumyantsev, Nicholas Jackson, Boyuan Yu, Jeffrey M Ting, Wei Chen, Matthew Tirrell, Juan De Pablo</i>
1:03PM - 1:39PM	35.00010: Concentration and separation of proteins using polyion condensates <i>Invited Author: Saskia Lindhoud</i>
1:39PM - 1:51PM	35.00011: Complex coacervation of polymerized ionic liquids in non-aqueous solvents <i>Minjung Lee, Ryan Hayward</i>
1:51PM - 2:03PM	35.00012: Computational Investigation of Sequence-Controlled Complex Coacervation in Statistical Copolymers <i>Boyuan Yu, Nicholas Jackson, Artem Rumyantsev, Juan De Pablo</i>

Thursday, March 5, 2020 11:15 am – 2:15 pm

**Session S68: Non-equilibrium Dynamics of Film Formation During Drying**

Sponsoring Units: DPOLY DSOFIT

Chair: Gary Grest, Sandia National Laboratories

Room: Four Seasons 4

11:15AM - 11:51AM	68.00001: Sandwich Layering in Binary Colloidal Films During Evaporative Drying <i>Invited Author: Surita Bhatia</i>
11:51AM - 12:27PM	68.00002: Illuminating the dynamics of drying suspensions in droplets and films <i>Invited Author: Joris Sprakel</i>
12:27PM - 1:03PM	68.00003: Drying Process in Films of Nanoparticle Suspensions and Polymer Solutions <i>Invited Author: Shengfeng Cheng</i>
1:03PM - 1:39PM	68.00004: Stratification in Drying Colloidal Films: A competition between diffusion, evaporation and diffusiophoresis <i>Invited Author: Alexander Routh</i>
1:39PM - 2:15PM	68.00005: The role of hydrodynamic interactions in models and simulations of drying <i>Invited Author: Michael P Howard</i>

Thursday, March 5, 2020, 11:15 am – 2:15 pm

Additional DPOLY Co-Sponsored Sessions

**S23. Focus Macromolecular Phase Separation in Biology I**

Sponsoring Units: DBIO DSOF GSNP DPOLY

Room: 304

**S26. Focus Physics of Genome Organization: From DNA to Chromatin: II**

Sponsoring Units: DBIO DPOLY GSNP

Room: 403

**S29. Focus Active Matter and Liquid Crystals in Biological Systems III**

Sponsoring Units: DSOF DBIO GSNP DPOLY

Room: 501

Thursday, March 5, 2020 2:30 pm – 5:30 pm

**Session U32: Polymers with Special Architectures: From Molecular Design to Physical Properties I**

Sponsoring Units: DPOLY DSOFIT

Chair: Reika Katsumata, Univ of Mass - Amherst

Room: 504

2:30PM - 2:42PM	32.00001: Effect of Molecular Architecture on the Conformational Relaxation for Interfacial Polymer Chains <i>Hung K. Nguyen, Daisuke Kawaguchi, Keiji Tanaka</i>
2:42PM - 2:54PM	32.00002: <i>In Situ</i> Synchrotron Radiation X-ray Scattering Evaluation of Domain Size and Spacing of Thermoplastic Elastomer under Elongation <i>Nattanee Dechnarong, Kazutaka Kamitani, Chao-Hung Cheng, Shiori Masuda, Shuhei Nozaki, Chigusa Nagano, Yoshifumi Amamoto, Ken Kojio, Atsushi Takahara</i>
2:54PM - 3:06PM	32.00003: Structure and Physical Properties of Zwitter Ionic Polyelectrolyte Brushes at Aqueous Interface <i>Atsushi Takahara</i>
3:06PM - 3:18PM	32.00004: Highly Branched Polymers with High Ether Oxygen Content for Membrane CO <sub>2</sub> /N <sub>2</sub> Separation <i>Haiqing Lin</i>
3:18PM - 3:30PM	32.00005: Protein Resistant Property of Nanometer-Scale Architecture of Polymer Chains <i>Maya Endoh, Daniel Salatto, Zhixing Huang, Yuto Koga, Yashasvi Bajaj, Benjamin Yavitt, Jan-Michael Carrillo, Dmytro Nykypanchuk, Tad Koga</i>
3:30PM - 3:42PM	32.00006: Linear vs Star polymers in Hydrogen-Bonded Assemblies <i>Aliaksei Aliakseyeu, John F Ankner, Svetlana Sukhishvili</i>
3:42PM - 4:18PM	32.00007: Effect of Branches and Cycles on Polymer Melt Surface Dynamics <i>Invited Author: Mark Foster</i>
4:18PM - 4:30PM	32.00008: Dilute solution structure of bottlebrush polymers <i>Sarit Dutta, Tianyuan Pan, Matthew Aaron Wade, Dylan J Walsh, Simon A Rogers, Damien S Guironnet, Charles Sing</i>
4:30PM - 4:42PM	32.00009: Morphology and Dynamics of Catenanes in Dilute Solutions and at Liquid/Liquid Interface <i>Saeed Akbari, Shaghayegh Khani, Joao M Maia, Mesfin Tsigie</i>
4:42PM - 4:54PM	32.00010: Bottlebrush Polymers in the Melt and Polyelectrolytes in Solution Share Common Structural Features <i>Joel Sarapas, Tyler Martin, Alexandros Chremos, Jack Douglas, Kathryn Beers</i>
4:54PM - 5:30PM	32.00011: Effect of Chain Architecture on the Structure, Diffusion, and Swelling in Thin Polymer Films <i>Invited Author: Bulent Akgun</i>

Thursday, March 5, 2020 2:30 pm – 5:30 pm

**Session U33: Polymers and Soft Solids at Interfaces: Tribology, Wear, Rheology and Interactions**

Sponsoring Units: DPOLY DSOFTE GSNP DFD

Chair: Catheryn Jackson, Dow Chemical Company

Room: 505

2:30PM - 2:42PM	33.00001: Formation of Pickering Emulsions Using Nanodiamonds <i>Barbara V Farias, Derek Brown, Allison Hearn, Saad Khan</i>
2:42PM - 2:54PM	33.00002: Utilizing Inorganic Nanoadditives to Influence the Surface Properties of Polymer Films <i>Spiros H. Anastasiadis, Fanourios Krasanakis, Antigonos Theodorakis, Kiriaki Chrissopoulou</i>
2:54PM - 3:06PM	33.00003: Interfacial Dynamics of Confined Microgel Liquids on Soft Surfaces <i>Kehua Lin, Yingxi Elaine Zhu</i>
3:06PM - 3:42PM	33.00004: How osmotic pressure governs sliding and surface structures of swollen crosslinked hydrogels <i>Invited Author: Alison C Dunn</i>
3:42PM - 3:54PM	33.00005: Bio-inspired surface modification of PDMS to reduce dry friction <i>Mengyuan Wang, Sujan Ghosh, Adrienne Blevins, Christopher M Stafford, Jason Kilgore, Sijia Huang, Min Zou, Yifu Ding</i>
3:54PM - 4:06PM	33.00006: Friction and wear of polyzwitterionic brush-grafted surfaces <i>Christopher Serfass, Emily F Roe, Lilian C Hsiao</i>
4:06PM - 4:18PM	33.00007: Surface Forces Apparatus Measurements Between Oppositely Charged Polyelectrolyte Brushes as a Function of Ionic Strength <i>Dean Mastropietro, Matthew Tirrell</i>
4:18PM - 4:54PM	33.00008: Tribology of soft colloidal microgels: An oral perspective <i>Invited Author: Anwesh Sarkar</i>
4:54PM - 5:06PM	33.00009: Pore-size dependence and glassy behavior of hydrogel friction on smooth surfaces <i>Nicholas Cuccia, Suraj Pothineni, Brady Wu, Justin Burton</i>
5:06PM - 5:18PM	33.00010: Study of the tribological behavior of hydrogel-like materials with an extended Surface Forces Apparatus <i>Rosa M. Espinosa-Marzal, Tooba Shoaib</i>
5:18PM - 5:30PM	33.00011: Indentation of a microparticle into an oil-coated, soft silicone surface <i>Justin Glover, Jonathan Pham</i>



Thursday, March 5, 2020 2:30 pm – 5:30 pm

### Session U34: Organic Electronics II: Charge Transport and Theory

Sponsoring Units: DPOLY FIAP DMP

Chair: Stephanie Lee, Stevens Inst of Tech

Room: 506

2:30PM - 2:42PM	34.00001: Electro-reflectance study of low-voltage turn-on in triplet fusion OLED materials <i>Sebastian Engmann, Emily Bittle, Lee Richter, David James Gundlach</i>
2:42PM - 2:54PM	34.00002: The rationale behind the acceptor-donor-acceptor chemical design of non-fullerene acceptors <i>Anastasia Markina, Frederic Laquai, Denis Andrienko</i>
2:54PM - 3:06PM	34.00003: Engineering Diffusion of Charge-Transfer States at Organic Semiconductor Heterojunctions <i>Nolan Concannon, Tao Zhang, Russell J Holmes</i>
3:06PM - 3:42PM	34.00004: First-Principles Theory for Understanding Excitons in Stacked Organic Assemblies <i>Invited Author: Sahar Sharifzadeh</i>
3:42PM - 3:54PM	34.00005: Quantum Yield Enhancement of BDMO-PPV During Photo-Degradation <i>Matthew Deutsch, Heungman Park</i>
3:54PM - 4:06PM	34.00006: Photospintronics- Light-controlled spin transport in hybrid chiral oligopeptide-nanoparticle structures <i>Achintya Singha, Suvadip Masanta, Rupshali Roy</i>
4:06PM - 4:18PM	34.00007: Morphology-Dependent Triplet Exciton Diffusion in Vapor Deposited Pentacene Thin Films <i>Kaicheng Shi, Ian Curtin, Andrew Healy, Tao Zhang, David Blank, Russell J Holmes</i>
4:18PM - 4:30PM	34.00008: Polaronic effects and charge transport in donor-acceptor semiconducting polymers <i>Xiao Wang, Leonard F Register, Ananth Dodabalapur</i>
4:30PM - 4:42PM	34.00009: Switching dynamics in Croconic Acid thin film <i>Xuanyuan Jiang, Pratyush P Buragohain, Shashi Poddar, Haidong Lu, Alexei Gruverman, Xiaoshan Xu</i>
4:42PM - 4:54PM	34.00010: Self-assembled monolayer formation of linear molecules onto a FCC(111) surface <i>Eduardo Cisternas, Gonzalo Dos Santos, Marcos Flores, Eugenio Vogel, Antonio Jose Ramirez-Pastor</i>
4:54PM - 5:30PM	34.00011: Controlling energy levels and Fermi level en route to fully tailored energetics in organic semiconductors <i>Invited Author: Moritz Riede</i>

Thursday, March 5, 2020 2:30 pm – 5:30 pm

**Session U35: Rheology and Dynamics of Polymers and Polyelectrolytes**

Sponsoring Units: DPOLY DSOFT GSNP DBIO

Chair: Vivek Sharma, Univ of Illinois - Chicago

Room: 507

2:30PM - 3:06PM	35.00001: Polyelectrolyte solutions in complex macro- and micro-scale flows <i>Invited Author: Cari Dutcher</i>
3:06PM - 3:18PM	35.00002: Measuring packing length in simulations for different polymer architectures <i>Sai Vineeth Bobbili, Scott Milner</i>
3:18PM - 3:30PM	35.00003: Influence of Sodium Salts on the Swelling and Rheology of Hydrophobically Crosslinked Hydrogels Determined by QCM-D <i>Bryan Vogt, Mengxue Zhang, Jack Douglas</i>
3:30PM - 3:42PM	35.00004: Effects of humidity on the rheology of supramolecular organogels <i>Dimitris Vlassopoulos, Emmanouil Vereroudakis</i>
3:42PM - 3:54PM	35.00005: Rheology of Jammed Silicone Microgels <i>Senthikumar Duraivel, Thomas Angelini</i>
3:54PM - 4:06PM	35.00006: Predicting the plateau modulus from molecular parameters of conjugated polymers <i>Abigail Fenton, Ralph H Colby, Enrique D Gomez</i>
4:06PM - 4:18PM	35.00007: Accessing Viscoelasticity of PDMS at MHz Frequencies: Physically Intuitive Continuum Mechanics Model for QCM Able to Treat Film Resonance Region <i>Yannic Gagnon, Justin Burton, Connie Roth</i>
4:18PM - 4:30PM	35.00008: Viscoelastic properties of tightly entangled polymeric systems <i>Tadashi Inoue</i>
4:30PM - 4:42PM	35.00009: Microphase Separation in Entangled Polymeric Solutions in Extensional Flows <i>Mohammad Hadi Nafar Sefiddashti, Brian J Edwards, Bamin Khomami</i>
4:42PM - 4:54PM	35.00010: Predicting the Microstructure of Bottlebrush Copolymers <i>Christian Tabezki, Robert Riggelman</i>
4:54PM - 5:06PM	35.00011: Interactions between two knots in a stretched DNA molecule <i>Alexander Klotz, Beatrice Soh, Patrick Doyle</i>
5:06PM - 5:18PM	35.00012: Diffusion of knots in DNA molecules confined in nanochannels <i>Zixue Ma, Kevin D Dorfman</i>
5:18PM - 5:30PM	35.00013: Dynamics of DNA-bridged particle dumbbells in well-entangled, shear-banding polymer solutions under large amplitude oscillatory shear (LAOS) <i>Seunghwan Shin, Kevin D Dorfman, Xiang Cheng</i>

Thursday, March 5, 2020, 2:30 pm – 5:30 pm

Additional DPOLY Co-Sponsored Sessions

**U23. Focus Macromolecular Phase Separation in Biology II**

Sponsoring Units: DBIO DSOFD DPOLY GSNP

Room: 304

**U29. Electrostatic Manipulation of Fluids and Soft Matter I: Electrohydrodynamics**

Sponsoring Units: DSOFD DPOLY DBIO DFD

Room: 501

Friday, March 6, 2020 8:00 am – 11:00 am

**Session W32: Polymers with Special Architectures: From Molecular Design to Physical Properties II**

Sponsoring Units: DPOLY DSOFIT

Chair: Reika Katsumata, Univ of Mass - Amherst

Room: 504

8:00AM - 8:36AM	32.00001: Molecular conformation of rigid cyclic and branched polymers in solution <i>Invited Author: Ken Terao</i>
8:36AM - 8:48AM	32.00002: Scattering from Melts of Combs and Bottlebrushes: Molecular Dynamics Simulations and Theoretical Study <i>Heyi Liang, Zilu Wang, Andrey Dobrynin</i>
8:48AM - 9:00AM	32.00003: Impact of Architectural Asymmetry on Frank-Kasper Phase Formation in Block Polymer Melts <i>Alice Chang, Frank S Bates</i>
9:00AM - 9:12AM	32.00004: Molecular architecture directs linear-bottlebrush-linear triblock copolymers self-assemble to soft, reprocessable elastomers <i>Shifeng Nian, Huada Lian, Zihao Gong, Mikhail Zhernenkov, Jian Qin, Liheng Cai</i>
9:12AM - 9:24AM	32.00005: Structure of bottlebrush polymers end-grafted to a planar surface <i>Jaroslav Paturej, Paul Jungmann, Jenz-Uwe Sommer, Torsten Kreer</i>
9:24AM - 9:36AM	32.00006: Self-assembly of Bottlebrush Amphiphilic Polymers Near/On Surfaces: Coarse-grained Molecular Dynamics Simulation Study <i>Michiel Wessels, Arthi Jayaraman</i>
9:36AM - 9:48AM	32.00007: Effects of Ionic Groups on Dynamics of Linear-Star Polymer Blends: A Molecular Dynamics Simulation Study <i>Manjula Senanayake, Gary Grest, Dvora Perahia</i>
9:48AM - 10:00AM	32.00008: Complete photonic band gaps with nonfrustrated ABC bottlebrush copolymers <i>Joshua Lequeieu, Kris T Delaney, Glenn H Fredrickson</i>
10:00AM - 10:12AM	32.00009: Polydispersity Stabilized Complex Morphologies in Poly(styrene- <i>b</i> -methyl methacrylate) Diblock Copolymers <i>Inho Kim, Sheng Li</i>
10:12AM - 10:24AM	32.00010: Molecular Design of Post-functionalizing Block Copolymers for Versatile Morphologies <i>Teruaki Hayakawa, Seina Yamazaki, Yasunari Yoshimura, Yuta Nabae</i>
10:24AM - 10:36AM	32.00011: Poly(Styrene- <i>block</i> -Glycidyl Methacrylate- <i>block</i> -Methyl Methacrylate) as a Versatile Platform for Exploring the Phase Diagram of Linear Triblock Copolymers <i>Kevin Wylie, Lei Dong, Yuta Nabae, Teruaki Hayakawa</i>
10:36AM - 10:48AM	32.00012: Helical sense of wrapped belts in star terpolymers via slice and view scanning electron microscopy <i>Wenpeng Shan, Xueyan Feng, George Polymeropoulos, Nikos Hadjichristidis, Edwin Thomas</i>
10:48AM - 11:00AM	32.00013: Molecular dynamics simulations and neutron scattering provide an atomistic level understanding of the self-assembly of poloxamines <i>Robert Ziolek, Gustavo Gonzalez-Gaitano, Cecile A. Dreiss, Christian D. Lorenz</i>

Friday, March 6, 2020 8:00 am – 11:00 am

### Session W33: Polymer Crystals and Crystallization I

Sponsoring Units: DPOLY DSOFT DMP

Chair: Christopher Li, Drexel Univ

Room: 505

8:00AM - 8:12AM	33.00001: Polymer epitaxy under heterogeneous confinement <i>Jason Liu, Yang Xia, Geoffrey Zheng, Mikko Haataja, Craig Arnold, Rodney Priestley</i>
8:12AM - 8:24AM	33.00002: Understanding polymer crystallization undergoing zone annealing <i>Alejandro Krauskopf, Andrew Jimenez, Sanat Kumar, Elizabeth Lewis, Bryan Vogt, Julia Pribyl, Brian C Benicewicz</i>
8:24AM - 8:36AM	33.00003: Tie Molecules and the Brittle-to-Ductile Transition in Near-Monodisperse and Bidisperse Linear Polyethylene <i>Seong Hyuk Cho, Richard Register</i>
8:36AM - 9:12AM	33.00004: Flow Induced Crystallization: Insights from Molecular Simulation <i>Invited Author: Gregory Rutledge</i>
9:12AM - 9:24AM	33.00005: Stereoregularity, Molecular Dynamics, and Unusual Crystallinity of Hydrogenated Polynorbornenes: Configurational Disorder <i>Toshikazu Miyoshi, Navin Kafle, Yuta Makita</i>
9:24AM - 9:36AM	33.00006: Crystallization of Asymmetric PEO-b-PCL from Different Solvents <i>Ryan Van Horn</i>
9:36AM - 9:48AM	33.00007: Symmetry breaking via polymer chain overcrowding in molecular bottlebrush crystallization <i>Christopher Li, Hao Qi, Mark Staub, Daniel Henn, Bin Zhao</i>
9:48AM - 10:00AM	33.00008: Improving Crystallite Size and Orientation in Organic Semiconductor Thin Films using PDMS-Assisted Crystallization <i>Vesta Zhelyaskova, Prachi Sharma, Daniel Dessau, Sean Shaheen</i>
10:00AM - 10:12AM	33.00009: Wang-Landau Simulation of the Free Energy Surface of Crystallization in a Polymer Melt <i>Pierre Kawak, Andrew Scott Gibson, Logan Stewart Brown, Beverly Delgado, Douglas Tree</i>
10:12AM - 10:24AM	33.00010: Crystallization and self-nucleation of conjugated polymers <i>Lucia Fernandez-Ballester, Ramin Hosseinabad, Jesse Kuebler</i>
10:24AM - 10:36AM	33.00011: Paradigm on the Growth Kinetics of Lamellar Polymer Crystals <i>Wenbing Hu</i>
10:36AM - 10:48AM	33.00012: Tuning Nanoparticle Dispersion to Control Confined Polymer Crystallization for Induced Ordering <i>Andrew Jimenez, Abdullah Al Torbaq, Alejandro J Müller, Sanat Kumar</i>
10:48AM - 11:00AM	33.00013: Kinetics of Shape-fixing in Semicrystalline Shape-memory Networks <i>Jeh-Chang Yang, Mitchell Anthamatten</i>

Friday, March 6, 2020 8:00 am – 11:00 am

### Session W34: Polymers Under Extreme Environmental Conditions

Sponsoring Units: DPOLY GSCCM DCP

Chair: Nir Goldman, Lawrence Livermore Natl Lab

Room: 506

8:00AM - 8:12AM	34.00001: Anisotropic hydrolysis susceptibility in deformed polydimethylsiloxanes <i>Matthew Kroonblawd, Nir Goldman, James Lewicki</i>
8:12AM - 8:24AM	34.00002: Relating Electrical Properties of Highly Disordered Insulating Materials via the Dispersion Parameter <i>Zachary Gibson, John R Dennison</i>
8:24AM - 8:36AM	34.00003: Atomistic analysis of PBO carbonization process with ReaxFF Reactive Force Field <i>Malgorzata Kowalik, Chowdhury M. Ashraf, Siavash Rajabpour, Behzad Damirchi, Dooman Akbarian, Qian Mao, Adri C.T. van Duin</i>
8:36AM - 8:48AM	34.00004: Characterization of the shock response of heterogenous polymer foams using multi-point PDV measurements <i>John Lang, Rachel Huber, Katie Maerzke, Dana Dattelbaum</i>
8:48AM - 9:00AM	34.00005: Investigating the Shock Properties of Polycarbonate <i>James Hawreliak</i>
9:00AM - 9:12AM	34.00006: Polyimide Two-Wave Structure Produced by Shock Compression <i>Rachel Huber, Brian Bartram, Dana Dattelbaum, Lloyd L Gibson, John Lang</i>
9:12AM - 9:48AM	34.00007: 3D-printed polymeric foam under constant compressive strain: constitutive and multiscale models of long-term property changes <i>Invited Author: Amitesh Maiti</i>
9:48AM - 10:00AM	34.00008: Surface hardness enhancement of ion bombarded polycarbonate <i>Sunmog Yeo, Chang Young Lee, Won-Je Cho, Yong-Seok Hwang, Chorong Kim, Dong-Seok Kim</i>
10:00AM - 10:12AM	34.00009: Features of shock Hugoniot measurements of underdense materials <i>Dana Dattelbaum, Joshua Coe, Brittany Branch</i>
10:12AM - 10:24AM	34.00010: Efficient Shockwave Energy Dissipation in Dynamic PDMS Networks <i>Christopher Evans, Nancy Sottos, Jaejun Lee, Laura Porath, Brian Jing</i>
10:24AM - 11:00AM	34.00011: Synthesis and Self-Assembly of Multi-Patch Functional Colloids <i>Invited Author: Alexander Böker</i>

Friday, March 6, 2020 8:00 am – 11:00 am

### Session W35: Dynamics in Polyelectrolyte Complexes and Associative Polymer Networks

Sponsoring Units: DPOLY

Chair: Jelena Dinic, Argonne Natl Lab

Room: 507

8:00AM - 8:12AM	35.00001: Engineering hydrogel viscoelastic mechanics via bio-inspired supramolecular metal-coordinate dynamics <i>Niels Holten-Andersen</i>
8:12AM - 8:24AM	35.00002: Experimental evidence of universal behavior in ion-induced volume phase transition in polyelectrolyte gels <i>Matan Mussel, Peter Basser, Ferenc Horkay</i>
8:24AM - 8:36AM	35.00003: pH modulated nanoparticle diffusion in silica-polyacrylamide hydrogels <i>Katie Rose, Daeyeon Lee, Russell Composto</i>
8:36AM - 8:48AM	35.00004: Length-scale dependent anomalous diffusion regimes in associative protein hydrogels <i>Ameya Rao, Helen Yao, Bradley Olsen</i>
8:48AM - 9:00AM	35.00005: Anomalous diffusion in a model associative network with high sticker density. <i>Irina Mahmad Rasid, Niels Holten-Andersen, Bradley Olsen</i>
9:00AM - 9:12AM	35.00006: Scattering Investigations of Structure and Dynamics of Triblock Polyelectrolyte Complex Hydrogels <i>Defu Li, Samanvaya Srivastava</i>
9:12AM - 9:24AM	35.00007: Stimuli-responsive polyelectrolyte gels and the role of ion and polymer solvation <i>Alexandros Chremos, Matan Mussel, Peter Basser, Jack Douglas, Ferenc Horkay</i>
9:24AM - 9:36AM	35.00008: Influence of temperature, salt and molecular weight on the dynamics of polyelectrolyte complexes. <i>Mo Yang, Jianbing Shi, Joseph Schlenoff</i>
9:36AM - 9:48AM	35.00009: Water binding and mobility in polyelectrolyte complexes <i>Piotr Batys, Sousa Javan Nikkiah, Yanpu Zhang, Suvesh Lalwani, Jodie Lutkenhaus, Maria Sammalkorpi</i>
9:48AM - 10:24AM	35.00010: Water's effect on the glass transition and dynamic mechanical properties of polyelectrolyte complexes <i>Invited Author: Jodie Lutkenhaus</i>
10:24AM - 10:36AM	35.00011: Electric field-dependent metastable phenomena in polyelectrolyte solutions <i>Khatcher Margossian, Murugappan Muthukumar</i>
10:36AM - 10:48AM	35.00012: Electrospinning Coacervates – No Chain Entanglements Required <i>Xiangxi Meng, Yifeng Du, Yalin Liu, Bryan Coughlin, Jessica Schiffman, Sarah Perry</i>
10:48AM - 11:00AM	35.00013: Phase Separation and Gelation in Solutions of A–B Associative Polymers <i>Scott Danielsen, Michael Rubinstein</i>

Friday, March 6, 2020 8:00 am – 11:00 am

**Session W68: The Organic Electrochemical Transistor**

Sponsoring Units: DPOLY

Chair: Dean DeLongchamp, National Institute of Standards and Technology

Room: Four Seasons 4

8:00AM - 8:36AM	68.00001: Designing polymeric mixed ionic/electronic conductors for organic electrochemical transistors <i>Invited Author: Jonathan Rivnay</i>
8:36AM - 9:12AM	68.00002: Visualizing charge transfer across length scales in printable, conductive polymer electrodes <i>Invited Author: Erin Ratcliff</i>
9:12AM - 9:48AM	68.00003: Monitoring plant physiology with organic electrochemical transistors <i>Invited Author: Eleni Stavrinidou</i>
9:48AM - 10:24AM	68.00004: Electrolyte-Gated Transistors for Fundamental Physics and For Applications <i>Invited Author: C. Daniel Frisbie</i>
10:24AM - 11:00AM	68.00005: Adapting organic electronics to biology (and not vice versa!) <i>Invited Author: Róisín Owens</i>



Friday, March 6, 2020, 8:00 am – 11:00 am

Additional DPOLY Co-Sponsored Sessions

**W23. *Focus* Macromolecular Phase Separation in Biology III**

Sponsoring Units: DBIO DPOLY DSOF GSNP

Room: 304

**W29. *Focus* Electrostatic Manipulation of Fluids and Soft Matter II: Self-Assembly**

Sponsoring Units: DSOF DPOLY DBIO DFD

Room: 501

Friday, March 6, 2020 11:15 am – 2:15 pm

### Session X32: Dynamics and Thermodynamics of Polymer Blends and Solutions in the Bulk and Near Hard Surfaces

Sponsoring Units: DPOLY

Chair: Qiang Wang, Colorado State University

Room: 504

11:15AM - 11:27AM	32.00001: Influence of polymer structure on adsorption onto metal surfaces <i>Christopher O'Bryan, Olekandra Zavgorodnya, Russell Composto, Daeyeon Lee</i>
11:27AM - 11:39AM	32.00002: Nitroxide Radical Polymer-Solvent Interactions and Solubility Parameter Determination <i>Alexandra Easley, Lillian Vukin, Dylan Howard, Jose L Pena, Jodie Lutkenhaus</i>
11:39AM - 11:51AM	32.00003: Shape Engineering of Monodispersed Cone-Shaped Particles by Tuning Blend Structure of AB Diblock Copolymer and C-Type Copolymer within Emulsion <i>Eun Ji Kim, Jae Man Shin, Kang Hee Ku, YongJoo Kim, Hongseok Yun, Bumjoon Kim</i>
11:51AM - 12:03PM	32.00004: Aqueous Solution Behavior of Poly(ethylene oxide) in Presence of Complex Ions <i>David Hoagland, Satyam Srivastava, Zachary Fink, Elizabeth Burns</i>
12:03PM - 12:15PM	32.00005: Quantitatively Determining of Population Ratios in Bimodal Polymeric Solutions by Neutron Scattering <i>Kunlun Hong, Chi-Huan Tung, GUAN-RONG HUANG, Dongsook Chang, Christopher N Lam, Changwoo Do, Yuya Shinohara, Shou-Yi Chang, Yangyang Wang, Wei-Ren Chen</i>
12:15PM - 12:27PM	32.00006: Role of Miscibility in the Shape Memory Properties of Polymer Blends <i>Surbhi Khewle, Pratyush Dayal</i>
12:27PM - 12:39PM	32.00007: Dynamic interfacial trapping of Janus nanorod aggregates in polymer blends <i>Felipe Leis Paiva, Michael Hore, Argimiro Secchi, Veronica Calado, Joao M Maia, Shaghayegh Khani</i>
12:39PM - 12:51PM	32.00008: Title: Tuning Diblock Copolymer Micelles by Cosolvent Effects: A Simulation Study <i>Dong Meng, Jing Zong</i>
12:51PM - 1:03PM	32.00009: Efficient sampling of polymer conformations using Brownian Bridges <i>Vivek Narsimhan, Shiyang WANG, Doraiswami Ramkrishna</i>
1:03PM - 1:15PM	32.00010: Investigation of polymer diffusion in confined geometries using differential dynamic microscopy techniques <i>Emmanuel Hitimana, Sveta Morozova</i>
1:15PM - 1:27PM	32.00011: Direct visualization of branched polymer dynamics using single molecule studies <i>Shivani Patel, Charles M Schroeder</i>
1:27PM - 1:39PM	32.00012: Additive Driven Morphological Transition of Block Copolymer Particles: Elongation, Transformation and Disassembly of Single Domain <i>Seonghan Lee, Jae Man Shin, Kang Hee Ku, Bumjoon Kim</i>
1:39PM - 1:51PM	32.00013: Single molecule visualization of single ring polymers in the flow-gradient plane of shear flow

*Michael Tu, Rae M Robertson-Anderson, Charles M Schroeder*

1:51PM - 2:03PM

32.00014: Phase behavior of diblock copolymer-homopolymer ternary blends containing an asymmetric diblock copolymer

*Bo Zhang, Shuyi Xie, Frank S Bates, Timothy Lodge*

2:03PM - 2:15PM

32.00015: Interactions between Colloidal Particles Mediated by Nonadsorbing Polymers: Casimir and Anti-Casimir Effects

*Pengfei Zhang, Qiang Wang*

Friday, March 6, 2020 11:15 am – 2:15 pm

### Session X33: Polymer Crystals and Crystallization II

Sponsoring Units: DPOLY DSOFT DMP

Chair: Toshikazu Miyoshi, Univ of Akron

Room: 505

11:15AM - 11:27AM	33.00001: Controlling the Mechanical Behavior of Hydrogenated Polynorbornene <i>Jared Klein, Richard Register</i>
11:27AM - 11:39AM	33.00002: What happens upon annealing of pre-drawn semicrystalline polymers? <i>Travis Smith, Shiqing Wang</i>
11:39AM - 11:51AM	33.00003: Entanglement Effect on Chain-Folding Structure in Semicrystalline Polymer Blends <i>Fan Jin, Toshikazu Miyoshi</i>
11:51AM - 12:27PM	33.00004: Flow-Induced Crystallization of Polymers during Multi-Axial Deformation <i>Invited Author: Liangbin Li</i>
12:27PM - 12:39PM	33.00005: Homogeneous crystal nucleation – Nucleation kinetics and thermal stability of nuclei <i>Christoph Schick, Ruslan Adrianov, Timur Mukhametzyanov, Rene Androsch</i>
12:39PM - 12:51PM	33.00006: Are Spherulites Spherical? 3D Visualization of Semicrystalline Polymer Morphology Using Optical Tomography <i>Shu-Gui Yang, Zhen-Zhen Wei, Goran Ungar, Pantea Kazemi, Hui-Jie Xie, Liliana Cseh, Hina Saba</i>
12:51PM - 1:03PM	33.00007: Advanced Polymeric Particles Templated by Polymer Crystallization at Curved Liquid/Liquid Interface <i>Mark Staub, Christopher Li</i>
1:03PM - 1:15PM	33.00008: Phenomenological Theory of Prefreezing at the Solid-Melt Interface <i>Oleksandr Dolynchuk, Muhammad Tariq, Thomas Thurn-Albrecht</i>
1:15PM - 1:27PM	33.00009: Role of flow-induced nematic order in polyethylene nucleation <i>Wenlin Zhang, Ronald Larson</i>
1:27PM - 1:39PM	33.00010: Crystallization and liquid crystallinity in heptadecanilcarbazole-dithienylbenzothiadiazole (PCDTBT) conjugated polymers <i>Ryan Fair, Enrique Gomez</i>
1:39PM - 1:51PM	33.00011: Analyzing morphological and optical properties of poly(3-hexylthiophene) (P3HT) via emitted light's polarization <i>Huan Nguyen, Paulo T Araujo</i>
1:51PM - 2:03PM	33.00012: Computational Model for End-On LCEs <i>James Waters, Anna Balazs</i>
2:03PM - 2:15PM	33.00013: Effect of chiral dopant and nanoparticles on liquid crystal based microlenses <i>Kelum Perera, Ahlam Nemat, Torsten Hegmann, Antal Istvan Jakli</i>

Friday, March 6, 2020 11:15 am – 2:15 pm

**Session X34: Organic Electronics III: Electrochemical Transistors and Doping**

Sponsoring Units: DPOLY

Chair: Dean DeLongchamp, National Institute of Standards and Technology

Room: 506

11:15AM - 11:27AM	34.00001: Charge and Ion Transport in Radical Polymer-based Organic Electrochemical Transistors <i>Bryan Boudouris, Ho Joong Kim</i>
11:27AM - 11:39AM	34.00002: Quantifying the Energetics of Ion Injection into Mixed Ionic/Electronic Conductors <i>Lucas Flagg, Connor Bischak, Ramsess Javier, David S Ginger</i>
11:39AM - 11:51AM	34.00003: Counter-ion exchange as a tool to modulate polaron delocalization and temperature stability of doped polymeric semiconductors <i>Elayne Thomas, Kelly A Peterson, Dakota Rawlings, Rachel A Segalman, Michael L. Chabiny</i>
11:51AM - 12:03PM	34.00004: The role of counter ion structure on the spatial distribution and molecular configuration of charge carriers in solid state electrochemically doped conjugated polymers <i>Dakota Rawlings, Rachel A Segalman, Michael L. Chabiny</i>
12:03PM - 12:15PM	34.00005: Understanding the Working Mechanism of Organic Electrochemical Transistors <i>Vikash Kaphle, Pushpa Paudel, Bjorn Lussem</i>
12:15PM - 12:27PM	34.00006: Bio-Sensors Based on Organic Electrochemical Transistors Pushpa Paudel, Vikash Kaphle, Drona Dahal, Raj Kishen Radha Krishnan and Björn Lüssem <i>Pushpa Paudel, Vikash Kaphle, Drona Dahal, Raj Kishen Radha Krishnan, Bjorn Lussem</i>
12:27PM - 12:39PM	34.00007: A flexible complementary logic circuit built from two identical organic electrochemical transistors <i>Lorenzo Travaglini, Adam P Micolich, Claudio Cazorla, Erica Zeglio, Antonio Lauto, Damia Mawad</i>
12:39PM - 12:51PM	34.00008: Humidity-Dependent Mixed Ionic-Electronic Conduction in Polythiophene-Derived Polyelectrolytes <i>Garrett Grocke, Ban Dong, Shrayesh Patel</i>
12:51PM - 1:03PM	34.00009: Charge Transport, Morphological Properties and Cooling Performance of Functionally Graded Semiconducting Polymer Thin Films as Organic Thermoelectrics <i>Tengzhou Ma, Ban Dong, Joseph Walter Strzalka, Shrayesh Patel</i>
1:03PM - 1:15PM	34.00010: Modulating Spin Concentrations in Self-Doped Organic Molecules <i>Daniel Powell, Luisa Whittaker-Brooks</i>
1:15PM - 1:27PM	34.00011: Bio-sourced Eumelanin Pigments: Charge Transport Properties and Beyond <i>Manuel Reali, Abdelaziz Gouda, Clara Santato</i>

1:27PM - 1:39PM	34.00012: Evaluation of environmental effects on the performance of 2,8-difluoro 5,11-bis(triethylsilylethynyl) anthradithiophene thin-film transistors <i>Zafrullah Jagoo, Zachary Lamport, Oana D. Jurchescu, Laurie McNeil</i>
1:39PM - 1:51PM	34.00013: Bio-sourced, potentially biodegradable materials for fast response moisture sensors <i>Abdelaziz Gouda, Manuel Reali, Clara Santato</i>
1:51PM - 2:03PM	34.00014: Effects of Molecular Weight and Annealing on Charge Carrier Concentration in Thin PANI-CSA Films <i>Arun Kumar Agarwal, Siddhartha Panda</i>
2:03PM - 2:15PM	34.00015: Effects of concentration and local structure on charge trapping in polymer electrets with amine-based substituents. <i>Evan Plunkett, Qingyang Zhang, Chen Chi, Howard Edan Katz, Daniel Reich</i>

Friday, March 6, 2020 11:15 am – 2:15 pm

### Session X35: Kinetics and Aggregation of Polymers in Complex Fluids and Geometries

Sponsoring Units: DPOLY DSOFT

Chair: Jeffrey Ethier, Illinois Institute of Technology

Room: 507

11:15AM - 11:27AM	35.00001: Network Centrality of Heterogeneous Elastomers for Describing Mechanical Property <i>Yoshifumi Amamoto, Ken Kojio, Atsushi Takahara, Yuichi Masubuchi, Takaaki Ohnishi</i>
11:27AM - 11:39AM	35.00002: Understanding aggregation and growth in a cross-linked polymer film <i>Tine Curk, Erik Luijten</i>
11:39AM - 11:51AM	35.00003: Influence of particle softness on the flow properties of colloidal dispersions: A comparison of regularly and ultra-low-crosslinked microgels <i>Carlos Lopez, Andrea Scotti, Monia Brugnoli, Steffen Bochenek, Jerome Crassous, Walter Richtering</i>
11:51AM - 12:03PM	35.00004: Electrostatics and Rheology of Unentangled Semidilute Polyelectrolyte Solutions <i>Guang Chen, Antonio Perazzo, Howard A Stone</i>
12:03PM - 12:15PM	35.00005: Patterned fluorescence photobleaching recovery on multicomponent sodium polystyrene sulfonate solutions to investigate temporal aggregate formation. <i>Paul Balding, Paul Russo, Rachel Borrelli</i>
12:15PM - 12:27PM	35.00006: Simulating Surface-Grafted Polymers in Solvent Mixtures: Effects of Conosolvency <i>Jing Zong, Dong Meng</i>
12:27PM - 12:39PM	35.00007: Humidity- and surfactant-accelerated aging in poly(vinyl alcohol)-based thin films <i>Katarzyna Majerczak, Zhenyu Jason Zhang</i>
12:39PM - 12:51PM	35.00008: Polydispersity Correction to the Order-Disorder Transition of Symmetric Diblock Copolymers Melts <i>James Willis, Mark W Matsen</i>
12:51PM - 1:03PM	35.00009: Thermodynamics of Binding of Charged Dendrimers to Graphene: Simulation and Theory <i>Mounika Gosika, Swati Sen, Arindam Kundagrami, Prabal K Maiti</i>
1:03PM - 1:15PM	35.00010: Complex Viscosity of Helical and Doubly Helical Polymeric Liquids from General Rigid Bead-Rod Theory <i>Jourdain Piette, A. Jeffrey Giacomin, Mona Kanso</i>
1:15PM - 1:27PM	35.00011: The tail free discotic liquid crystal 1,2,3,4,7-pentafluoro triphenylene: a study in structural variations <i>Mitch Powers, Brett Ellman, John Portman, Zhe Li, Kunlun Wang, Parikshit Guragain, Robert J Twieg, Scott Bunge, Lewis L Sharpnack, Dena Mae Agra-Kooijman, Satyendra Kumar</i>
1:27PM - 1:39PM	35.00012: Effects of Boundary Conditions and Alignment Methods on Liquid Crystal Performance in Microwave Devices

*Jason Nobles, Olha Melnyk, Anatoliy Glushchenko, Robert Camley, Zbigniew J Celinski*

1:39PM - 1:51PM

35.00013: Fast Water Transport in Polyelectrolyte Brush Functionalized Nanochannels

*VISHAL SANKAR SIVASANKAR, Sai Ankit Etha, Harnoor Singh Sachar, Siddhartha Das*

1:51PM - 2:03PM

35.00014: Mechanisms of Surfactant Adsorption and Interfacial Tension Lowering for Enhanced Oil Recovery (EOR) Applications

*Jaeyub Chung, Bryan Boudouris, Elias I Franses*



Friday, March 6, 2020 11:15 am – 2:15 pm

**Session X36: Fantastic Polyelectrolytes and How They Behave in Coacervates**

Sponsoring Units: DPOLY

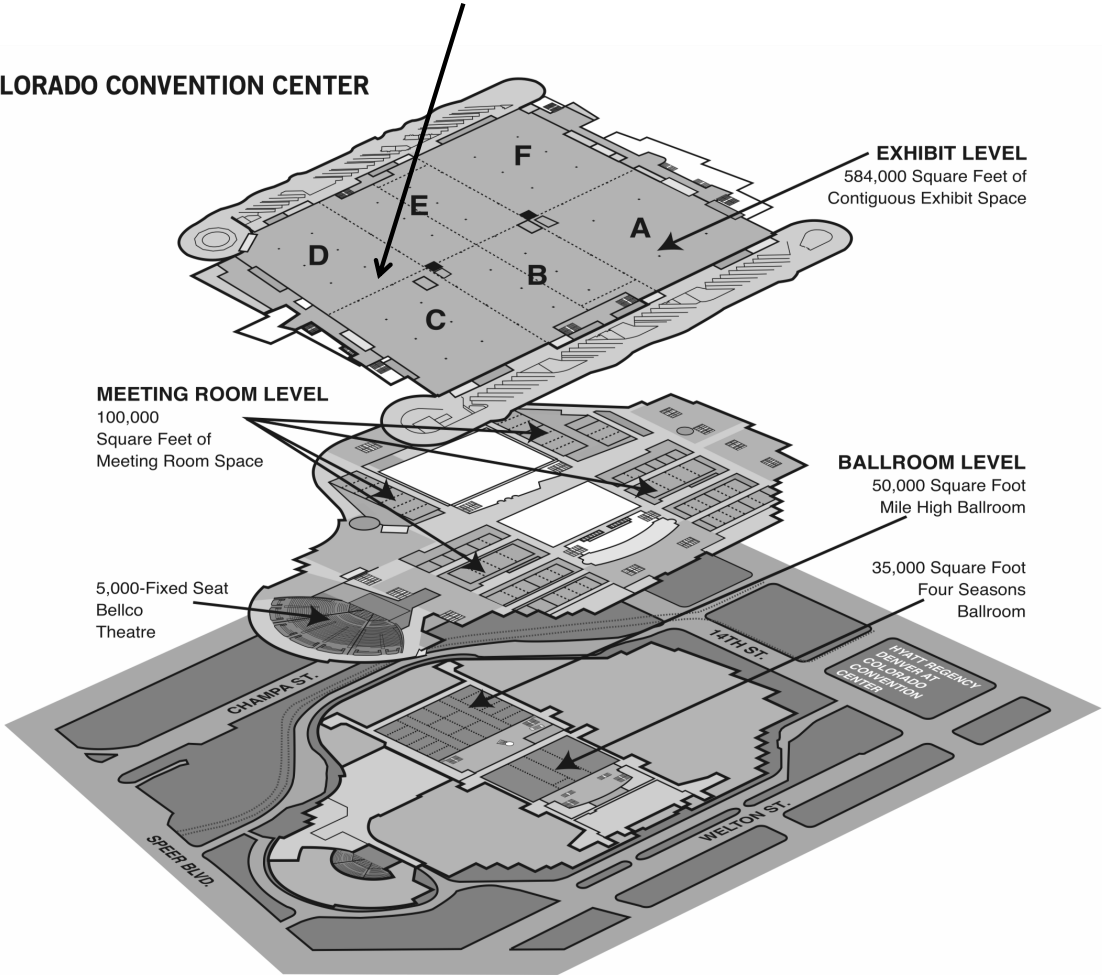
Chair: Michael Rubinstein, University of North Carolina at Chapel Hill

Room: 601/603

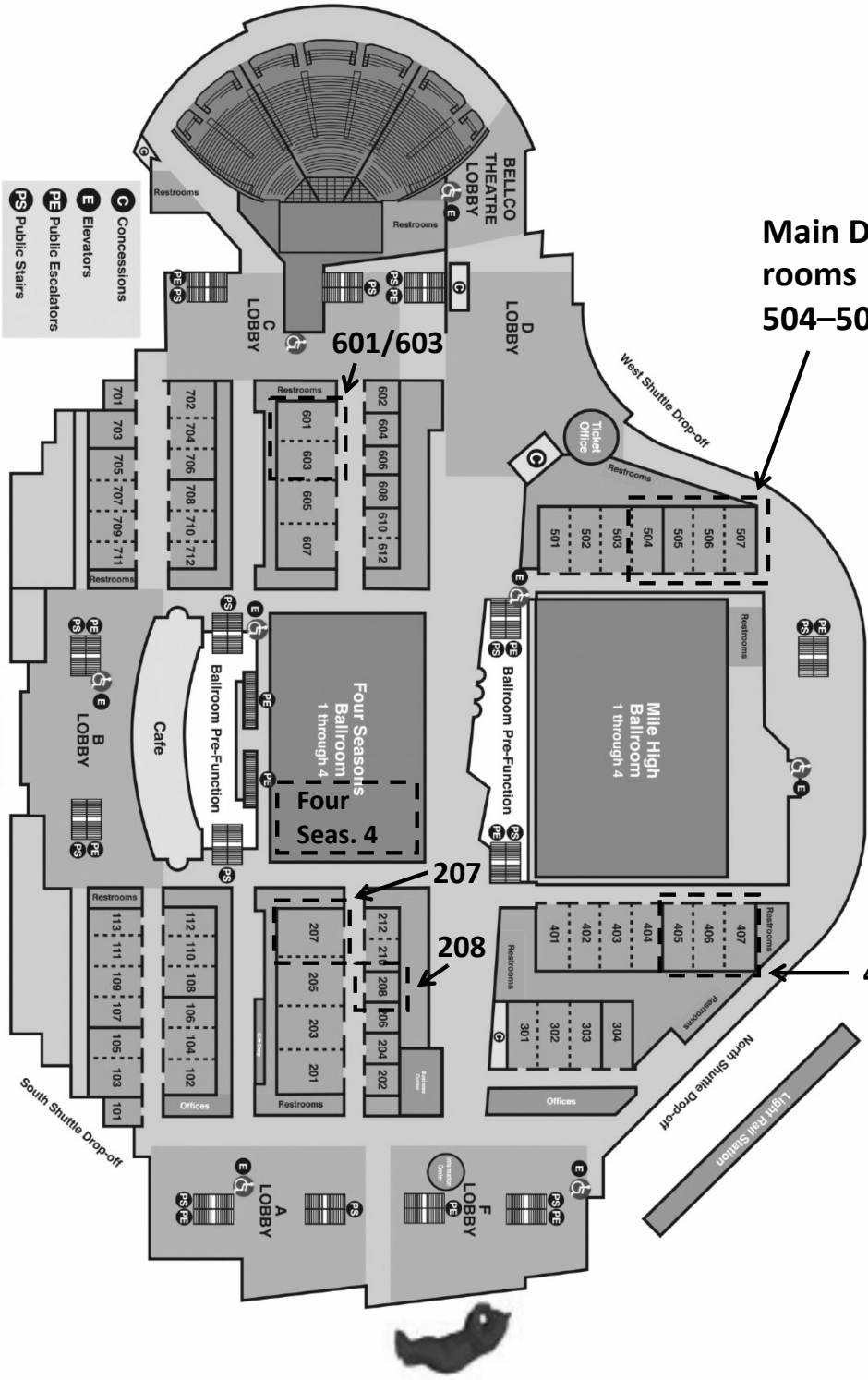
11:15AM - 11:51AM	36.00001: Structure and Dynamics of Polyelectrolyte Solutions and Coacervates <i>Invited Author: Ralph Colby</i>
11:51AM - 12:27PM	36.00002: Phase Behavior and Viscoelasticity of Polyelectrolyte Coacervates at High Salt Concentrations <i>Invited Author: Jennifer Laaser</i>
12:27PM - 1:03PM	36.00003: Fantastic Entanglements between Polyelectrolytes in Solutions <i>Invited Author: Carlos Lopez</i>
1:03PM - 1:39PM	36.00004: Structure and rheology of polyelectrolyte complex coacervates <i>Invited Author: Amanda Marciel</i>
1:39PM - 2:15PM	36.00005: Fantastic Saloplastic <i>Invited Author: Joseph Schlenoff</i>

# DPOLY Posters Exhibit Hall C/D

## COLORADO CONVENTION CENTER



SPEER BOULEVARD (MOUNTAIN VIEW)



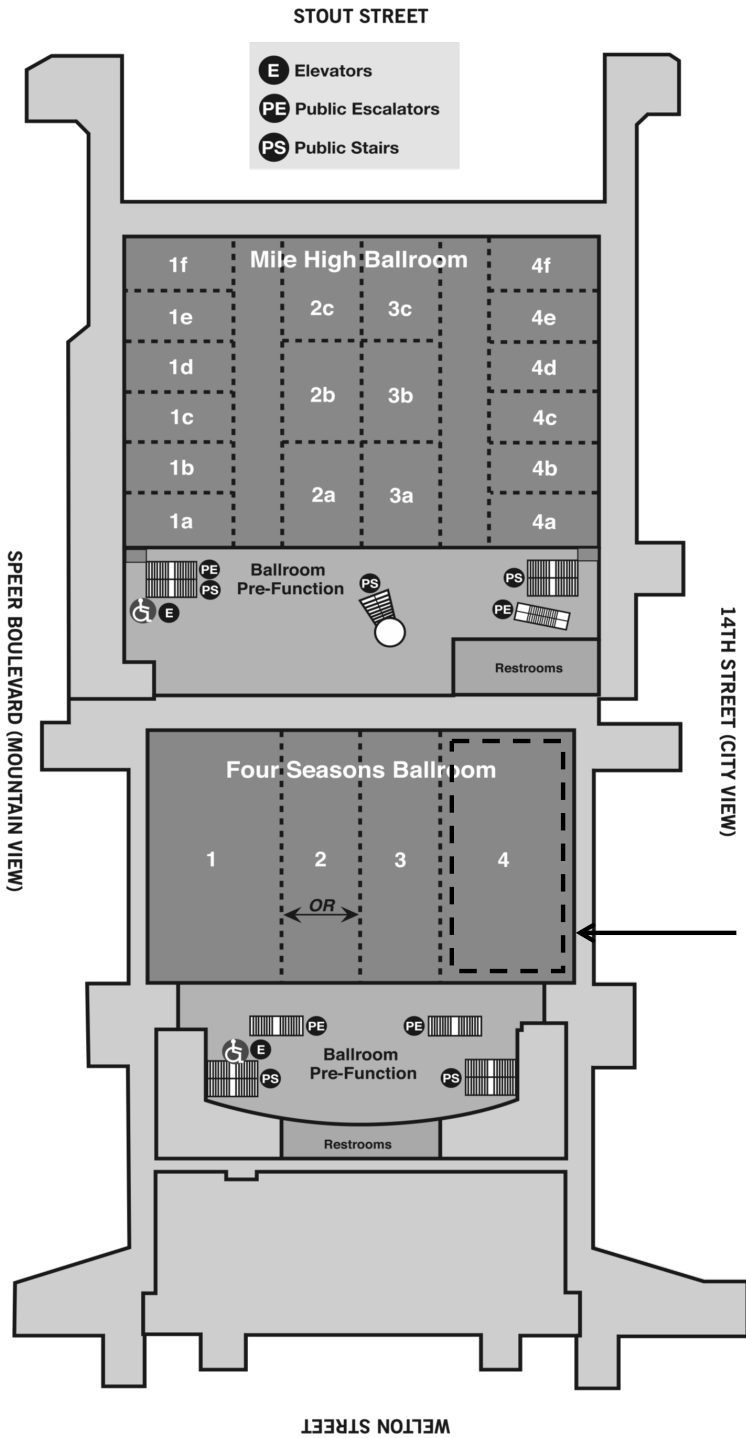
Main DPOLY rooms  
504-507

601/603

405-407

207

208



**BALLROOM LEVEL**

**Four Seasons Ballroom 4**

**Most DPOLY Invited Sessions, including Polymer Physics Prize**

**DPOLY Program Grid**
**Monday, March 2, 2020 8:00 am – 11:00 am**

Session	A32	A33	A34	A35	A68	A70
Room	504	505	506	507	Four Seas. 4	208
Chair	<i>Phelan</i>	<i>Hickey</i>	<i>Hall</i>	<i>Hayakawa</i>	<i>Roth</i>	<i>Stingaciu</i>
8:00	Zheng	<b>Hore</b>	Frischknecht	Ashley	<b>Lodge</b>	Slim
8:12	Lin		Bagchi	Feng		Ethier
8:24	Berman		Shen	Masud		Yavitt
8:36	<b>Kalow</b>	Zhai	Bazargan	Qiang	<b>Balazs</b>	Poling-Skutvik
8:48		Wu	Fan	Seguini		Fischer
9:00		Chrissopoulou	Qin	Jun		Xu
9:12	Rajput	Cheng	Singh Sachar	Lee	<b>Milner</b>	<b>Senses</b>
9:24	Xie	Jhalaria	Matsumoto	Zhang		
9:36	Agarwal	Tannenbaum	Kim	Lei		
9:48	Leighton	Midya	<b>Ganesan</b>	Song	<b>Grest</b>	Carrillo
10:00	Pirzada	Yang		Sayko		Meedin
10:12	Zhou	Alkhodairi		Oh		Holden
10:24	Khare	Fan	Bennington	<b>Koga</b>	<b>Brochard-Wyart</b>	Salatto
10:36	Nikolov	Liesen	Albehajan			Cheng
10:48	Giuntoli	Medidhi	Kim			Soles

Co-Sponsored Sessions:

A05. *Focus* The Chemical Physics of Molecular Polaritons I. Photophysics

A26. *Focus* Mechanics of Cells and Tissues Across Scales I

A40. *Focus* Building the Bridge to Exascale: Applications and Opportunities for Materials, Chemistry, & Biol. I

A45. *Focus* Understanding Glasses and Disordered Systems Through Computational Models I

A58. *Focus* DFT and Beyond I

**DPOLY Program Grid**
**Monday, March 2, 2020 11:15 am – 2:15 pm**

Session	B32	B33	B34	B35	B68	B70
Room	504	505	506	507	Four Seas. 4	208
Chair	<i>Khan</i>	<i>Cheng</i>	<i>Beckingham</i>	<i>Ryu</i>	<i>Whitmer</i>	<i>Koga</i>
11:15	Aoyama	<b>Sokolov</b>	Winey	Ho	<b>Yager</b>	Zolnierczuk
11:27	Vernerey		Zhang	Sunday		Stingaciu
11:39	Tiwari		Jones	Doerk		Guilbert
11:51	<b>Johnson</b>	Mapesa	<b>Elabd</b>	Selkirk	<b>Deshmukh</b>	Hallinan
12:03		Zhou		Singh		Loo
12:15		Zhang		Oh		Steinrueck
12:27	Barney	<b>Brinson</b>	Thurston	Park	<b>Savoie</b>	Kim
12:39	Arora		Zhang	Goodson		Balwani
12:51	Islam		Kong	<b>Russell</b>		Peddireddy
1:03	Mishra	Wu	Kim		Kyrey	
1:15	Barney	Meng	Paren	<b>Yingling</b>	Frielinghaus	
1:27	Zou	Adhikari	Ketkar		Salipante	
1:39	Nemani	Koh	Evans		Jacobberger	
1:51	Jones	Maguire	Kadulkar	Ji	<b>Reyes</b>	<b>Petrash</b>
2:03	Ye	Oh	Kosgallana			

Co-Sponsored Sessions:

B04. *Focus* Coherent Nonlinear Optical Microscopy I

B05. *Focus* The Chemical Physics of Molecular Polaritons II. Photophysics II

B25. *Focus* From Responsive Matter to Actuated Structures

B26. *Focus* Mechanics of Cells and Tissues Across Scales II

B45. *Focus* Understanding glasses and disordered systems through computational models II

B58. *Focus* DFT and Beyond II

**DPOLY Program Grid**
**Monday, March 2, 2020 2:30 pm – 5:30 pm**

Session	D32	D33	D34	D35	D68	D70
Room	504	505	506	507	Four Seas. 4	208
Chair	Bae	Gu	Park	Angelini	Fakhraai	O'Connor
2:30	Korley	Jayaraman	Bennington	Huang	Lee	Rauscher
2:42		Wang	Zhao	Luyben		Dobrynin
2:54		Jeon	Musial	Amaya-Espinosa		Watanabe
3:06	Alziyadi	Winey	Sharon	Tulsi	Kotov	Hoy
3:18	Bae		Ferreira	Zhao		Larson
3:30	Biswas		Mei	Jiang		Simmons
3:42	Carberry	Henry	Watanabe	Russell	Bradley	Nakatani
3:54	Cui	Feng				Becerra
4:06	Nickel	Geitner				Dorgan
4:18	Denton	Jiang	Stevens	Lee	Clarke	Vermant
4:30	Gasser	Kuei	Jacobs	Sinha		
4:42	Zhang	Dulal	Liang	Hilburg		
4:54	Zhao	Chan	Lytle	Guo	Kisailus	Hinton
5:06	Gao	Sepulveda-Medina	Wen			Suresh
5:18	Chakraborty	Buggy	Alger			Hamada

Co-Sponsored Sessions:

- D05. *Focus* Electronic-Vibrational Coupling in Light Harvesting I. Photosynthetic Light Harvesting  
D26. *Focus* Mechanics of cells and tissues across scales III  
D30. *Focus* Self-Limiting Assemblies I: Functional Structures in Biology  
D31. *Focus* Wetting and Adhesion of Soft Materials: Dynamics and Instability I  
D45. *Focus* Understanding glasses and disordered systems through computational models III  
D58. *Focus* DFT and Beyond III

**Monday, March 2, 2020, 5:45 pm – 6:45 pm**

- E34. Open Discussion on Polymer Science and Polymer Scientists in the Age of Global Plastics Pollution

## DPOLY Program Grid

Tuesday, March 3, 2020 8:00 am – 11:00 am

Session	F32	F33	F34	F35	F68
Room	504	505	506	507	Four Seas. 4
Chair	Bae	Wang	Kotula	Dorgan	Kremer
8:00					<b>Binder</b>
8:12					
8:24					
8:36	Blake	<b>DeLongchamp</b>	Sukhishvili	Aldaais	<b>Klein</b>
8:48	Faubel		Levenhagen	Sethuraman	
9:00	Dreyfus		McIlroy	Wang	
9:12	<b>Heilshorn</b>	Freychet	Hassan	Seo	<b>Pincus</b>
9:24		Beaucage	Giovino	Irvin	
9:36		McAfee	Galvani	Kim	
9:48	Brunk	Cordova	<b>Seppala</b>	Lee	<b>Yethiraj</b>
10:00	Dansuk	Zhong		Robertson	
10:12	Kiridena	Mukherjee		Gregorich	
10:24	Yavitt	Murcia	Welch	Coughlin	<b>Schmid</b>
10:36	Taylor	Zhang	Malollari	Kozawa	
10:48	Weiblen	Su	Luo	Mai	

### Co-Sponsored Sessions:

- F05. *Focus* The Chemical Physics of Molecular Polaritons III. Vibrational strong coupling
- F22. *Focus* Biomaterials I: Paleo and Modern Structure and Function in Animals
- F26. *Focus* Mechanics of cells and tissues across scales IV
- F30. *Focus* Self-Limiting Assemblies II: Programmable Assemblies
- F31. Wetting and Adhesion of Soft Materials: Dynamics and Instability II
- F58. *Focus* DFT and Beyond IV



**DPOLY Program Grid**

**Tuesday, March 3, 2020 11:15 am – 2:15 pm**

Session	G19	G32	G33	G34	G35
Room	207	504	505	506	507
Chair	<i>Robbins</i>	<i>Bae</i>	<i>Cheng</i>	<i>Martin</i>	<i>Krishnamoorti</i>
11:15	<b>Alvarez</b>	Gimenez-Pinto	Carlton	<b>de Pablo</b>	Kuenstler
11:27		Luo	Ghai		Hansoge
11:39		Seitzinger	Olson		Bailey
11:51	<b>van Ruymbeke</b>	McCracken	Yoshimoto	Huang	Wang
12:03		Feng	Jackson	Nakamura	Soh
12:15		Ghosh	Chan	Xia	Bay
12:27	<b>Kotula</b>	<b>Li</b>	Ozden	Jadhao	Wheatle
12:39			Theford	Yang	Michenfelder-Schauser
12:51			Composto	Tchoua	Xie
1:03	<b>O'Connor</b>	Rajapaksha	Kulshreshtha	<b>Ushizima</b>	Yao
1:15		Khandagale	Basu		Cazzell
1:27		Wei	Bochkov		Wilcox
1:39	<b>Olmsted</b>	Le Blay	<b>Hall</b>	Clarke	
1:51		Salerno		Hockenberry	
2:03		VanDonselaar		Hiles	

Co-Sponsored Sessions:

G04. *Focus* Coherent Nonlinear Optical Microscopy II

G05. *Focus* Electronic-Vibrational Coupling in Light Harvesting II. Excitons, Polarons, Perovskites, and Non-Adiabatic Dynamics

G30. Self-Limiting Assemblies III: Soft Assemblies and In and Out of Equilibrium

G58. *Focus* DFT and Beyond V

**DPOLY Program Grid****Tuesday, March 3, 2020 2:30 pm – 5:30 pm**

Session	J32	J33	J34	J70
Room	504	505	506-507	208
Chair	Riggleman	Lee	Register	Bae
2:30			<b>Priestley</b>	
2:42				
2:54				
3:06	<b>Tanaka</b>	Reddy	Korley	Friedrich
3:18		Lai	Dalnoki-Veress	Appelhans
3:30		Ahn	Cabral	Liu
3:42	Fukao	Xie	Lodge	<b>Boydston</b>
3:54	Douglas	Liu	Krishnamoorti	
4:06	Han	Jangareddy	Kang	
4:18	Root	Li	Kumar	Uzcategui
4:30	Hou	Yuan	Ellison	Smallwood
4:42	Huang	Chipara	Aryal	Hergert
4:54	Zhang	<b>Thomas</b>	Epps	Alketbi
5:06	Enright		Ediger	Rackson
5:18	Kojo		Torkelson	Farokhirad

Co-Sponsored Sessions:J05. *Focus* The Chemical Physics of Molecular Polaritons IV. Photophysics 3J22. *Focus* Biomaterials II: Paleo and Modern Structure and Function in AnimalsJ45. *Focus* Emerging Trends in Molecular Dynamics Simulations and Machine Learning IJ58. *Focus* DFT and Beyond VI**Tuesday, March 3, 2020, 5:45 pm – 6:45 pm**

K34. DPOLY Business Meeting

**Tuesday, March 3, 2020, 6:45 pm – 7:45 pm**

K59. NSF Q&amp;A Session on Polymers and Soft Matter

**DPOLY Program Grid**

**Wednesday, March 4, 2020 8:00 am – 11:00 am**

Session	L32	L33	L34	L35	L70
Room	504	505	506	507	208
Chair	Zuo	Genix	Rottler	Dutcher	Evans
8:00	Guo	Richards	Tomko	Baylis	Ghosh
8:12		Rishi	Zhou	Atkinson	Ricarte
8:24		Hipp	Smith	Grossutti	Jing
8:36	Lipson	Dhara	Cahill	Roman	Shen
8:48	Bhadauriya	Presto			Soman
9:00	Kwon	Trigg			Kalow
9:12	Ghanekarade	Ehlers	Razavi	Bejagam	Bates
9:24	Schweizer	Xiong	Shandilya	Epstein	
9:36	Yan	Park	Mukherji	Shamana	
9:48	Ivancic	Viktorova	Shuai	Miki	Huang
10:00	Ginzburg	Gong		Charlesworth	Cai
10:12	Xu	Gogia		Dorgan	Porath
10:24	Pallaka	Boué	Xi	Beckham	Cai
10:36	White		Padmanabhan		Krajovic
10:48			Marks		Delgado

Co-Sponsored Sessions:

L04. *Focus* Electronic-Vibrational Coupling in Light Harvesting III.

Singlet Fission, Upconversion, and Energy Transfer

L05. *Focus* The Chemical Physics of Molecular Polaritons V. Plasmonic cavities

L22. *Focus* Biomaterials III: Tissue-Scale Physics

L26. Mechanics of cells and tissues across scales V

L29. Liquid Crystals I: Fields and Interfaces

L30. *Focus* Soft Mechanics via Geometry I

L45. *Focus* Emerging Trends in Molecular Dynamics Simulations and Machine Learning II

L58. *Focus* DFT and Beyond VII

**DPOLY Program Grid**

**Wednesday, March 4, 2020 11:15 am – 2:15 pm**

**M71: Poster Session III** Exhibit Hall C/D

**DPOLY Posters: #2 – #170**

2	Strohmayr	36	Sureka	70	Gong	104	Miyoshi	138	Sayko
3	Mistry	37	Yuan	71	Palleria	105	Zhang	139	Mizzi
4	Husmann	38	Sethuraman	72	Gogia	106	Ahuja	140	Nuguri
5	Smallwood	39	Lee	73	Fowler	107	Groves	141	Liang
6	Limberg	40	Paren	74	Schlafmann	108	White	142	Chen
7	Ahuja	41	Loo	75	Aoyagi	109	Gray	143	Koga
8	Karyappa	42	Wang	76	Lin	110	Streletzky	144	Huang
9	Gudadhe	43	Wheatle	77	Oweida	111	Wang	145	Ha
10	DeNivo	44	Choo	78	Li	112	Lin	146	Garcia
11	Fang	45	Khatri	79	Wolf	113	Lee	147	Abebe
12	Sherck	46	Zheng	80	Hoque	114	Young	148	Zong
13	Alcoutlabi	47	Schwab	81	Basu	115	Xu	149	Kiridena
14	Zhong	48	Min	82	Xie	116	Ju	150	Oweida
15	Langenstein	49	Zhang	83	DiTusa	117	Wei	151	Hee Ku
16	Setaro	50	Shen	84	Ohta	118	Beaucage	152	Luettmr-Strathmann
17	He	51	Ketkar	85	Zhang	119	Schantz	153	Cutright
18	Zhang	52	Kadulkar	86	Sutjianto	120	Srivastava	154	Weiblen
19	Lenart	53	Clark	87	Moncada	121	Ehlers	155	Zhang
20	Horn	54	Park	88	Galuska	122	Yadav	156	Niebuur
21	Yao	55	Li	89	Ikeyama	123	Jacobs	157	Lee
22	Tang	56	Hu	90	Lee	124	McCoy	158	Razavi
23	Arora	57	Tamayo	91	Guilbert	125	Comeau	159	DeStefano
24	Shi	58	Matsumoto	92	Samanta	126	Park	160	Bay
25	Wang	59	Feng	93	Lopez	127	Mai	161	Taylor
26	Jo	60	Young	94	Aliakseyeu	128	Zou	162	Jiang
27	Hu	61	Park	95	Marras	129	McBride	163	Papananou
28	Zhang	62	Xia	96	Bilchak	130	Jiang	164	Hawkins
29	Yu	63	Fujimoto	97	Maguire	131	Becerra	165	Ko
30	Seo	64	Popov	98	Chipara	132	Bannerjee	166	Genzer
31	Gon Son	65	Douglas	99	Lin	133	Aoyama	167	Kirevliyasi
32	Cummins	66	Reyes	100	Migler	134	Badani Prado	168	Suarez
33	Shin	67	Li	101	Lin	135	Pilvelait	169	Hansoge
34	Bochkov	68	Fernando	102	Dolynchuk	136	Fuleihan	170	Le
35	Mullen	69	Mulderig	103	Wang	137	Kumar		

Co-Sponsored Sessions:

M22. *Focus* Biomaterials IV: Nano and Bioinspired materials

M29. Liquid Crystals II: Phases and Transitions

M30. *Focus* Soft Mechanics via Geometry II

M32. *Focus* Physics of Complex Liquid Interfaces

M45. *Focus* Emerging Trends in Molecular Dynamics Simulations and Machine Learning III

DSOFT Posters: #171 – #242

GSNP Posters: #243 – #279

DFD Posters: #280 – #297

DBIO Posters: #298 – #369

DCP Posters: #370 – #413

**DPOLY Program Grid**
**Wednesday, March 4, 2020 2:30 pm – 5:30 pm**

Session	P32	P33	P34	P35
Room	504	505	506	507
Chair	<i>Ediger</i>	<i>Beaucage</i>	<i>Tree</i>	<i>Srivastava</i>
2:30	<b>Gonzalez-Silveira</b>	Oberdisse	Yu	Ghasemi
2:42		McGlasson	Bilchak	Friedowitz
2:54		Shui	Wang	Schlenoff
3:06	Govind	Baeza	Gabinet	<b>Tirrell</b>
3:18	McKenzie	Kim	Wang	
3:30	Wei	Beaucage	Mallard	
3:42	Cheng	<b>Takenaka</b>	Early	Ali
3:54	Clark		Lee	Ma
4:06	Medvedev		Jayaraman	Chen
4:18	Olmsted	Sachdeva	<b>Mahanthappa</b>	Chalise
4:30	Dikshit	Hollenbeck		Aponte-Rivera
4:42	Fragiadakis	Jang		Meng
4:54	Odagaki	Ahuja	Qiang	Mitra
5:06	Kaur	Krishnamurthy	Qiang	Heo
5:18	Caruthers	Pang	Li	Kim

Co-Sponsored Sessions:

 P29. *Focus* Active Matter and Liquid Crystals in Biological Systems I

P30. Soft Mechanics via Geometry III

 P45. *Focus* Emerging Trends in Molecular Dynamics Simulations and Machine Learning IV

APS-wide Kavli Session

 P00. **Invited** Kavli Foundation Special Symposium:

Frontiers of Computation: Machine Learning and Quantum Computing

**DPOLY Program Grid**

Thursday, March 5, 2020 8:00 am – 11:00 am

Session	R28	R32	R33	R34	R35
Room	405-407	504	505	506	507
Chair	<i>Ginzburg</i>	<i>Liu</i>	<i>Grason</i>	<i>Hore</i>	<i>Ma</i>
8:00	<b>Kornfield</b>	Bauchy	<b>Srinivasarao</b>	Hickey	<b>Balsara</b>
8:12		Yin		Weisbord	
8:24		Kasting		Shomrat	
8:36	<b>Costeux</b>	<b>Berthier</b>	Ansell	Mueller	Wang
8:48			Eun	Tree	Grzetic
9:00			Matsumoto	Ulric Garcia	Liu
9:12	<b>Koonce</b>	Moore	Biswas	<b>O'Reilly</b>	Kumar
9:24		Raegan	Palacio-Betancur		Shock
9:36		Shakerpoor	Yang		Singh
9:48	<b>Thompson</b>	Wang	<b>Sharma</b>	Hao	Chen
10:00		Jin		Beardsley	Zhu
10:12		Bagchi		Garcia	Zhang
10:24	<b>Zenit</b>	Thelen	Buchanan	Mantha	<b>Floudas</b>
10:36		Koyama	Nicholson	Vigil	
10:48		Koperwas	Yu	Cheong	

Co-Sponsored Sessions:

 R24. *Focus* Physics of Protein Structure, Folding and Design

 R26. *Focus* Physics of Genome Organization: From DNA to Chromatin: I

 R29. *Focus* Active Matter and Liquid Crystals in Biological Systems II

 R30. *Focus* Visualizing Forces in Soft Materials via Photoelastic and Other Optical Techniques

 R58. *Focus* DFT and Beyond VIII

**DPOLY Program Grid**

Thursday, March 5, 2020 11:15 am – 2:15 pm

Session	S32	S33	S34	S35	S68
Room	504	505	506	507	Four Seas. 4
Chair	<i>Lipson</i>	<i>Patankar</i>	<i>Lee</i>	<i>Srivastava</i>	<i>Grest</i>
11:15	Galuska	<b>Wang</b>	<b>Jenekhe</b>	Kim	<b>Bhatia</b>
11:27	Zuo			Samanta	
11:39	Bukowski			Jia	
11:51	<b>Gu</b>	Chao	Alperen Ayhan	Holkar	<b>Sprakel</b>
12:03		Ylitalo	Barron	Agrawal	
12:15		Alam	Bhattacharya	Kapelner	
12:27	Yuan	<b>Durian</b>	Fiori	Vieregg	<b>Cheng</b>
12:39	Emamy		Ribeiro	Chiang Ong	
12:51	Randazzo		Bangsund	Rumyantsev	
1:03	Roth	Chieco	<b>Kim</b>	<b>Lindhoud</b>	<b>Routh</b>
1:15	Wei	Reyes-Martinez			
1:27	Lin	Wong			
1:39	Zhang	Aou	Hu	Lee	<b>Howard</b>
1:51	Mohottalalage	Deng	Park	Yu	
2:03	Pester	Klatt	Xu		

Co-Sponsored Sessions:

 S23. *Focus* Macromolecular Phase Separation in Biology I

 S26. *Focus* Physics of Genome Organization: From DNA to Chromatin: II

 S29. *Focus* Active Matter and Liquid Crystals in Biological Systems III

**DPOLY Program Grid**
**Thursday, March 5, 2020 2:30 pm – 5:30 pm**

Session	U32	U33	U34	U35
Room	504	505	506	507
<i>Chair</i>	<i>Katsumata</i>	<i>Jackson</i>	<i>Lee</i>	<i>Sharma</i>
2:30	Nguyen	Farias	Engmann	<b>Dutcher</b>
2:42	Dechnarong	Anastasiadis	Markina	
2:54	Takahara	Lin	Concannon	
3:06	Lin	<b>Dunn</b>	<b>Sharifzadeh</b>	Bobbilli
3:18	Endoh			Vogt
3:30	Aliakseyeu			Vlassopoulos
3:42	<b>Foster</b>	Wang	Deutsch	Duraivel
3:54		Serfass	Singha	Fenton
4:06		Mastropietro	Shi	Gagnon
4:18	Dutta	<b>Sarkar</b>	Wang	Inoue
4:30	Akbari		Jiang	Sefiddashti
4:42	Sarapas		Cistemas	Tabedzki
4:54	<b>Akgun</b>	Cuccia	<b>Riede</b>	Klotz
5:06		Espinosa-Marzal		Ma
5:18		Glover		Shin

Co-Sponsored Sessions:

 U23. *Focus* Macromolecular Phase Separation in Biology II

U29. Electrostatic Manipulation of Fluids and Soft Matter I: Electrohydrodynamics



**DPOLY Program Grid**

Friday, March 6, 2020 8:00 am – 11:00 am

Session	W32	W33	W34	W35	W68
Room	504	505	506	507	Four Seas. 4
Chair	<i>Katsumata</i>	<i>Li</i>	<i>Goldman</i>	<i>Dinic</i>	<i>DeLongchamp</i>
8:00	<b>Terao</b>	Liu	Kroonblawd	Holten-Andersen	<b>Rivnay</b>
8:12		Krauskopf	Gibson	Mussel	
8:24		Hyuk Cho	Kowalik	Rose	
8:36	Liang	<b>Rutledge</b>	Lang	Rao	<b>Ratcliff</b>
8:48	Chang		Hawreliak	Mahmad Rasid	
9:00	Nian		Huber	Li	
9:12	Paturej	Miyoshi	<b>Maiti</b>	Chremos	<b>Stavrinidou</b>
9:24	Wessels	Van Horn		Yang	
9:36	Senanayake	Li		Batys	
9:48	Lequieu	Zhelyaskova	Yeo	<b>Lutkenhaus</b>	<b>Frisbie</b>
10:00	Kim	Kawak	Dattelbaum		
10:12	Hayakawa	Fernandez-Ballester	Évans		
10:24	Wylie	Hu	<b>Böker</b>	Margossian	<b>Owens</b>
10:36	Shan	Jimenez		Meng	
10:48	Ziolek	Yang		Danielsen	

Co-Sponsored Sessions:

 W23. *Focus* Macromolecular Phase Separation in Biology III

 W29. *Focus* Electrostatic Manipulation of Fluids and Soft Matter II: Self-Assembly

**DPOLY Program Grid**

**Friday, March 6, 2020 11:15 am – 2:15 pm**

Session	X32	X33	X34	X35	X36
Room	504	505	506	507	601/603
<i>Chair</i>	<i>Wang</i>	<i>Miyoshi</i>	<i>DeLongChamp</i>	<i>Ethier</i>	<i>Rubinstein</i>
11:15	O'Bryan	Klein	Boudouris	Amamoto	<b>Colby</b>
11:27	Easley	Smith	Flagg	Curk	
11:39	Kim	Jin	Thomas	Lopez	
11:51	Hoagland	Li	Rawlings	Chen	<b>Laaser</b>
12:03	Hong		Kaphle	Balding	
12:15	Khewle		Paudel	Zong	
12:27	Leis Paiva	Schick	Travaglini	Majerczak	<b>Lopez</b>
12:39	Meng	Yang	Grocke	Willis	
12:51	Narsimhan	Staub	Ma	Gosika	
1:03	Hitimana	Dolynchuk	Powell	Piette	<b>Marciel</b>
1:15	Patel	Zhang	Realı	Powers	
1:27	Lee	Fair	Jagoo	Nobles	
1:39	Tu	Nguyen	Gouda	Sivasankar	<b>Schlenoff</b>
1:51	Zhang	Waters	Agarwal	Chung	
2:03	Zhang	Perera	Plunkett		





## DPOLY SPECIAL EVENTS

### **DPOLY Reception**

Sunday, March 1, 2020 6:00 pm – 9:00 pm

Live@Jack's

500 16th St #320, Denver, CO 80202

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### **DPOLY Award Lectures**

#### **Polymer Physics Prize**

Kurt Binder

“Statistical Mechanics and Phase Transitions of Semiflexible Polymers”

Tuesday, March 3, 2020 8:00 am – 8:36 am (Session F68, Ballroom Four Seas. 4)

#### **John H. Dillon Medal**

Rodney Priestley

“Structured Polymer Colloids by Flash NanoPrecipitation”

Tuesday, March 3, 2020 2:30 pm – 3:06 pm (Session J34, Room 506-507)

#### **Frank J. Padden Award Finalists**

Tuesday, March 3, 2020 11:15 am – 1:40 pm (Session G35, Room 507)

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#### **Open Discussion on**

**Polymer Science and Polymer Scientists in the Age of Global Plastics Pollution**

Monday, March 2, 2020 5:45 pm – 6:45 pm (Session E34, Room 506)

#### **DPOLY Business Meeting**

Tuesday, March 3, 2020 5:45 pm – 6:45 pm (Session K34A, Room 506-507)

#### **NSF Question and Answer Session on Polymers and Soft Matter**

Tuesday, March 3, 2020 6:45 pm – 7:45 pm (Session K34B, Room 506)

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#### **DPOLY Poster Session**

Wednesday, March 4, 2020 11:15 am – 2:15 pm (Exhibit Hall C/D)

DPOLY poster awards sponsored by the *Journal of Polymer Science*