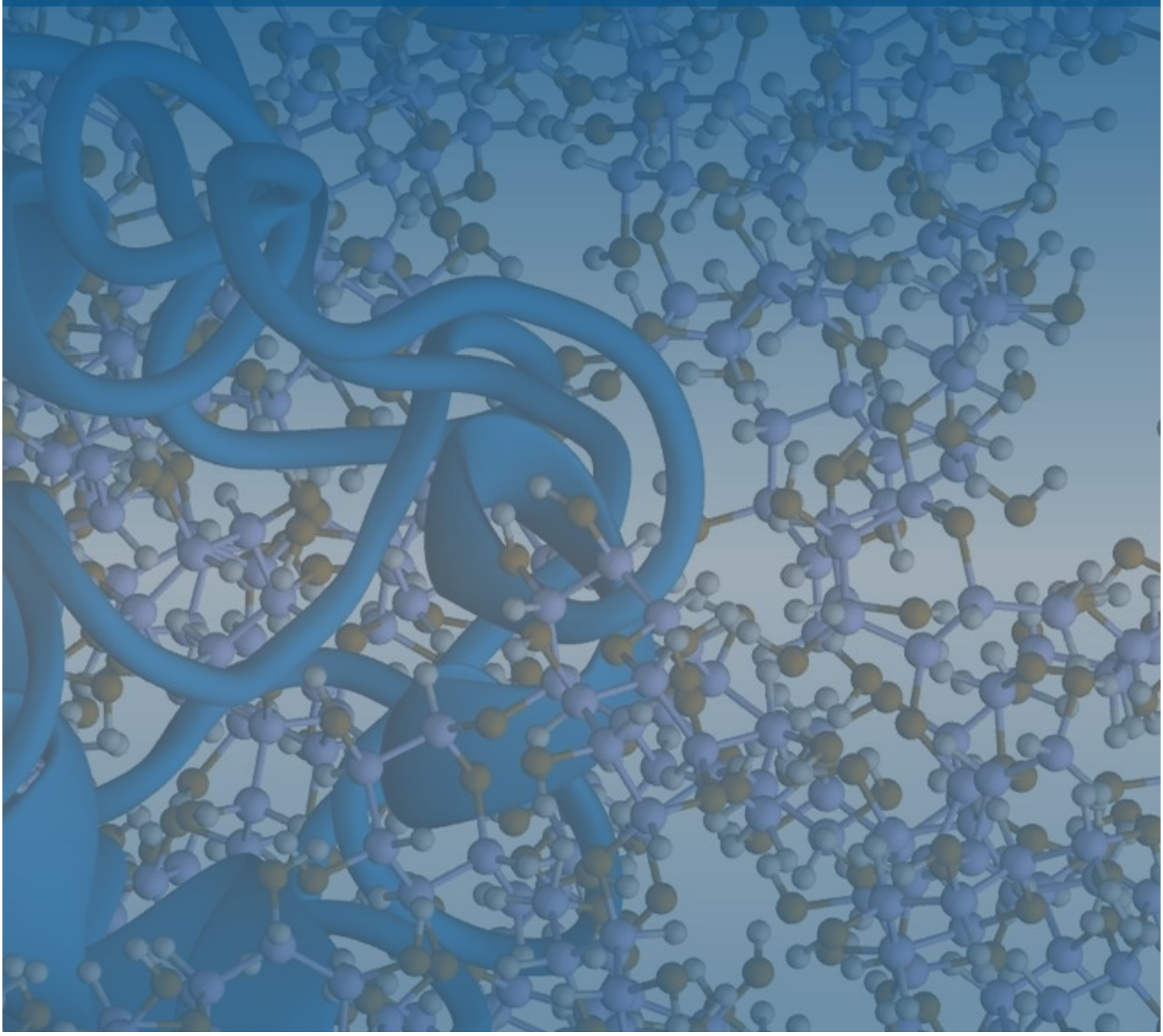
APS Division of Polymer Physics

DPOLY

2024 MARCH MEETING PROGRAM

March 4 — 8 • Minneapolis, MN



Dear DPOLY Members,

On behalf of the DPOLY Programming Committee and the entire leadership team of DPOLY, welcome to beautiful Minneapolis, Minnesota, and the APS March Meeting 2024! We are excited for a wonderful week of stimulating discussions, cutting-edge oral and poster presentations, and celebrations of outstanding polymer scientists through multiple awards. As always, we are thrilled to be joining you for intellectually engaging, inclusive, and thoughtful discussions during this busy week. We are very thankful to those of you who submitted abstracts, sorted abstracts, organized sessions, and who volunteered to chair sessions during the meeting. An event this large does not come together without the tireless support of the community, and DPOLY thanks you for your outstanding efforts.

Thanks to the excellent leadership of Dr. Emily Davidson, Dr. Leanne Friedrich, Dr. Moon Park, Dr. Jonathan Seppala, and Dr. Peter Olmsted, the DPOLY Short Course on the Polymer Physics of Additive Manufacturing will be held on Saturday afternoon and all day Sunday. Thought leaders from national laboratories, academia, and industry will connect the physics of polymeric materials with non-equilibrium processes and the end-use properties of fabricated parts in these sesssions. The DPOLY interactions will continue with the DPOLY Reception on Sunday evening. This will be held at Gluek's Bar & Restaurant from 5p – 7p CT. We welcome all DPOLY members to join us for this traditional event that is always a great conclusion to the workshop and a wonderful event prior to the start of the oral and poster presentation programming.

With 62 DPOLY-related sessions spread across the entire week, including top-notch Invited Sessions on Thursday and Friday, there is something for every field of study at this meeting. Included in these sessions are invited sessions that cover topics that range from Self-driving Laboratories through Polymer Membranes. Monday will feature an invited talk from Dr. Devesh Mistry (University of Leeds), who is the UKPPG representative to DPOLY for the UKPPG/DPOLY Polymer Lecture Exchange, on Monday morning in the Liquid Crystalline and Semicrystalline Polymers Session (A33). In addition, a special session focused on Enabling Early Career Polymer Physics Researchers will feature talks from leading voices in the field that describe how their paths were supported by programs and guidance from federal agencies. Moreover, there will be a co-sponsored DSOFT/DBIO/DPOLY/GSNP Early Career Meet & Greet on Tuesday at 2p CT in Room 200 F. Of course, we have the traditional sessions that honor prize winners on Tuesday. On Tuesday, DPOLY programming will feature the Polymer Physics Prize session honoring Professor Zhen-Gang Wang, and this session will also be lived streamed to our virtual attendees. On Tuesday afternoon, the John H. Dillon Medal Symposium will highlight the work of this year's honoree, Professor Charles Sing. Intermediate to these two sessions, rising stars in the field of polymer physics will share their work in the Frank J. Padden Jr. Award Symposium. This busy Tuesday will conclude with the DPOLY Business Meeting at 6:15p CT, which will immediately be followed by a special session from Dr. Andrew Lovinger of the National Science Foundation (NSF) in the same room.

Again, welcome to the APS March Meeting 2024. We look forward to making these sessions ones to remember for many years. Thank you for your continued contributions to and support of DPOLY.

Sincerely,

Bryan W. Boudouris, DPOLY Programming Chair for the APS March Meeting 2024
Charles D. Davidson School of Chemical Engineering, Purdue University

Cover image. Simulation of proteins and cellulose fibers for a study on the formation of bioplastics. Courtesy of Ziyue (Travis) Dong & Kayla G. Sprenger (University of Colorado Boulder) and Eleftheria Roumeli (University of Washington).

DPOLY SHORT COURSE

2024 DPOLY SHORT COURSE – Polymer Physics of Additive Manufacturing,
https://engage.aps.org/dpoly/meetings/annual-short-course

Day and Time: Saturday, March 2, 12:30 pm – 5:15 pm CT, Sunday, March 3, 8 am – 5 pm CT
Minneapolis Convention Center, Room 102C

Overview: The 2024 APS DPOLY Short Course on the Polymer Physics of Additive Manufacturing (AM) aims to serve as a polymer/soft matter physics-oriented introduction to core and emerging additive manufacturing techniques and industries. The course will connect the physics of polymeric materials and non-equilibrium processing to the properties of manufactured parts. Talks will cover experimental, computational, and theoretical approaches to the AM of polymers. Specific AM techniques will include thermoplastic extrusion, photopolymerization (including both layer-by-layer and volumetric approaches), direct ink writing, powder bed fusion, and bioprinting. Speakers will be drawn from academia, national laboratories, and industry.

Who should attend: Students, postdocs, faculty, government researchers, and industry professionals interested in the physics and principles underlying core and emerging additive manufacturing techniques.

Course organizers: This event is organized by Jonathan Seppala (NIST), Peter Olmsted (Georgetown University), Emily Davidson (Princeton University), and Leanne Friedrich (NIST)

We thank our generous sponsors: Princeton Materials Institute, Center for Sustainable Macromolecular Materials and Manufacturing at Arizona State University, Institute for Soft Matter Synthesis and Metrology at Georgetown University, National Science Foundation, Lawrence Livermore National Laboratory, Material Measurement Laboratory at National Institute of Standards and Technology

Schedule

Saturday, March 2, 2024		Sunday, March 3, 2024:	
12:30 PM	Welcome to the Short Course	8:00 AM	Breakfast
		Module 3:	Direct Write Printing
Module 1: Stereolithography (SLA) and Digital Light Processing (DLP)		9:00 AM	Randy Ewoldt (UIUC)
12:45 PM	Callie Higgins (NIST)	9:45 AM	Renee Zhao (Stanford)
1:30 PM	Tim Long (ASU)	10:30 AM	Break
2:15 PM Break			
		Industry II:	
Module 2: Volumetric 3D Printing		10:45 AM	Thorson Bastien (Carbon)
2:30 PM	Johanna Schwartz (LLNL)	11:30 AM	Wei Zhu (Cellink)
3:15 PM	Hayden Taylor (UC Berkeley)	12:15 PM	Lunch
4:00 PM	Break		
		Module 4: Bioprinting/Embedded Direct Write Printing	
Industry I: 3M		1:30 PM	Sarah Heilshorn (Stanford)
4:15 PM	Industry Panel - 3M	2:15 PM	Thomas Angelini (University of Florida)
5:15 PM	End of Day One	3:00 PM	Break
		Module 5: Thermoplastic Extrusion	
		3:15 PM	Jonathan Seppala (NIST)
		4:00 PM	Claire McIlroy (University of Lincoln)
		4:45 PM	Closing Comments
		5:00 PM	End of Day Two

DPOLY Special Events

Squishy Science Sunday (Public outreach event co-sponsored by DSOFT, DPOLY, DBIO, GSNP and FOEP)
Sunday, March 3, 11:00 am – 3:00 pm
Ballroom AB

DPOLY Reception
Sunday, March 3, 5:00 pm – 7:00 pm
Gluek's Bar & Restaurant
16 N 6th St., Minneapolis, MN 55403

DPOLY Award Lectures

Polymer Physics Prize
Zhen-Gang Wang
"Origin of the Entropic Driving Force in Polyelectrolyte Complex Coacervation"
Tuesday, March 7, 8:00 am – 8:36 am (Session F43)
Auditorium 1

Frank J. Padden Award Finalists
Tuesday, March 5, 11:30 am – 1:42 pm (Session G26)
101G

John H. Dillon Medal
Charles Sing
"Developing Straightforward Models to Address Complex (Coacervate) Problems in Sequence-Defined Polyelectrolytes"
Tuesday, March 5, 3:00 pm – 3:36 pm (Session K26)
101G

DSOFT/DBIO/DPOLY/GSNP Early Career Meet & Greet
Tuesday, March 5, 2:00 p.m. – 3:00 p.m. (Session 3D)
200F

DPOLY Business Meeting
Tuesday, March 5, 6:15 pm – 7:15 pm
101DE

NSF Polymers Q&A
Tuesday, March 5, 7:15 pm – 8:15 pm (immediately following the Business Meeting)
101DE

DPOLY Early Career Social Event
Tuesday, March 5, 8:00 pm – 12:00 am
Brit's Pub (Lower Long Room) - 1110 Nicolett Mall, Minneapolis, MN 55403

DSOFT/DPOLY/DBIO Industry Panel
Wednesday, March 6 2:30-3:30 (Session 4C)
200F

Monday, March 4, 2024 8:00 am – 11:00 am

Session A25: Additive Manufacturing of Soft Materials

Sponsoring Units: DPOLY DSOFT
Chair: Leanne Friedrich, National Institute of Standards and Tech; Benjamin Yavitt, University of Cincinnati
Room: 101F

8:00AM - 8:36AM	A25.00001: Advances in the spatial and temporal characterization of structure development during extrusion 3D printing *Invited Author: Benjamin Yavitt*
8:36AM - 8:48AM	A25.00002: Digital Assembly of Spherical Viscoelastic Bio-ink Droplets (DASP): A conceptually new bioprinting technology *Jinchang Zhu, Liheng Cai*
8:48AM - 9:00AM	A25.00003: Development of a cell-degradable photopolymerizable resin for additive manufacturing *Reinaldo L Dos Santos, John R Martin*
9:00AM - 9:12AM	A25.00004: 3D Printable Modular Soft Elastomers from Physically Crosslinked Homogeneous Associative Polymers *Myoeum Kim, Shifeng Nian, Daniel A Rau, Baiqiang Huang, Jinchang Zhu, Guillaume Freychet, Mikhail Zhernenkov, Li-Heng Cai*
9:12AM - 9:24AM	A25.00005: Effects of Polymerization and Microstructure on the Printing and Annealing of Acrylonitrile-Butadiene-Styrene (ABS) for Material Extrusion Additive Manufacturing *Jay H Park, Juhyeong Lee*
9:24AM - 9:36AM	A25.00006: Enhancing Fused Filament Fabrication Capabilities with Co-extruded Thermoplastic Filaments *Jay H Park, Ethan Hasz*
9:36AM - 9:48AM	A25.00007: Controlling inter-filament fusion in embedded 3D printing *Leanne Friedrich, Jeremiah Woodcock*
9:48AM - 10:00AM	A25.00008: Fabrication and characterization of laser patterned electrochromic layer by layer thin film devices *Kaelyn Leake, Tristan Eberbach, Hank Yochum*
10:00AM - 10:12AM	A25.00009: Conformal Direct Ink Write Additive Manufacturing through Robotics *Robert Lahaie, Anesia D Auguste, James Hardin*
10:12AM - 10:24AM	A25.00010: Control of Crystallinity in 3D printed PEEK: Post-deposition Solvent and Thermal Annealing *Mark D Dadmun, Austin W Riggins, Bhanuka Ekanyake, Bingqian Zheng, Hilmar Koerner*
10:24AM - 10:36AM	A25.00011: Tailoring Semicrystalline Polymer Blends for Extrusion-based Additive Manufacturing *Arit Das, Michelle E Pomatto, Robert B Moore, Michael J Bortner*
10:36AM - 10:48AM	A25.00012: Characterization methods to inform reactive molecular dynamics simulations of the BMI resin curing process *Britannia Vondrasek, Trevor Wavrunek, Cecil Evers, Zhiyong Liang, Michael Czabaj, Gregory Odegard*

Monday, March 4, 2024 8:00 am – 11:00 am

Session A26: Applied Machine Learning for Design and Discovery of Polymers

Sponsoring Units: DPOLY

Chair: Yasemin Basdogan, University of Rochester

Room: 101G

8:00AM - 8:36AM	A26.00001: Data-driven Strategies to Navigate Sequence, Composition, and Architectural Complexity in Polymer Physics *Invited Author: Michael A Webb*
8:36AM - 8:48AM	A26.00002: Abstract Withdrawn
8:48AM - 9:00AM	A26.00003: Phase Diagram Predictions of Various Polymer Macromolecules in Solution Using Transfer Learning *Jeffrey G Ethier, Devin C Ryan, Richard A Vaia*
9:00AM - 9:12AM	A26.00004: Machine-learned closure for polymer liquid state theory *Thomas E Gartner*
9:12AM - 9:24AM	A26.00005: Interpretable Machine Learning of Phase Separated Microstructures in Polyurethane Block Copolymers *Dominic M Robe, Adrian Menzel, Andrew Phillips, Peter Daivis, Sarah Erfani, Ellie Hajizadeh*
9:24AM - 10:00AM	A26.00006: Machine Learning-accelerated Molecular Design of Innovative Polymers: Advanced manufacturing, extreme conditions, and sustainable energy solutions *Invited Author: Ying Li*
10:00AM - 10:12AM	A26.00007: Predicting aggregate morphology for varying composition and sequences in sequence-defined macromolecules *Debjyoti Bhattacharya, Wesley F Reinhart*
10:12AM - 10:24AM	A26.00008: Accelerating Copolymer Design via Machine Learning *Tarak K Patra*
10:24AM - 10:36AM	A26.0009: Predicting the Glass Transition of Complex Polymers via Integration of Machine Learning, Molecular Modeling and Experiments *Wenjie Xia*

Monday, March 4, 2024 8:00 am – 11:00 am

Session A29: DNA-based Soft Matter I

Sponsoring Units: DSOFT DBIO DPOLY
Chair: Rae Robertson-Anderson, University San Diego
Room: 101J

8:00AM - 8:36AM	A29.00001: Effect of localized active fluctuations in conformation and dynamics of chromosomal DNA *Invited Author: Andrew Spakowitz*
8:36AM - 8:48AM	A29.00002: Microtubule self-assembly is controlled by the topological activity of ring and linear DNA in microtubule-DNA composites *Karthik Reddy Peddireddy, Mehdi Shafiei Aporvari, Juexin Marfai, Rae M Robertson-Anderson*
8:48AM - 9:00AM	A29.00003: Effective interactions between double-stranded DNA molecules in aqueous electrolyte solutions: effects of molecular architecture and counterion valency *Terpsichori Alexiou, Christos Likos*
9:00AM - 9:12AM	A29.00004: The underappreciated role of nonspecific attractions in crystallization of DNA-coated colloids *Hunter Seyforth, Manodeep Mondal, Thomas E Videbaek, William B Rogers*
9:12AM - 9:24AM	A29.00005: SAT-assembly: A method for model-driven inverse design of self-assembling 3D lattices, capsids, and polycubes *Petr Sulc*
9:24AM - 9:36AM	A29.00006: Sliding tubules: adding additional degrees of freedom to anneal self-assembled DNA origami structures *Thomas E Videbaek, Daichi Hayakawa, William B Rogers*
9:36AM - 9:48AM	A29.00007: Scaling down bioreactor processes to create unimolecular supercoiled, cyclic, and linear DNA for study of topology effects in soft materials. *Nathan Oldenhuis*
9:48AM - 10:00AM	A29.00008: Deformation of Kinetoplast DNA in Microfluidic Racetracks *Alexander R Klotz, Nicholas Cuomo*
10:00AM - 10:12AM	A29.00009: Single-molecule dynamics of tethered DNA in shear flow: the effect of viscosity *Andreas Hanke, Fatema T Zohra, Huda Al-Zuhairi, Daniel D Leon, Hyeongjun Kim*
10:12AM - 10:24AM	A29.00010: Characterizing the nucleation and crystal growth of DNA origami nanoparticles *Myeonggon Park, Shenkai Li, Hunter Seyforth, William B Rogers*
10:24AM - 10:36AM	A29.00011: Force-induced structural transitions in DNA nanostructures *Arjav Shah, Beatrice W Soh, Patrick S Doyle*
10:36AM - 10:48AM	A29.00012: DNA-Functionalized Nanoparticles in Mixed Electrolytes: Salting In, Out, and Beyond *Roger J Reinertsen, Sumit Kewalramani, Monica Olvera De La Cruz, Michael J Bedzyk*

Monday, March 4, 2024 8:00 am – 11:00 am

Session A32: Molecular Glasses: Dynamics

Sponsoring Units: DPOLY

Chair: Sarah Wolf, SUNY Cortland; Zahra Fakhraai, University of Pennsylvania

Room: 102D

8:00AM - 8:36AM	A32.00001: Anatomy of a vapor deposited glass *Invited Author: Ranko Richert*
8:36AM - 8:48AM	A32.00002: Computer simulations of molecular liquids at the experimental glass transition *Ludovic Berthier*
8:48AM - 9:00AM	A32.00003: Cage Escapes Cause Cage Escapes *Rahul N Chacko, François P Landes, Giulio Biroli, Olivier Dauchot, Jorge Kurchan, Andrea J Liu, David Reichman*
9:00AM - 9:12AM	A32.00004: The Local Density of Collective Basin Hops Required to Relax Topological Constraints to α Relaxation is Temperature-Independent *Marcus T Cicerone, David S Simmons, Jesse McDaniel*
9:12AM - 9:24AM	A32.00005: The Role of Spatially Heterogeneous Dynamics in Ultrastable Glasses *Mark D Ediger, Cecilia Herrero, Ludovic Berthier*
9:24AM - 9:36AM	A32.00006: Excitations, Emergent Facilitation and Glassy Dynamics in Supercooled Liquids *Muhammad R Hasyim, Kranthi K Mandadapu*
9:36AM - 9:48AM	A32.00007: The Influence of Vibrational Modes on Sound Attenuation in Two Dimensional Glasses *Elijah J Flenner, Grzegorz Szamel*
9:48AM - 10:00AM	A32.00008: Dynamical theory of network glasses *Max C Hall-Brown*
10:00AM - 10:12AM	A32.00009: The Glass Transition of Co-Amorphous Pharmaceutical Molecular Glasses *Sindee L Simon, Elaheh A. T. Moghadam*
10:12AM - 10:24AM	A32.00010: Descriptors for mobility of thermal and athermal glass-forming systems *Jack Yungbluth, Grigori A Medvedev, James M Caruthers, Brett M Savoie*
10:24AM - 10:36AM	A32.00011: Film thickness and depth-dependent dynamics in thin polymer films through rejuvenation of ultrastable polystyrene glasses *Saba Karimi, James A Forrest, Junjie Yin, Thomas Salez*
10:36AM - 10:48AM	A32.00012: Theory of Bauschinger effect in glassy polymers *Didier R Long, Thomas Merlette, Paul Sotta, Florence Clément*
10:48AM - 11:00AM	A32.00013: Coarse Graining to Predict Molecular Orientations in Evaporated Organic Thin Films Morphologies *Muhammad Nawaz Qaisrani, Naomi Kinaret, Felix Post, Christoph Scherer, Andriy Zhugayevych, Falk May, Wolfgang Brütting, Denis Andrienko*

Monday, March 4, 2024 8:00 am – 11:00 am

Session A33: Liquid Crystalline and Semicrystalline Polymers

Sponsoring Units: DPOLY

Chair: Michelle Calabrese, University of Minnesota

Room: 102E

8:00AM - 8:36AM	A33.00001: Decoupling how structure and processing affects the properties of Liquid Crystal Elastomers. *Invited Author: Devesh Mistry*
8:36AM - 8:48AM	A33.00002: Mesoscale Simulations of Liquid Crystalline Diblock Copolymers *Austin Meng, Robert A Riggleman*
8:48AM - 9:00AM	A33.00003: Self-assembly and liquid crystal behavior of computationally designed peptide coiled-coil bundlemers with parallel symmetry *Zihan Zhang, Jacquelyn Blum, Jeffery G Saven, Christopher J Kloxin, Darrin J Pochan*
9:00AM - 9:12AM	A33.00004: Liquid Crystalline Nonconjugated Open-Shell Organic Molecules *Suman Debnath, Hyunki Yeo, Bryan W Boudouris*
9:12AM - 9:24AM	A33.00005: Entropic Barrier Theory of Polymer Melting and Energy Cascade *Murugappan Muthukumar*
9:24AM - 9:36AM	A33.00006: Molecular Dynamics Simulations of Flow Induced Crystallization of a Simple Polymer Melt Model *Tzortzis Koulaxizis, Antonia Statt*
9:36AM - 9:48AM	A33.00007: Effects of entanglements on the crystallization and morphology of semicrystalline polymers *Thomas Thurn-Albrecht, Zefan Wang, Mareen Schaller, Albrecht Petzold, Kay Saalwaechter*
9:48AM - 10:00AM	A33.00008: Rheological hysteresis in semicrystalline polymers during crystallization and melting *Paul Roberts, Anthony P Kotula*
10:00AM - 10:12AM	A33.00009: Specific Work as a Useful Way to Describe Flow of Polyethylene During Injection Molding *Ken L Kearns, Michelle Mejia, Preston McDaniel, Daniel Ramirez, Marius Chyasnavichyus, Hunter Goldensoph, Carl Reinhardt, Tom Fielitz, John Kohn, Kurt Koppi, Rahul Sharma, Fengyi Zhang, Luca Martinetti*
10:12AM - 10:24AM	A33.00010: Molecular dynamics simulations of polyethylene inter-crystalline phase formation *Lingyi Zou, Wenlin Zhang*
10:24AM - 10:36AM	A33.00011: Particle Concentration Promotes Flow-Induced Crystallization of High Molecular Weight Isotactic Polypropylene *Benson J Jacob, Xiaoshi Zhang, Jongkyeong Kim, Jason Alexander, Manoela Ellwanger, Alicyn M Rhoades, Ralph H Colby*
10:36AM - 10:48AM	A33.00012: Temperature-Dependent FTIR (TD-FTIR) Analysis of PEO-b-PCL Self-Nucleation *Ryan M Van Horn, Emily Rotola, Aidan Stewart*
10:48AM - 11:00AM	A33.00013: Electrostriction-enhanced piezoelectric property of poly(vinylidene fluoride) via high-power ultrasonication *Lei Zhu, Guanchun Rui, Elshad Allahyarov, Philip L Taylor*

Monday, March 4, 2024 11:30 am – 2:30 pm

Session B24: Physics in Polymer Processing

Sponsoring Units: DPOLY

Chair: Anesia Auguste, Air Force Research Laboratory; Yangyang Wang, Oak Ridge National Laboratory

Room: 101DE

11:30AM - 12:06PM	B24.00001: Some factors affecting inter-layer weld strength in material extrusion 3D-printed amorphous and semicrystalline polymers *Invited Author: Dario Cavallo*
12:06PM - 12:42PM	B24.00002: Bottlebrush polymers, networks, and devices *Invited Author: Liheng Cai*
12:42PM - 1:18PM	B24.00003: Designing Advanced Macromolecules for Advanced Manufacturing: Balancing Reactivity, Rheology, and Resolution *Invited Author: Tim Long*
1:18PM - 1:54PM	B24.00004: Directed self-assembly of thermoplastic elastomers via 3D printing for mechanically tailored soft architectures *Invited Author: Emily C Davidson*
1:54PM - 2:30PM	B24.00005: Heating at a Patterned Photothermal Interface *Invited Author: AJ Boydston*

Monday, March 4, 2024 11:30 am – 2:30 pm

Session B25: Dynamic Covalent Polymer Networks and Gels

Sponsoring Units: DPOLY

Chair: Ralm Ricarte, FAMU-FSU College of Engineering; Christopher Evans, University of Illinois at Urbana-Champaign

Room: 101F

11:30AM - 11:42AM	B25.00001: Orthogonal Dynamic Bonds Generate Multiple Relaxation Processes in Soft Networks with Different Polymer Architecture *Sirui Ge, Yu-Hsuan Tsao, Christopher M Evans*
11:42AM - 11:54AM	B25.00002: Crystallization in vitrimers probed by time-domain NMR and complementary methods *Kay Saalwaechter, Bhaskar Soman, Christopher M Evans, Alexander Osterbaan, Alexa S Kuenstler, Christopher N Bowman*
11:54AM - 12:06PM	B25.00003: Influence of associative dynamic covalent cross-links on poly(ethylene oxide)-block-polystyrene vitrimers *Daniel C Barzycki, Ralm G Ricarte*
12:06PM - 12:18PM	B25.00004: Mechanical Insights into Hybrid Vitrimer Network Behavior *Harsh Pandya, Fardin Khabaz*
12:18PM - 12:30PM	B25.00005: Dynamic Bonds Drive Broad Fluctuations of Chain Stretch in Elongated Associative Polymer Melts *Songyue Liu, Thomas C O'Connor*
12:30PM - 1:06PM	B25.00006: Challenges & recent progress in the processing of vitrimers *Invited Author: Damien Montarnal*
1:06PM - 1:42PM	B25.00007: Using Catalytic Control of Dynamic Bond Exchange to Understand Flow and Self-Assembly in Model Networks *Invited Author: Alexa S Kuenstler*
1:42PM - 1:54PM	B25.00008: Mechanism of Shear Thickening in Dynamic Covalent Hydrogels *Adrianne M Rosales, Anne D Crowell, Thomas FitzSimons*
1:54PM - 2:06PM	B25.00009: Exploring the Application of Electrochemical Stimulus to Dynamic Disulfide Based Polymers *Shrayesh Patel, Stuart J Rowan, Garrett Grocke, Hongyi Zhang*
2:06PM - 2:18PM	B25.00010: Covalent Adaptable Networks from Ethylene/1-Octene Multi-block Copolymers: Effects of Melt Flow Index and Crystallinity on Thermomechanical Properties and Reprocessability *Logan M Fenimore, Boran Chen, Yixuan Chen, Stephanie M Barbon, Hayley A Brown, Evelyn Auyeung, Colin Li Pi Shan, John M Torkelson*
2:18PM - 2:30PM	B25.00011: Fully Reprocessable, Non-isocyanate Polyurethane Networks: Dual Thionourethane and Disulfide Cross-links in Non-Isocyanate Polythiourethane Networks Provide Advantages over Polyhydroxyurethane Network Analogues *John M Torkelson*

Monday, March 4, 2024 11:30 am – 2:30 pm

Session B26: Advances in Macromolecular Simulation and Modeling

Sponsoring Units: DPOLY

Chair: Rose Cersonsky, University of Wisconsin – Madison; Janani Sampath, University of Florida

Room: 101G

11:30AM - 12:06PM	B26.00001: From Micro to Macro: Predicting Polymer Blend Toughness *Invited Author: Debra J Audus*
12:06PM - 12:18PM	B26.00002: GPU-Accelerated Three-Dimensional Polymer Density-Functional Theory Calculations of Block Copolymer Self-Assembly *Juntong He, Qiang Wang*
12:18PM - 12:30PM	B26.00003: Langevin Field-Theoretic Simulation for ABC-type Polymer Systems *Daeseong Yong, Jaeup Kim*
12:30PM - 12:42PM	B26.00004: Reproducible coarse-grained thermoplastic modeling using flowerMD *Eric Jankowski, Chris Jones, Rainier Barrett, Marjan Albooyeh*
12:42PM - 12:54PM	B26.00005: Atomistic and Coarse-Grained Molecular Dynamics Simulations of Epoxy Network Polymers *Xi Hao, Chengyuan Wen, Gary D Seidel, Shengfeng Cheng*
12:54PM - 1:06PM	B26.00006: Determining the Limit of Extrapolation for Macromolecular Machine Learning Potentials *Natalie E Hooven, Rose K Cersonsky*
1:06PM - 1:18PM	B26.00007: Capturing Polymer Network Statistics using Branching Random Walks *Shaswat Mohanty, Wei Cai, Zhenyuan Zhang, Jose Blanchet*
1:18PM - 1:30PM	B26.00008: Mesoscopic modeling of dynamically helical polymers: Cooperative phenomena & topological properties *Keerti Chauhan, Maurice Schmitt, Kurt Kremer, Peter Virnau, Kostas Daoulas*
1:30PM - 1:42PM	B26.00009: Conformation-orientation coupling in helical polymers from atomistic simulations *Wenlin Zhang*
1:42PM - 1:54PM	B26.00010: Simulation of the Dynamics of Surface-Tethered Linear, Helical, and Bottlebrush Polymers *Michael A Hore, Ankit Saha, Carolyn A Miller, Nehal Nupnar*
1:54PM - 2:06PM	B26.00011: Use of Microcanonical Inflection Point Analysis for Understanding Phase Transitions in Polymer Simulation Results *Matthew J Williams*
2:06PM - 2:18PM	B26.00012: Effect of branch point fluctuations on dynamics of entangled star polymers: A slip-spring simulation study *Takeshi Sato, Ronald G Larson*
2:18PM - 2:30PM	B26.00013: Simulation of block-copolymer-membrane fabrication *Marcus Müller, Niklas Blagojevic*

Monday, March 4, 2024 11:30 am – 2:30 pm

Session B29: DNA-Based Soft Matter II

Sponsoring Units: DSOFT DBIO DPOLY
Chair: Benjamin Rogers
Room: 101J

11:30AM - 12:06PM	B29.00001: Controlling the dynamics of artificial nucleic acid condensates *Invited Author: Elisa Franco*
12:06PM - 12:18PM	B29.00002: Traveling bands of liquid droplets from stoichiometrically skewed binary condensation *Connor J Chatfield, Deborah K Fygenson*
12:18PM - 12:30PM	B29.00003: Versatile DNA origami subunit design for self-assembled structures *Wei-Shao Wei, Daichi Hayakawa, Rupam Saha, Thomas E Videbaek, W. Benjamin Rogers, Seth Fraden*
12:30PM - 12:42PM	B29.00004: Exploiting floppy modes in geometrically-frustrated assemblies *Michael Wang, Gregory M Grason, Sourav Roy, Christian Santangelo*
12:42PM - 12:54PM	B29.00005: How does a DNA motor turn around a corner on DNA origami? *Hon Lin Too, Pei Yang, Winna Siti, Zhisong Wang*
12:54PM - 1:06PM	B29.00006: Performing Isothermal Molecular Amplification in Nanocavities with Tunable Confinement *Walter W Reisner, Imman I Hosseini, Vahid Hamidi, Zezhou Liu, Xavier Capaldi, Sara Mahshid*
1:06PM - 1:18PM	B29.00007: Physics of single-molecule electrokinetically driven confinement *Matheus Pessôa, Han Cao, Michael Austin, Sara Mahshid, Walter W Reisner*
1:18PM - 1:30PM	B29.00008: Equilibrium dynamics and organization of two cavity-confined polymers *James M Polson, Desiree A Rehel*
1:30PM - 1:42PM	B29.00009: Ni-DNA-based Thin-film NDR Device Development *Yu-Chun Lin, Meng-Wei Hsieh, Kuan-Cheng Lu, Chia-Yu Chang, Wen-Bin Jian, Yu-Chang Chen, Chia-Ching Chang*

Monday, March 4, 2024 11:30 am – 2:30 pm

Session B32: Molecular Glasses: Structure and Stability

Sponsoring Units: DPOLY

Chair: Mark Ediger, University of Wisconsin – Madison; Marcus Cicerone, Georgia Institute of Technology

Room: 102D

11:30AM - 12:06PM	B32.00001: The Structural Change Associated with Amorphous Solidification: A General Order Parameter Description *Invited Author: Peter Harrowell*
12:06PM - 12:18PM	B32.00002: Description of short-range order in glass formers *James M Caruthers, Grigori A Medvedev, Jack Yungbluth, Brett M Savoie*
12:18PM - 12:30PM	B32.00003: Probing the ultimate density and stability of disordered films *Richard B Stephens*
12:30PM - 12:42PM	B32.00004: General behavior of ultrastability and anisotropic molecular packing in co-deposited organic semiconductor glass mixtures *Shinian Cheng, Yejung Lee, Junguang Yu, Lian Yu, Mark D Ediger*
12:42PM - 12:54PM	B32.00005: High-density stable glasses formed on soft substrates *Peng Luo, Sarah Wolf, Shivajee Govind, Richard B Stephens, Donghyup Kim, Cindy Chen, Truc Nguyen, Patryk Wąsik, Mikhail Zhernenkov, Brandon Mcclimon, Zahra Fakhraai*
12:54PM - 1:06PM	B32.00006: Large Mismatch in T_g Values Does Not Impede Formation of Stable Co-deposited Glasses *Megan Tracy, Ranko Richert, Mark D Ediger*
1:06PM - 1:18PM	B32.00007: Probing Bond Angle Orientations in CuZr Glass using Fluctuation X-ray Scattering and Angular Cross-Correlation *Catherine Weibel, Jerome B Hastings, Peihao Sun, Giulio Monaco*
1:18PM - 1:30PM	B32.00008: Effect of fragility on the stability and thermodynamic properties of amorphous Te-Ge films *Christopher N Madsen, Manel Molina-Ruiz, Bengisu Yasar, Aitor Lopeandia, Llibertat Abad, Frances Hellman*
1:30PM - 1:42PM	B32.00009: Dense co-deposited glasses of organic semiconductors have enhanced thermal stability *Yejung Lee, Shinian Cheng, Mark D Ediger*
1:42PM - 1:54PM	B32.00010: Investigating the Kinetic stability of Highly Confined Molecular Glasses Using in-situ Solvent Vapor Annealing *Kritika Jha, Afrah Chowdhury, Zahra Fakhraai*
1:54PM - 2:06PM	B32.00011: Influencing Crystal Nucleation by Glass Preparation Method *Sarah Wolf, Sarah Kono, Dustine Izzo*
2:06PM - 2:18PM	B32.00012: Self-healing in Glasses with a Little Push *Andrea Giuntoli*
2:18PM - 2:30PM	B32.00013: Tuning Thermal Properties of Copolymers via Monomer Sequence and Interactions *Sundol Kim, Rodney D Priestley, Richard A Register*

Monday, March 4, 2024 11:30 am – 2:30 pm

Session B33: Organic Optoelectronics and Photonics I

Sponsoring Units: DPOLY

Chair: Kyungtae Kim, Los Alamos National Laboratory

Room: 102E

11:30AM - 12:06PM	B33.00001: Can we correlate the nature of electronic disorder to structural dynamics in polymer semiconductors? *Invited Author: Natalie Stingelin*
12:06PM - 12:18PM	B33.00002: A Reactive Monte Carlo Model of Molecular Doping in Organic Semiconductors *Archana Verma, Nick Jackson*
12:18PM - 12:30PM	B33.00003: Biomimetic Designs for Semiconducting and Light-Emitting Polymers *Sihong Wang*
12:30PM - 12:42PM	B33.00004: Stereoselectivity in Charge and Spin Transport: From Open-Shell Nonconjugated Monomers to Polymers *Hyunki Yeo, Bryan W Boudouris, Frank A Leibfarth, Cole C Sorensen, Hamas U Tahir, Yun-Fang Yang, Nick Legaux*
12:42PM - 12:54PM	B33.00005: Influence of the Planarity of DPP-BTZ D-A Copolymer Backbone on the Charge Transport Characteristics *Jiyoul Lee*
12:54PM - 1:06PM	B33.00006: Engineering Spontaneous Orientation Polarization in Organic Semiconductor Thin Film via Molecular Blending *Brian He, Ryker Rofshus, Evgeny Pakhomenko, Russell J Holmes*
1:06PM - 1:18PM	B33.00007: Barrier Modification of the Metal Contacts by an Ultrathin Oxide Layer in Organic Field-Effect Transistors *Arash Ghobadi, Cherian J Mathai, Shubhra Gangopadhyay, Suchismita Guha*
1:18PM - 1:30PM	B33.00008: Bond Breaking Kinetics in Mechanically Controlled Break Junction Experiments: A Bayesian Approach *Dylan M Dyer*
1:30PM - 1:42PM	B33.00009: Near-edge X-ray absorption fine-structure spectroscopy of benzothienobenzothiophene at carbon and sulfur K-edges. *Paul A Chantler*
1:42PM - 1:54PM	B33.00010: Perforated graphene source electrode for improved subthreshold swing and miniaturization of vertical organic field effect transistors (VOFET) *Gaurav Shukla, Ramesh S Bisht, Pramod Kumar*
1:54PM - 2:06PM	B33.00011: Giant Magnetoresistance and Inverse Spin Hall Effect in Non-Conjugated Radical Polymers *Hamas U Tahir, Carsten Flores-Hansen, Kangying Liu, Sheng-Ning Hsu, Zihao Liang, Neil R Dilley, Bryan W Boudouris, Brett M Savoie*
2:06PM - 2:18PM	B33.00012: Many-body charge transport physics of heavily doped polymer semiconductors *Dionisius Hardjo Lukito Tjhe, Xinglong Ren, Ian Jacobs, Gabriele d'Avino, Tarig Mustafa, Thomas Marsh, Lu Zhang, Yao Fu, Ahmed Mansour, Yuxuan Huang, Wenjin Zhu, Ahmet Hamdi Unal, Vincent Lemaur, Claudio Quarti, Jin-Kyun Lee, Iain McCulloch, Martin Heeney, Norbert Koch, Clare Grey, David Beljonne, Simone Fratini, Henning Sirringhaus*
2:18PM - 2:30PM	B33.00013: Elucidating the Impact of Charge Transfer on Organic Spontaneous Orientation Polarization via Kelvin Probe *Evgeny Pakhomenko, Sage Martin, Russell J Holmes*

Monday, March 4, 2024 11:30 am – 1:30 pm, CT

Session BB05: V: Experimental Advances in Polymer Physics

Sponsoring Units: DPOLY

Chair: R Bharath Venkatesh, University of California, Santa Barbara

Room: Virtual Room 05

11:30AM - 11:42AM	BB05.00001: Electroabsorption in the Nonconjugated Conductive Polymer Iodine-doped Polyethylene Terephthalate, an example of Organic Metallic Quantum Dots of Subnanometer Dimensions *Mrinal Thakur, J Van Cleave, MK Elias*
11:42AM - 11:54AM	BB05.00002: On-Demand Wearable Piezoelectric Textiles Enabled by Lead-Free Perovskite and Conducting Polymer *Bidya Mondal, Dipankar Mandal*
11:54AM - 12:06PM	BB05.00003: Electrostatic Force Mediated Work Function Modulation of Polyvinylidene crystalline Phases *Ajay Kumar*
12:06PM - 12:18PM	BB05.00004: Origins of Ultrahigh Electromechanical Response in a New Class of Relaxor Ferroelectric Polymers *Qiming Zhang*
12:18PM - 12:30PM	BB05.00005: Spectroscopic Analysis on Polyethylene Oxide Loaded with Fullerenes *Alexandro Trevino, Cristina Canchola, Zachary Siehr, Shahria Ahmed, Dorina M Chipara, Karen Martirosyan, Nicholas Dimakis, Mohammed Uddin, Mircea Chipara*
12:30PM - 12:42PM	BB05.00006: Surface Potential Modulation in 3D Printed Thermoelectret for Improved Mechanical Energy Harvesting and Physiological Sensing *Dalip Saini*
12:42PM - 12:54PM	BB05.00007: Phase Behavior of Polyethylene Oxide-Fullerene *Mircea Chipara, Lydia Morales, Alexandro Trevino, Daniel DeLeon, Karen Lozano, Victoria Padilla, Karen Martirosyan, Dorina M Chipara*
12:54PM - 1:06PM	BB05.00008: Observation of ferroelectric programmability in 3D printed metamaterials *Mohamed Roshdy, Osama R Bilal*
1:06PM - 1:18PM	BB05.00009: Investigation of the Bound Layer in Thin Films of Hydrophilic Polymer and their Nanocomposites *Sonam Zangpo Bhutia, Sathish K Sukumaran, Dillip K Satapathy*
1:18PM - 1:30PM	BB05.00010: Modifying thermal properties of polyesters by incorporating additional groups *Leire Sangroniz, Yoon-Jung Jang, Marc A Hillmyer, Alejandro J J Müller*

Monday, March 4, 2024 4:00 pm – 5:36 pm, CT

Session CC05: V: Computational Advances in Polymer Physics

Sponsoring Units: DPOLY

Chair: Yangyang Wang, Oak Ridge National Laboratory

Room: Virtual Room 05

4:00PM - 4:12PM	CC05.00001: Entropic Augmentation of Coarse-Grained Potentials for Resolving Dynamics Using the Iterative Boltzmann Inversion (IBI) Method *Frederick R Phelan, Lilian C Johnson*
4:12PM - 4:24PM	CC05.00002: Accessibility of Ring-closing depolymerization for polycarbonates with multiple theory validation *Brandi Ransom, Nathan Park, Dmitry Zubarev, Kristin Schmidt*
4:24PM - 4:36PM	CC05.00003: Thermal Stiffening in Polymer Nanocomposites with Dynamically Heterogenous Interfaces *Rahmi Ozisik, Andrew Ehlers*
4:36PM - 4:48PM	CC05.00004: Multibody Interaction Effects in the Phase Behaviors of Molten Diblock Copolymers *Junhan Cho, Mingge Zhao, Xinyue Zhang*
4:48PM - 5:00PM	CC05.00005: Multilayered ordered arrays self-assembled from nanoparticle mixtures via salt dialysis *Camila Faccini de Lima, Vikram Jadhao*
5:00PM - 5:12PM	CC05.00006: Critical scaling of shear modulus for particle-filled soft elastomers in the jamming limit *Yiqiu Zhao, Qin Xu*
5:12PM - 5:24PM	CC05.00007: Expansion Kinetics of Single Flexible Polymers upon Release from a Circular Cavity in Three- and Two-Dimensional Spaces *Pai-Yi Hsiao*
5:24PM - 5:36PM	CC05.00008: MLABT: fast and accurate atomistic modeling of thermosets under large deformation *Zheng Yu, Nick Jackson*

Monday, March 4, 2024 3:00 pm – 6:00 pm

Session D25: Rheology and Mechanics of Polymer Systems

Sponsoring Units: DPOLY

Chair: Aman Agrawal, University of Chicago

Room: 101F

3:00PM - 3:12PM	D25.00001: Exploring the role of crystal thickness and secondary crystallization in tie molecule effectiveness and ductility *Katherine M Gunter, Richard A Register*
3:12PM - 3:24PM	D25.00002: Methodology for Characterizing Complex Strain of Polymeric Thin Films *Kenya Hazell, Anesia D Auguste, Andrew Gillman, Lawrence Drummy*
3:24PM - 3:36PM	D25.00003: Creep in yield stress materials advances through scale-free avalanches *Daniel J Korchinski, Dor Shohat, Joerg Rottler, Matthieu Wyart, Yoav Lahini*
3:36PM - 3:48PM	D25.00004: Onset of mechanical failure in shear-jammed dense suspensions *Malcolm Slutzky, Michael van der Naald, Heinrich M Jaeger*
3:48PM - 4:00PM	D25.00005: Particle-filled emulsion drops show flow-induced partial coalescence, but only transiently *Jovina Vaswani, Sachin S Velankar, Charles M Schroeder*
4:00PM - 4:12PM	D25.00006: Structure, solubility and solution rheology of poly(ionic liquids) *Carlos G Lopez, Atsushi Matsumoto, Takaichi Watanabe*
4:12PM - 4:24PM	D25.00007: Gelation dynamics in elastomers with branched architecture *Benjamin Yavitt, Jonathan Pham, Sarah Barber, Ejajul Hoque, Kyujin Ko*
4:24PM - 4:36PM	D25.00008: Evaluation of diffusion and dethreading in blends of ring and linear polymers *Daniel L Vigil, Ting Ge, Thomas C O'Connor, Gary S Grest*
4:36PM - 4:48PM	D25.00009: Linking Polymer Architecture to Bubble Shape in LDPE Film Blowing through Multistage Modeling *Zhiqiang Shen, Ronald G Larson, Yanan Gong*
4:48PM - 5:00PM	D25.00010: Recent Advances in Polymer Viscoelasticity From General Rigid Bead-Rod Theory *Mona Kanso, Alan Jeffrey Giacomin*
5:00PM - 5:12PM	D25.00011: Calibration of Polymer Molecular Weight Using Solution Viscosity in Dilute and Semidilute Solutions *Ryan Sayko, Ralph H Colby, Andrey V Dobrynin*
5:12PM - 5:24PM	D25.00012: Linking Ultra-High Strain Rate Impact Resistance of Polymers from Nano to Macro *Kyle Callahan, Katherine M Evans, William Heard, Edwin P Chan, Santanu Kundu*
5:24PM - 5:36PM	D25.00013: Multiscale Modeling of Nonlinear Rheology for Entangled Polymer Melts *Heyi Liang, Kenji Yoshimoto, Juan J De Pablo*
5:36PM - 5:48PM	D25.00014: Flow-Induced Nucleation as a Stabilizing Mechanism for Polymers against Edge Fracture *Arshiya Bhadu*

Monday, March 4, 2024 3:00 pm – 6:00 pm

Session D26: Physics Concepts in Polymer Engineering

Sponsoring Units: DPOLY

Chair: Thomas Thurn-Albrecht, University of Halle-Wittenberg; Kay Saalwächter, University of Halle-Wittenberg

Room: 101G

3:00PM - 3:36PM	D26.00001: Polymer crystallization at high melt-supercooling *Invited Author: René Androsch*
3:36PM - 3:48PM	D26.00002: Semicrystalline polyethylene as a network in the gelation regime *August W Bosse, Jevan Furmanski*
3:48PM - 4:00PM	D26.00003: Porous Melt Blown PBT Fibers with High Ductility and High Temperature Structure Stability *Josh W Goetze, Cesar Benitez, Frank S Bates, Christopher J Ellison*
4:00PM - 4:12PM	D26.00004: Processing-dependent microstructure and gas permeability of polyethylene blends for improved oxygen barrier *Kyungtae Kim, Aristotle J Zervoudakis, Jacob A LaNasa, Greg Haugstad, Fang Zhou, Bongjoon Lee, Olivier Lhost, Yves Trolez, Frank S Bates, Chris W Macosko*
4:12PM - 4:24PM	D26.00005: Establishing structure-processing-property relationships in 3D printed thermoplastic: pi-conjugated blends *Audrey Laventure, Jiayi Chen, Nahel Blanc*
4:24PM - 4:36PM	D26.00006: The Role of Shear and Extensional Flows in 3DP-Induced Alignment of Block Copolymer Nanostructures *Alice S Fergerson, Shawn M Maguire, Emily C Davidson*
4:36PM - 4:48PM	D26.00007: Residual orientation mapping in material extrusion processes *Anthony P Kotula, Jonathan Seppala, Benjamin E Dolata, Yoontae Kim*
4:48PM - 5:00PM	D26.00008: Evaluation of Fiber Orientation Measurement Techniques and Anisotropic Tensile Analysis of Additively Manufactured Carbon Fiber Poly-Lactic Acid *Lucinda K Slattery, Zackery B McClelland, Samuel T Hess*
5:00PM - 5:12PM	D26.00009: Understanding Nonlinear Fluid Dynamics for All-aqueous Printing of a Viscoelastic Droplet in Yield-Stress Fluids *Xiaoxiao Ma, Jinchang Zhu, Li-Heng Cai*
5:12PM - 5:24PM	D26.00010: Modeling Electrosprayed Particle Assembly on Geometrically Controlled Sessile Droplet Surfaces through Brownian Dynamics Simulations *Nasir Amiri, Joseph M Prisaznuk, Peter Huang, Paul R Chiarot, Xin Yong*
5:24PM - 5:36PM	D26.00011: Modelling the interplay between printing conditions, rheology, and crystallization in MatEx additive manufacturing *Claire McIlroy*
5:36PM - 5:48PM	D26.00012: Abstract Withdrawn
5:48PM - 6:00PM	D26.00013: Effects of Cooperative Association on Polymer Conformational Transition in Solutions *Xiangyu Zhang, Dong Meng*

Monday, March 4, 2024 3:00 pm – 6:00 pm

Session D30: Self-Driving Labs: Autonomous, High-throughput Experimentation and Modeling in Polymer Physics

Sponsoring Units: DPOLY

Chair: Tarak Patra, Indian Institute of Technology Madras; Jeffrey Ethier, Air Force Research Lab

Room: 102AB

3:00PM - 3:36PM	D30.00001: Self-driving Lab (Polybot) for electronic polymer discovery *Invited Author: Jie Xu*
3:36PM - 4:12PM	D30.00002: Unravelling the Extreme Mechanics of Hierarchical Polymers using Self-Driving Labs *Invited Author: Keith A. Brown*
4:12PM - 4:48PM	D30.00003: Automation and Active Learning for the Autonomous Design of Polymer Biomaterials *Invited Author: Adam Gormley*
4:48PM - 5:24PM	D30.00004: The NIST Autonomous Formulation Laboratory: Solving Industrial Problems with X-Ray and Neutron Scattering and AI *Invited Author: Peter Beaucage*
5:24PM - 6:00PM	D30.00005: Tsuchinoko: a GUI for Autonomous Experiments *Invited Author: Ronald Pandolfi*

Monday, March 4, 2024 3:00 pm – 6:00 pm

Session D32: Polymer Glasses

Sponsoring Units: DPOLY

Chair: Valeriy Ginzburg, Michigan State University; Didier Long, INSA de Lyon

Room: 102D

3:00PM - 3:36PM	D32.00001: Invited: Glass transition of polymers under ultrafine nanoconfinement: interfacial dynamics and the spatial gradients *Invited Author: Shiwang Cheng*
3:36PM - 3:48PM	D32.00002: Acoustic Wave Propagation as a Long-Range Mechanism for Interactions in Glasses: Experimental Evidence from Studies on Glassy-Rubbery Polymer Bilayers *Connie B Roth, Alexander A Couturier, Yannic J Gagnon, Justin C Burton*
3:48PM - 4:00PM	D32.00003: How Does the Length of End-grafted Polystyrene Chains Alter the Spatial Gradient in Local Glass Transition Temperature Tg(z) Near Silica Interfaces? *James H Merrill, Connie B Roth*
4:00PM - 4:12PM	D32.00004: Correlation between Fragility and Surface T_g of Polymers *Ophelia K Tsui, Zongyi Ma, Haoran Nie, Jinsong Yan*
4:12PM - 4:24PM	D32.00005: Using Rheological and Dielectric Spectroscopy Measurements of Time-Temperature Superposition Breakdown to Validate Heterogeneous Rouse Model *Peijing Yue, David S Simmons*
4:24PM - 5:00PM	D32.00006: A random walk description of mobility in glasses *Invited Author: Grigori A Medvedev*
5:00PM - 5:12PM	D32.00007: Evidence for Two Mechanisms Driving Molecular Weight Dependence of the Glass Transition Temperature in Linear Polymers *William F Drayer, David S Simmons*
5:12PM - 5:24PM	D32.00008: Combined Modeling of the Volume, Dielectric, and Stress Relaxation and Fatigue Behavior in Glassy Polymers *Valeriy Ginzburg, Alessio Zaccone, Oleg Gendelman*
5:24PM - 5:36PM	D32.00009: Local structural effects on thermodynamic properties and dynamic response *Jane E Lipson, Ronald P White*
5:36PM - 5:48PM	D32.00010: Segmental (α-) and Slow (SAP) Relaxation Processes: Connections with Thermodynamic Properties and Physical Aging *Ronald P White, Jane E Lipson*
5:48PM - 6:00PM	D32.00011: Spatial variations in dynamic heterogeneity in polymer thin films *David S Simmons, Austin Hartley, William F Drayer, Asieh Ghanekarade*

Monday, March 4, 2024 3:00 pm – 6:00 pm

Session D33: Organic Optoelectronics and Photonics II

Sponsoring Units: DPOLY
Chair: Youngmin Lee, New Mexico Tech
Room: 102E

3:00PM - 3:36PM	D33.00001: The Role of Redox Doping in Organic Electronics and Opto-electronics *Invited Author: Seth Marder*
3:36PM - 3:48PM	D33.00002: Connecting optical absorption to doping in conjugated polymers *Muhamed Duhandzic, Michael Lu Diaz, Subhayan Samanta, Dhandapani Venkataraman, Zlatan Aksamija*
3:48PM - 4:00PM	D33.00003: Improving Blue Organic Light Emitting Diode Efficiency and Reliability using Purcell Effect-enhanced Tandem Emitters *Claire Arneson, Haonan Zhao, Stephen R Forrest*
4:00PM - 4:12PM	D33.00004: Investigating the structure-packing-mobility relationship of pure hydrocarbon host materials in OLEDs *Kun-Han Lin, Yao-Yu Lee*
4:12PM - 4:24PM	D33.00005: Tight-binding approach describes polaron transport in organic semiconductors *Vishal Jindal, Michael J Janik, Scott T Milner*
4:24PM - 4:36PM	D33.00006: Engineering Strong Exciton-Photon Coupling via Molecular Orientation in Organic Microcavities *Yicheng Liu, Russell J Holmes*
4:36PM - 4:48PM	D33.00007: A nanoscale view of PM6 and Y6 bulk and interfacial structures *Christine L Mahajan, Enrique D Gomez, Scott T Milner*
4:48PM - 5:00PM	D33.00008: Exciton dissociation in Y6-based nonfullerene organic solar cells: a nonadiabatic molecular dynamics study *BIN LIU, Ding Pan*
5:00PM - 5:12PM	D33.0009: Theory of Purcell effect enhancement on the operational lifetime of phosphorescent organic light-emitting devices *Haonan Zhao, Boning Qu, Stephen R Forrest*
5:12PM - 5:24PM	D33.00010: Impact of Doping on Absorbance Tails and Power Conversion Efficiency of Photovoltaics *Andrew Tolton, Zlatan Aksamija*
5:24PM - 5:36PM	D33.00011: Singlet fission dynamics in organic compounds containing hetero-atom linkers *Moshe R Chesler, Sumitendra Mazumdar*
5:36PM - 5:48PM	D33.00012: Engineering of polymerized small molecule acceptors for all-polymer solar cells: insights from DFT calculations *Diego Sorbelli, Giulia Galli*

Tuesday, March 5, 2024 8:00 am – 11:00 am

Session F26: Machine Learning and Advanced Computational Methods in Polymer Physics
Sponsoring Units: DPOLY
Chair: Robert Ivancic, National Institute of Standards and Tech
Room: 101G

8:00AM - 8:36AM	F26.00001: Break for Polymer Physics Prize
8:36AM - 8:48AM	F26.00002: Bicontinuous microemulsion in binary blends of complimentary diblock copolymers *James D Willis, Mark W Matsen*
8:48AM - 9:00AM	F26.00003: Complex Solutions of Self-Consistent Field Theory *Jaeup Kim, Wonjun Kang, Daeseong Yong*
9:00AM - 9:12AM	F26.00004: Preserving Positivity: Developments in Density-Explicit Field-Theoretic Simulations *Timothy Quah, Kevin Shen, Kris T Delaney, Glenn H Fredrickson*
9:12AM - 9:24AM	F26.00005: Bridging Particle and Field-Theoretic Simulations of Polymers with Deep Learning *Dongqi Zhao, Robert A Riggleman*
9:24AM - 9:36AM	F26.00006: Molecular Dynamics Simulation of the Self-Assembly of Rigid Sphere-Rod Amphiphilic Marcomolecules into Onion-Like Assemblies *Farzad Toiserkani, Yifan Zhou, Tianbo Liu, Mesfin Tsige*
9:36AM - 9:48AM	F26.00007: Coil-helix Block Copolymers Can Exhibit Divergent Thermodynamics *Michael J Grant, Brennan J Fingler, Natalie Buchanan, Poornima Padmanabhan*
9:48AM - 10:00AM	F26.00008: Chemical Potential of a Flexible Polymer Liquid in a Coarse-grained Representation *James Donley, Mohammadhasan Dinpajooh, Jonathan Millis, Marina G Guenza*
10:00AM - 10:12AM	F26.00009: MolSets: Molecular graph deep sets model for mixture property modeling *Hengrui Zhang, James M Rondinelli, Wei Chen*
10:12AM - 10:24AM	F26.00010: Quantifying Similarity between Polymer Ensembles *Debra J Audus, Jiale Shi, Dylan Walsh, Weizhong Zou, Nathan J Rebello, Michael E Deagen, Katharina Fransen, Xian Gao, Bradley D Olsen*
10:24AM - 10:36AM	F26.00011: Identifying promising anions for superionic single-ion conducting polymer electrolytes using data-science approaches *Qinyu Zhu, Catalin Gainaru, Kenneth S Schweizer, Alexei P Sokolov, Yifan Liu, Valentino R Cooper, Rajeev Kumar*
10:36AM - 10:48AM	F26.00012: Predicting Nanoparticle Dispersion State in Polymer Films via Machine Learning *Willliam C Marshall, Sanat K Kumar*
10:48AM - 11:00AM	F26.00013: Nucleation patterns of polymer crystals analyzed by machine learning models *Atmika Bhardwaj, Jens-Uwe Sommer, Marco Werner*

Tuesday, March 5, 2024 8:00 am – 11:00 am

Session F32: Polymer Composites and Nanocomposites I: Properties

Sponsoring Units: DPOLY
Chair: Shiwang Cheng, Michigan State University
Room: 102D

8:00AM - 8:36AM	F32.00001: Break for Polymer Physics Prize
8:36AM - 8:48AM	F32.00002: Improving interparticle contacts via photothermal heating of the particle *Laura Clarke, Erin Crites, Nora Hicks, Jason Bochinski*
8:48AM - 9:00AM	F32.00003: Strengthening Polymers with Gas-Phase-Synthesized Graphene *Albert Dato*
9:00AM - 9:12AM	F32.00004: Effect of End-Functionalization of Chain Additives on the Microdynamics of Rubber Nanocomposites *Mark D Foster, Hakan Aras, Dillon Presto, Suresh Narayanan, Sergio Moctezuma, Mark D Sutton*
9:12AM - 9:24AM	F32.00005: Microstructural origin of non-monotonic piezoresistivity in CNT/epoxy nanocomposite *Fangxin Zou, Ting-yui Wong, Tao Yu*
9:24AM - 9:36AM	F32.00006: Molecular design of a filler-polymer interface in silica-filled rubbers *Tad Koga, Zhixing Huang, Yashasvi Bajaj, Xiaoran Wang, Maya Endoh, Tomomi Masui, Hiroyuki Kishimoto, Michihiro Nagao, Naresh C Osti, Bela Farago, Margarita Kruteva, Jürgen Allgaier, Dieter Richter*
9:36AM - 9:48AM	F32.00007: Modeling the Response of Soft Microgels to Crowding by Nanoparticles *Mahesh Aryal, Alan R Denton*
9:48AM - 10:00AM	F32.00008: Investigating the impact of nanoscale structures on thermoelectric transport in polymer-nanoparticle composites. *Nelson Coates, Jennifer T Heath, Paige Hall, Khouloud Aldura, Pratik S Oli, Eli Robinson, Raychel Brown*
10:00AM - 10:12AM	F32.00009: Self-Limiting Electrospray Deposition of Nanoparticle Composites via Sub-Percolation Assembly *Jouan Yu, Michael Grzenda, Kelly Hughes, Maria Atzampou, Rachel M Vladimirsky, Christopher E Shuck, Yury Gogotsi, Jeffrey Zahn, Jonathan P Singer*
10:12AM - 10:24AM	F32.00010: Designing High-Performance Cellulose-Nanofiber Thermoplastic Polymer Composites Through Multi-Scale MD Simulations *Shalini Jayaraman Rukmani, Vaidyanathan M Sethuraman, Monojoy Goswami, Soydan Ozcan, Jeremy C Smith*
10:24AM - 10:36AM	F32.00011: Hydrodynamic flows and interactions in unentangled polymer nanocomposites *Christian A Aponte-Rivera, Andrew S Wijesekera, Ting Ge*

Tuesday, March 5, 2024 8:00 am – 11:00 am

Session F33: Chain Structures and Dynamics

Sponsoring Units: DPOLY

Chair: Yuma Morimitsu, Kyushu Univ; Kawaguchi Daisuke, Univ of Tokyo

Room: 102E

8:00AM - 8:36AM	F33.00001: Break for Polymer Physics Prize
8:36AM - 9:12AM	F33.00002: AFM Nanomechanics for Polymer Physics *Invited Speaker: Ken Nakajima*
9:12AM - 9:24AM	F33.00003: Entangled polymer dynamics through the lens of density self-correlation function *Yangyang Wang, Zhiqiang Shen, Jan-Michael Y Carrillo, Bobby Sumpter*
9:24AM - 9:36AM	F33.00004: Observation of the Interfacial Layer Designed to Improve Polymer Adhesion *Daisuke Kawaguchi, Reika Nakayama, Hiroki Koga, Masayasu Totani, Keiji Tanaka*
9:36AM - 9:48AM	F33.00005: Visualization of polymer conformations under mechanical deformation using super-resolution optical microscopy *Ruiqi Xiao, Jonathan M Chan, Jie Chen, Qifeng Wang, Wei Chen, Kenneth R Shull, Muzhou Wang*
9:48AM - 10:00AM	F33.00006: Atomic-level determination of polymer chain structures by electron microscopy combined with molecular simulation *Tomohiro Miyata, Yoshiaki Kawagoe, Raita Goseki, Tomonaga Okabe, Takashi Ishizone, Hiroshi Jinnai*
10:00AM - 10:12AM	F33.00007: Chain movements at the topmost surface of polymer films at high temperature or under water directly evaluated by in-situ real-time AFM in the tapping mode *Jiro Kumaki, Kouki Koike, Yuto Kashiwaya*
10:12AM - 10:24AM	F33.00008: Adsorption of Polymer Chains onto a Solid Surface during Spin Coating Process *Yuma Morimitsu, Hisao Matsuno, Keiji Tanaka*
10:24AM - 10:36AM	F33.00009: Surface Properties of Pendant-functionalized Polyester Thin Films *Javad Tamnanloo, Abraham Joy, Mesfin Tsige*
10:36AM - 10:48AM	F33.00010: Morphology manipulation in block copolymer films by reversible metal infiltration *Mingchao Ma, Runze Liu, Tingyu Su, Zehao Sun, Caroline A Ross*

Tuesday, March 5, 2024 8:00 am – 11:00 am

Session F43: Polymer Physics Prize

Sponsoring Units: DPOLY

Chair: Marcus Müller, University of Gottingen

Room: Auditorium 1

8:00AM - 8:36AM	F43.00001: Prize Talk: Polymer Physics Prize - Origin of the Entropic Driving Force in Polyelectrolyte Complex Coacervation *Invited Author: Zhen-Gang Wang*
8:36AM - 9:12AM	F43.00002: Structure and dynamics of tetrahedrally coordinated block copolymer particles *Invited Author: Frank S Bates*
9:12AM - 9:48AM	F43.00003: From Polymers to Bosons: Can AMO Physics Benefit from Polymer Field Theory? *Invited Author: Glenn H Fredrickson*
9:48AM - 10:24AM	F43.00004: Decoupling the Effects of Charge Density and Hydrophobicity on the Phase Behavior and Viscoelasticity of Complex Coacervates *Invited Author: Sarah L Perry*
10:24AM - 11:00AM	F43.00005: Solvation Time Scales in Polymer Electrolytes for Lithium Batteries *Invited Author: Nitash P Balsara*

Tuesday, March 5, 2024 11:30 am – 2:30 pm

Session G26: Frank J. Padden Jr. Award Symposium

Sponsoring Units: DPOLY

Chair: Moon Park, Postech - South Korea

Room: 101G

11:30AM - 11:42AM	G26.00001: Polymer as Structure Director in the Self-Assembly of Block Copolymer Colloids *Juhong Ahn, Liwen Chen, Patrick T Underhill, Guillaume Freychet, Mikhail Zhernenkov, Sangwoo Lee*
11:42AM - 11:54AM	G26.00002: Leveraging the Co(non)solvency Effect of Dimethyl Sulfoxide and Water to Fine-tune Hydrogel Network Structures for Enhanced Transport and Mechanical Properties *Keturah Bethel, Eric M Davis, Jaden Stutts, Elsa Saines*
11:54AM - 12:06PM	G26.00003: Generative Block Polymer Phase Discovery *Pengyu Chen, Kevin D Dorfman*
12:06PM - 12:18PM	G26.00004: How Does Gelation Impact the Mechanical Properties of Polymer Networks? Insights from Polymer Mechanochemistry *Aaliyah Z Dookhith, Gabriel E Sanoja*
12:18PM - 12:30PM	G26.00005: Positional Charge Correlations in Symmetrically and Asymmetrically Charged Polyelectrolyte Complexes *Yan Fang, Artem Rumyantsev, Angelika S Neitzel, Heyi Liang, Juan J De Pablo, Matthew V Tirrell*
12:30PM - 12:42PM	G26.00006: Effects of Chain Length Asymmetry and Salt Ion Valency on Polyelectrolyte Complexation *Divya Iyer, Holly Senebandith, Lucas Willey, Rong Feung Peter Goh, Vanessa Huaco, Samanvaya Srivastava*
12:42PM - 12:54PM	G26.00007: Extreme Suppression of Dynamics in Highly Concentrated Polyelectrolyte Solutions *Harrison Landfield, Nicholas Kalamaris, Muzhou Wang*
12:54PM - 1:06PM	G26.00008: Identifying Mechanisms of Penetrant Diffusion in Highly Crosslinked Polymer Networks *Tsai-Wei Lin, Baicheng Mei, Grant S Sheridan, Junrou Huang, Christopher M Evans, Kenneth S Schweizer, Charles E Sing*
1:06PM - 1:18PM	G26.00009: Important Roles of 2-Ethylhexyl Acrylate Comonomers at Interfaces in Nanoconfined and Bulk Styrene-Based Random Copolymers *Tong Wang, Sumeng Hu, Asghar Peera, John Reffner, Wenshiue O Young, Matthew C Carter, Kimy Yeung, Li Li, John M Torkelson*
1:18PM - 1:30PM	G26.00010: Elastic and Ionic Environment Effects on Collagen Fibril Assembly *Kathryn G Wilcox, Grace M Kemerer, Svetlana Morozova*
1:30PM - 1:42PM	G26.00011: Electrostatic Origins of Mixed Salt Partitioning Phenomena in Uncharged Poly(ethylene oxide)-Based Membranes *Everett S Zofchak, Aubrey E Quigley, Jordyn G Yoh, Kevin K Reimund, Harnoor S Sachar, Scott T Milner, Benny D Freeman, Venkat Ganesan*

Tuesday, March 5, 2024 11:30 am – 2:30 pm

Session G32: Polymer Composites and Nanocomposites II: Structure

Sponsoring Units: DPOLY

Chair: Michael Hore, Case Western Reserve University

Room: 102D

11:30AM - 11:42AM	G32.00001: From Fully Stretched to Collapsed: Bottlebrush Polymer Chain Dimensions When Grafted to Nanoparticles *Jensen Sevening, Robert J Hickey, Michael A Hore, Matthew T Swulius, Hilmar Koerner*
11:42AM - 11:54AM	G32.00002: Amplification of Self-Healing in Polymer Hybrid Materials Using Microstructure Engineering *Yuqi Zhao, Hanshu Wu, Krzysztof Matyjaszewski, Michael R Bockstaller*
11:54AM - 12:06PM	G32.00003: Film Thickness Dependence of Morphology Evolution in Polymer-Grafted Nanoparticle Composites *Aria C Zhang, Kohji Ohno, Russell J Composto*
12:06PM - 12:18PM	G32.00004: Characterizing Multi-Scale Structure and Order in Hyperuniform Polymer Grafted Nanoparticle Assemblies *Andrew Gillman, Lawrence Drummy, Daniel Long, Kyoungweon Park, Anesia D Auguste, Kenya Hazell, Jonathan Karhoff*
12:18PM - 12:30PM	G32.00005: Polyether-Grafted Nanoparticle Nanocomposites *Robert C Ferrier, Shaylynn Crum-Dacon, Mayson Whipple*
12:30PM - 12:42PM	G32.00006: Nanoparticle Assembly in Polymer Nanocomposite Films *Russell J Composto, Aria C Zhang*
12:42PM - 12:54PM	G32.00007: Curvature Induced Radial and Lateral Heterogeneity of Grafted Polymers *Tiffany Chen, Ting Xu*
12:54PM - 1:06PM	G32.00008: Suppression of Macroscopic Phase Separation in Polystyrene/Poly(methyl methacrylate) Blends Confined Within the Interstices of Silica Nanoparticle Packings *Trevor Devine, Daeyeon Lee, Robert A Riggleman, Anastasia Neuman*
1:06PM - 1:18PM	G32.00009: Role of Dynamic Crosslinks on the Phase Behaviour and Stability of Polymer Nanocomposites *Sayani Karmakar, Tarak K Patra*
1:18PM - 1:30PM	G32.00010: Bead Spring Simulations of Polymer Nanofiller Composites to Study Equilibrium and Stress-Strain Response Properties *Supun S Mohottalalage, John J Karnes, Todd H Weisgraber, Andrew P Saab, Amitesh Maiti*
1:30PM - 1:42PM	G32.00011: Shear-Driven Assembly of Nanorods in Polymer Nanocomposites *Phillip A Taylor, Ting Ge, Thomas C O'Connor, Gary S Grest*
1:42PM - 1:54PM	G32.00012: Molecular Dynamics Study on the Rheology of Polymer-Nanoparticles Mixture: Role of Inter-particle Interactions *Sameer Rajendra Kalghatgi, Sanat K Kumar, Ethayaraja Mani*
1:54PM - 2:06PM	G32.00013: Creating, Characterizing, and Modeling Nanocomposites of Silicone and Barium Titanate Nanoparticles *Jessica Santosa, Vanessa Bartling, Heather Fuentes, Katrina Nelson, Avery Pritchard, Albert Dato, Renee Van Ginhoven, Todd Monson*
2:06PM - 2:18PM	G32.00014: Optimising the Performance of Biodegradable Polymers: Design of Fillers and Plasticisers to Tune Polymer Crystallization *Karen Johnston, Katarzyna Majerczak, Dominic Wadkin-Snaith, Nisha Middleton, Paul Mulheran, Vitor Magueijo, John Liggat*
2:18PM - 2:30PM	G32.00015: The Effect of Incorporation of Cellulose Nanocrystal on Polymer Dynamics and Rheological Properties of Polylactic-acid Nanocomposites *Hyojin Jung, So Youn Kim*

Tuesday, March 5, 2024 11:30 am – 2:30 pm

Session G33: Programmed Responsive Polymers and Soft Matter I

Sponsoring Units: DPOLY
Chair: Liheng Cai, University of Virginia
Room: 102E

11:30AM - 11:42AM	G33.00001: Modeling Liquid-Solid Phase Transitions in Suspensions of Compressible Microgels *Oreoluwa E Alade, Alan R Denton*
11:42AM - 11:54AM	G33.00002: Swelling Behavior and Structure of Binary Mixtures of Ionic Microgels *Alan R Denton, Mohammed O Alziyadi*
11:54AM - 12:06PM	G33.00003: A Granular Actuator Made of Electrically Conductive Grains *Medha Goyal, Amir M Nasab, Sophia Eristoff, Lina Sanchez-Botero, Osman D Yirmibesoglu, Rebecca Kramer-Bottiglio*
12:06PM - 12:18PM	G33.00004: Thermomechanical Coupling in Monodomain and Polydomain Liquid Crystal Elastomers *Ruobing Bai, Zhengxuan Wei*
12:18PM - 12:54PM	G33.00005: Interaction of Amphiphilic Block Copolymers with Abiotic Lipid Membranes and with Cells *Invited Author: Timothy P Lodge*
12:54PM - 1:06PM	G33.00006: Self-Growth of Hydrogels under Constraints *Santidan Biswas, Victor V Yashin, Anna C Balazs*
1:06PM - 1:18PM	G33.00007: Adaptive Networks: Erosion of Microfluidic Channels *Julien Bouvard, Swarnavo Basu, Charlott Leu, Onurcan Bektas, Joachim Rädler, Karen Alim, Gabriel Amselem*
1:18PM - 1:30PM	G33.00008: Influence of Stimulus-Responsive Swelling on Suspension Properties of Ionic Microgels *Mariano E Brito, Gerhard Nägele, Alan R Denton, Christian L Holm*
1:30PM - 1:42PM	G33.00009: Ordered Pattern Formation in Electro-Responsive Polymer Ionic Liquid Blends *Ashima Choudhury, Pratyush Dayal*
1:42PM - 1:54PM	G33.00010: Sequence and Molecular Weight Controlled Phase Behavior of Liquid Crystalline Oligomers *Chun Lam Clement Chan, Emily C Ostermann, Shawn M Maguire, Jake H Cedar, Emily C Davidson*
1:54PM - 2:06PM	G33.00011: Water Vapor Formation from Hydrogels via Photothermal Heating of Nanoparticles *Erin Crites, Jason Bochinski, Laura Clarke*
2:06PM - 2:18PM	G33.00012: Tuning Non-Ergodic Aging in Hydrogels Using Environment-Dependent Interfacial Chemistry *Samya Sen, Anthony C Yu, Changxin Dong, Andrea I D'Aquino, Eric A Appel*
2:18PM - 2:30PM	G33.00013: Modelling the Effect of Phase Behaviour on the Deformation in Light-Activated Shape Memory Polymer Blends *Surbhi Khewle, Pratyush Dayal*

Tuesday, March 5, 2024 2:00 pm – 3:00 pm

Session 3D: DSOFT/DBIO/DPOLY/GSNP Early Career Meet & Greet
Sponsoring Units: DSOFT DPOLY DBIO GSNP

Room: 200F

Tuesday, March 5, 2024 3:00 pm – 6:00 pm

Session K25: Advanced Characterization of Polymers: Morphology, Interfaces, and Dynamics
Sponsoring Units: DPOLY
Chair: Gregory Su, Lawrence Berkeley National Laboratory; Xiaodan Gu, University of Southern Mississippi
Room: 101F

3:00PM - 3:12PM	K25.00001: Solving the Spatial Distributions of Multicomponent Polymer Thin Films with Resonant Soft X-ray Scattering *Julia Murphy, Kristof Toth, Daniel F Sunday, Eliot H Gann, Dean M DeLongchamp*
3:12PM - 3:24PM	K25.00002: Quantifying Ion Distribution Profiles in Block Copolymers via Resonant Soft X-ray Scattering *Priyanka M Ketkar, Daniel F Sunday, Eliot H Gann, R. Joseph Kline, Dean M DeLongchamp*
3:24PM - 3:36PM	K25.00003: Label-Free Characterization of Aqueous Micelle Nanostructures via Novel Liquid in-situ Resonant Soft X-ray Scattering (RSoXS) *Devin Grabner, Phillip D Pickett, Terry McAfee, Brian A Collins, Charles L McCormick*
3:36PM - 3:48PM	K25.00004: Depth-Dependent Orientation in Thin Films of Bottlebrush Block Copolymers *Zhan Chen, Xindi Li, Mingqiu Hu, Xuchen Gan, Yashodha Kahandawaarachchi, Hong-Gyu Seong, Todd S Emrick, William T Heller, Javid Rzayev, Thomas P Russell*
3:48PM - 4:00PM	K25.00005: Single-Molecule Dynamics of Confined Branched Polymers *Louis Wang, Danielle J Mai*
4:00PM - 4:12PM	K25.00006: Nanoparticle Diffusion Coefficients at Liquid Interfaces Measured by SEM Single Particle Tracking *David Hoagland, Zachary Fink, Paul Y Kim, Satyam Srivastava, Alexander E Ribbe, Thomas P Russell*
4:12PM - 4:24PM	K25.00007: Depth-Dependent Local Shear Modulus Profile Attained from Analyzing QCM Data with a New Transfer-Matrix Model Across a Polymer-Polymer Interface *Alexander A Couturier, Justin C Burton, Connie B Roth*
4:24PM - 5:00PM	K25.00008: Resonant Tender X-ray Scattering of Semiconducting Polymers *Invited Author: Christopher McNeill*
5:00PM - 5:12PM	K25.00009: Polarized Resonant Soft X-ray Scattering for Organic Photovoltaics *Dean M DeLongchamp*
5:12PM - 5:24PM	K25.00010: Combing DFT Based Optical Models with Resonant X-ray Reflectivity to Measure Orientation at Buried Interfaces *Harlan Heilman, Fred Woodall, Brian A Collins*
5:24PM - 5:36PM	K25.00011: In Situ X-ray tools for Characterizing Vacuum Thermally Evaporated Small Molecules for Use in Organic Photovoltaics *Olivia M Gough, Moritz K Riede, Zhenlong Li, Gregory Su, Pascal Kaienburg*
5:36PM - 5:48PM	K25.00012: Hybrid Unified Analysis of Hierarchical Scattering *Greg Beaucage*
5:48PM - 6:00PM	K25.00013: Quantitative X-ray Scattering and Reflectivity Measurements of Polymer Thin Films with 2D Detectors *Mingqiu Hu, Xuchen Gan, Zhan Chen, Hong-Gyu Seong, Todd S Emrick, Thomas P Russell*

Tuesday, March 5, 2024 3:00 pm – 6:00 pm

Session K26: John H. Dillon Medal Symposium

Sponsoring Units: DPOLY
Chair: Monica Olvera De La Cruz, Northwestern University
Room: 101G

3:00PM - 3:36PM	K26.00001: John H. Dillon Medal: Developing Straightforward Models to Address Complex (Coacervate) Problems in Sequence-Defined Polyelectrolytes *Invited Author: Charles E Sing*
3:36PM - 3:48PM	K26.00002: Designing Peptide-Based Complex Coacervates for Protein and Virus Encapsulation *Sarah L Perry, Arvind Sathyavageeswaran, Pratik U Joshi, Claire Decker, Xianci Zeng, Shannon McIntosh, Caryn L Heldt*
3:48PM - 4:00PM	K26.00003: Active Magnetically Assembled Colloidal Chains: From Fundamentals to Applications *Alfredo Alexander-Katz*
4:00PM - 4:12PM	K26.00004: Salt-Dependent Phase Re-entry of Weak Polyelectrolyte Complexes: from Associative to Segregative Liquid-Liquid Phase Separation *Ronald G Larson, Huiling Li, Ying Liu, Fujie N Lan, Mohsen Ghasemi*
4:12PM - 4:24PM	K26.00005: Isothermal Phase Separation of Cleavable Elastin-Like Polypeptides *Brendan M Wirtz, Allison G Yun, Xiaojing J Gao, Danielle J Mai*
4:24PM - 4:36PM	K26.00006: Predictive Multiscale Modeling of Polymer Formulations *Glenn H Fredrickson*
4:36PM - 4:48PM	K26.00007: Conformation Statistics of Ideal Ribbon-Like Chains *Jian Qin, Wesley Michaels, Andrew Spakowitz*
4:48PM - 5:00PM	K26.00008: AI-Guided Closed-Loop Discovery of Photostable Light-Harvesting Molecules *Charles M Schroeder*
5:00PM - 5:12PM	K26.00009: Complex Coacervation of Proteins and Protein Mixtures *Allie Obermeyer, So Yeon Ahn*
5:12PM - 5:24PM	K26.00010: Ionic Conductivity in Salt-Doped Polymers: Combined Effects of Temperature and Salt Concentration *Zhen-Gang Wang, Alexandros Tsamopoulos*
5:24PM - 5:36PM	K26.00011: Imaging the Conformation and Dynamics Single Polymers in Bulk Environments *Muzhou Wang*
5:36PM - 5:48PM	K26.00012: Theory of Ion-Mediated Changes of Structural Relaxation and Vitrification in Polymerized Ionic Liquids *Ken S Schweizer, Ankita Das*
5:48PM - 6:00PM	K26.00013: Self-Assembled Water Channels in Fluorine-Free Polymers for Fast Proton Conductivity *Karen I Winey, Solmi Oh, Max S Win, Justin G Kennemur, Amalie L Frischknecht*

Tuesday, March 5, 2024 3:00 pm – 6:00 pm

Session K32: Polymer Composites and Nanocomposites III: Dynamics

Sponsoring Units: DPOLY

Chair: Robert Ferrier, Michigan State University; Jensen Sevening, Pennsylvania State University

Room: 102D

3:00PM - 3:36PM	K32.00001: How Ultrasmall Nanoparticles Influence Polymer Dynamics in Different Length Scales *Walter W Young, Reika Katsumata*
3:36PM - 3:48PM	K32.00002: On the Rheological Properties of Polymer Nanocomposites *Spiros H Anastasiadis, Thaleia-Michaela Chatzaki, Sokratis Kogchylakis, Dimitris Vlassopoulos, Kiriaki Chrissopoulou*
3:48PM - 4:00PM	K32.00003: Polymer-Filler Competition-Driven Reinforcement Beyond the Payne Effect in Elastomeric Nanocomposites *Pierre Kawak, Harshad Bhapkar, David S Simmons*
4:00PM - 4:12PM	K32.00004: Effect of Interfacial Energy on Capillary Infiltration of Entangled Polymers into Nanoporous Gold *Weiwei Kong, Anastasia Neuman, Daeyeon Lee, Robert A Riggleman, Russell J Composto*
4:12PM - 4:24PM	K32.00005: Capillary Rise Infiltration of Copolymers into Confined Packings *Madeline Maurer, Anastasia Neuman, Taeyoung Heo, Daeyeon Lee, Robert A Riggleman*
4:24PM - 4:36PM	K32.00006: Nanoparticle Diffusion in Polymer Nanocomposite Melts *Kaitlin Wang, Russell J Composto, Karen I Winey*
4:36PM - 4:48PM	K32.00007: Uncovering the Structure-Dynamics-Property Relationship of Reinforced Rubbers *Xiaoran Wang, Leonidas Tsapatsaris, Zhixing Huang, Elena Stephanie, Lutz Wiegart, Tomomi Masui, Hiroyuki Kishimoto, Maya Endoh, Tadanori Koga*
4:48PM - 5:00PM	K32.00008: Synthesis and Rheological Properties of Polymer Loop-Grafted Nanoparticle Composites *Yi Feng, Pinar Akcora, Christopher Mbonu*
5:00PM - 5:12PM	K32.00009: Dielectric Properties of Waterborne Polyelectrolyte Grafted Nanoparticles Films Sustainable Energy Storage Media *Hala Farghaly, Alamgir Karim, Maninderjeet Singh, Pinar Akcora, Ruhao Li*
5:12PM - 5:24PM	K32.00010: Phase-Behavior and Diffusion in Polymer-Grafted Nanoparticle Films *Akhtar Gul, Alamgir Karim*
5:24PM - 5:36PM	K32.00011: The Effect of Chain Stiffness on the Dynamics of Polymer/Star Polymer Composites *Max Hanrahan, Cesar A Castro, Jinpeng Fan, Jack F Douglas, Francis W Starr*
5:36PM - 5:48PM	K32.00012: Capillary Filling Dynamics of Entangled Polymers Under Moderate Confinement *Anastasia Neuman, Weiwei Kong, Laetitia Moore, Russell J Composto, Daeyeon Lee, Robert A Riggleman*
5:48PM - 6:00PM	K32.00013: Investigating Multi-Component Polymer Grafted Nanoparticles with Bidisperse Polymer Grafts using Molecular Modelling *Subhadeep Pal, Sinan Keten*

Tuesday, March 5, 2024 3:00 pm – 6:00 pm

Session K33: Programmed Responsive Polymers and Soft Matter II

Sponsoring Units: DPOLY

Chair: Jinhye Bae, University of California, San Diego

Room: 102E

3:00PM - 3:12PM	K33.00001: Effect of Alkyl Spacer Length of Photoisomerizable Surfactant on Light-Responsive Shape Transition of Block Copolymer Particles *Jinwoo Kim, Kang Hee Ku, Bumjoon J Kim*
3:12PM - 3:24PM	K33.00002: pH-Responsive Swelling of Poly(methacrylic acid) Multilayer Hydrogels through Controlling Polyacid Chain Conformations *Pavel Nikishau, Veronika Kozlovskaya, Olga Khaybullina, Eugenia Kharlampieva*
3:24PM - 3:36PM	K33.00003: Large Caloric Effects in Liquid Crystal-Based Materials for New Heat-Management Technologies *Brigita Rozic, Dejvid Cresnar, Matic Morgan, Andraz Resetic, Marta Lavric, Bostjan Zalar, Gregor Skacej, Samo Kralj, Zdravko Kutnjak*
3:36PM - 3:48PM	K33.00004: Predicting Cyclodextrin Assembly on End-Functionalized Polyethylene Glycol for Designing Polypseudorotaxane Hydrogels *Cameron D Smith, Wenlin Zhang*
3:48PM - 4:00PM	K33.00005: Protein interactions that control calcium oxalate kidney stone formation *Jeffrey A Wesson, Matthew V Tirrell, Michael D Ward, Roman Zenka*
4:00PM - 4:12PM	K33.00006: Understanding the Genetic Fusion of Thermoresponsive Polypeptides Mediating Hierarchical Nanostructure Assembly of Coiled-Coil Bundlemers via Molecular Dynamic Simulations *Tianren Zhang, Sai S Patkar, Yao Tang, Bin Wang, Weiran Xie, Kristi Kiick, Jeffery G Saven, Darrin J Pochan*
4:12PM - 4:24PM	K33.00007: Reconfigurable Liquid Droplet Interface Bilayer *Xuefei Wu, Thomas P Russell*
4:24PM - 4:36PM	K33.00008: Gelation Behavior of Reversible Diels–Alder Networks based on Precursor Design and the Addition of Multifunctional Microspheres *Gaeun Kim, Brandon T McReynolds, Samantha Knight, Sanchari Chowdhury, John D McCoy, Youngmin Lee*
4:36PM - 4:48PM	K33.00009: Exploring the Role of Conserved Dynamic Covalent Bonds in Modulating Phase Behavior in Block Copolymers *Yun-Ju Chen, Yu-Hsuan Tsao, Christopher M Evans, Charles E Sing*
4:48PM - 5:00PM	K33.00010: Covalent Adaptable Networks with rapid UV Response Based on Reversible Thiol-ene Reactions in Silicone Elastomers *Miao Huo, David R Clarke, Jerry Hu*
5:00PM - 5:12PM	K33.00011: Epoxy Adhesive with Dynamic Covalent Bonds as a Fully Removable Adhesive via Photothermal Effect of Titanium Nitride Plasmonic Nanoparticles *Samantha (Lindholm) Knight, Gaeun Kim, Nicole Penners, Sanchari Chowdhury, John D McCoy, Youngmin Lee*
5:12PM - 5:24PM	K33.00012: Decoding Repetitive Proteins to Program Ion-Responsive Biopolymers *Invited Author: Danielle J Mai*

Wednesday, March 6, 2024 8:00 am – 11:00 am

Session M06: Designing Soft Responsive Polymer Networks: Recent Advances and Challenges

Sponsoring Units: DSOFT DPOLY

Chair: Olga Kuksenok, Clemson University

Room: L100FG

8:00AM - 8:36AM	M06.00001: Responsive Biomimicking Materials *Invited Author: Monica Olvera De La Cruz*
8:36AM - 9:12AM	M06.00002: Chemical Design of Stimuli Responsive Microgels: Recent Developments and Trends *Invited Author: Andrij Pich*
9:12AM - 9:48AM	M06.00003: Emergent Collective Behavior of Platelets in Blood Clotting: Lessons for Designing Active Polymeric Networks *Invited Author: Alexander Alexeev*
9:48AM - 10:24AM	M06.00004: Amphiphilic Polymer Conetworks: Experiment and Theory *Invited Author: Costas S Patrickios*
10:24AM - 11:00AM	M06.00005: Emergent Mechanics of Dynamic Polymer Network: Viscoelasticity, Damage, and Remodeling. *Invited Author: Franck J Vernerey*

Wednesday, March 6, 2024 8:00 am – 11:00 am

Session M26: Enabling Early Career Polymer Physics Researchers

Sponsoring Units: DPOLY
Chair: Bryan Boudouris, Purdue University
Room: 101G

8:00AM - 8:36AM	M26.00001: Reflections on Enabling Early Career Polymer Physicists and Session Motivation *Invited Author: Bryan W Boudouris*
8:36AM - 8:48AM	M26.00002: Macromolecular Engineering of Sustainable Polymers *Chuanbing Tang*
8:48AM - 9:00AM	M26.00003: Hierarchical Polymeric Materials Inspired by Nature *LaShanda T Korley*
9:00AM - 9:12AM	M26.00004: Journey in polymer physics with the NSF Polymers Program *Jan Genzer*
9:12AM - 9:24AM	M26.00005: Polymerizations with Particles at Fluid-Fluid Interfaces *Emily Pentzer*
9:24AM - 9:36AM	M26.00006: Symmetry Breaking and Polymer Self-Assembly in the Presence of Liquid Crystals Chinedum Osuji
9:36AM - 9:48AM	M26.00007: Understanding penetrant transport in dense, dynamic polymer networks *Christopher M Evans, Junrou Huang, Grant S Sheridan, Nabil Ramlawi, Randy H Ewoldt*
9:48AM - 10:00AM	M26.00008: Responsive polymer network interfaces: From mechanical surface instabilities to ionic heterojunctions *Ryan Hayward*
10:00AM - 10:12AM	M26.00009: Measurement of Real Contact Area and Its Consequences on Adhesion and Friction *Ali Dhinojwala*
10:12AM - 10:24AM	M26.00010: Polyelectrolyte Multilayers and Complexes: Glass Transitions and Dynamics *Jodie Lutkenhaus*
10:24AM - 10:36AM	M26.00011: Controlling Polymer Assembly with Precise Design *Rachel A Segalman, Scott Shell, Songi Han, Shawn Mengel, Audra J DeStefano, Sally Jiao*
10:36AM - 10:48AM	M26.00012: Nanoporous Materials from Ordered and Disordered Block Polymers *Marc A Hillmyer*
10:48AM - 11:00AM	M26.00013: Quantifying the effects of local structure and dynamics on ion transport in polymer electrolytes *Thomas H Epps*

Wednesday, March 6, 2024 8:00 am – 11:00 am

Session M32: Transport and Separation Phenomena in Polymer Membranes and Molecular Materials: Experiments

Sponsoring Units: DPOLY

Chair: Matthew Ryder, Oak Ridge National Laboratory; Santanu Roy, Oak Ridge National Laboratory

Room: 102D

8:00AM - 8:12AM	M32.00001: Impact of ion mobility on the CO_2 solubility in ionic polymers *Santanu Roy, Vera Bocharova, Dengpan Dong, Vyacheslav Bryantsev, Shannon Mahurin, Joshua T Damron, Seung Pyo Jeong*
8:12AM - 8:24AM	M32.00002: The influence of polynorbornene backbone structure on ion clustering, water uptake, and ion transport *Mincheol Kim, Zhongyang Wang, Mrinmay Mandal, Ruilin Dong, Kai Wang, Paul A Kohl, Shrayesh Patel, Paul F Nealey*
8:24AM - 8:36AM	M32.00003: Ion transport in weak polyelectrolyte membranes at varying external pH *Yongha Kim, Ralph H Colby, Hee Jeung Oh*
8:36AM - 8:48AM	M32.00004: Interplay of backbone rigidity and water content on ion/ion selectivity in hydrated polymer membranes *Paul R Irving, Harnoor S Sachar, Nico Marioni, Everett S Zofchak, Zidan Zhang, Benny D Freeman, Venkatraghavan Ganesan*
8:48AM - 9:00AM	M32.00005: Electrostatic Funneling in Ionic Transport Through Solid Porous Membranes *Joan M Montes de Oca, Johnson Dhanasekaran, Juan J De Pablo*
9:00AM - 9:12AM	M32.00006: Impact of PEGMA as a blocking group in ion exchange membranes for CO_2 reduction product crossover: Electrochemical Cell Applications. *Antara Mazumder, Bryan S Beckingham*
9:12AM - 9:24AM	M32.00007: Ionic drug transport in charged biosponge polymers to capture toxic chemotherapy drugs before they spread through the body *Hee Jeung Oh*
9:24AM - 9:36AM	M32.00008: Mixed binary alkali halide salt transport in PEO systems *Aubrey Quigley, Everett S Zofchak, Nathaniel A Lynd, Benny D Freeman*
9:36AM - 9:48AM	M32.00009: A Diafiltration Apparatus for High-Throughput Characterization of Transport Through Polymer Membranes *Jonathan A Ouimet, Laurianne Lair, Xinhong Liu, Alexander W Dowling, William A Phillip*
9:48AM - 10:00AM	M32.00010: Evidence for pressure-induced diffusion of solvent in dense polymer membranes *Kevin Reimund, Rahul Sujanani, Jorge Hernandez, Paul R Irving, Kristofer Gleason, Manish Kumar, Benny D Freeman*
10:00AM - 10:12AM	M32.00011: Super-resolution imaging reveals resistance to mass transfer in functionalized stationary phases *Ricardo Monge Neria, Lydia Kisley, Muhammad Zeeshan, Aman Kapoor, Burcu Gurkan, Christine E Duval, Rachel A Saylor*
10:12AM - 10:24AM	M32.00012: Selective ionic transport in zwitterion-functionalized nanopores *Harnoor S Sachar, Everett S Zofchak, Nico Marioni, Zidan Zhang, Tyler J Duncan, Venkatraghavan Ganesan*
10:24AM - 10:36AM	M32.00013: The Effect of Crosslinker Concentration on Drug Release Kinetics of Thermo-Responsive, Lignin-Based Soft Composites *Missoury Wolff, Eric M Davis*
10:36AM - 10:48AM	M32.00014: Polymer Architecture Induced Trade-off Between Conductivities and Transference Numbers in Salt-doped Polymeric Ionic Liquids *Zidan Zhang, Nico Marioni, Harnoor S Sachar, Venkatraghavan Ganesan*

10:48AM - 11:00AM	M32.00015: Effects of electrostatic correlations on charge transport in single-ion conducting polymer electrolytes *Colin Gillespie, Jan-Michael Y Carrillo, Robert A Riggleman, Rajeev Kumar*

Wednesday, March 6, 2024 8:00 am – 11:00 am

Session M33: Dynamics of Polymers and Polyelectrolytes I

Sponsoring Units: DPOLY

Chair: Naresh Osti, Oak Ridge National Laboratory; Laura Stingaciu, Oak Ridge National Laboratory

Room: 102E

8:00AM - 8:12AM	M33.00001: Elucidating nanoparticle reinforcing effects through low-volume chemical coupling as explored by coarse-grained molecular dynamics *Yawei Gao, Nihal Kanbargi, Joshua T Damron, Logan T Kearney, Jan Michael Carrillo, Jong Keum, Michael Toomey, Bobby Sumpter, Amit K Naskar*
8:12AM - 8:24AM	M33.00002: Electrophoretic translocation of star-shaped polymers in single solid-state nanopore *Kuo Chen, Murugappan Muthukumar*
8:24AM - 8:36AM	M33.00003: Role of the Brush Sizes and Sidechain architecture on Linear Polymer Bottlebrushes: an atomistic simulation. *Tanmay Sarkar Akash, Raashiq Ishraaq, Siddhartha Das*
8:36AM - 8:48AM	M33.00004: Nanoscale dynamics of self-assembled lipid nanoparticles via SANS *Shayna Hilburg, Lilo Pozzo*
8:48AM - 9:00AM	M33.00005: Macromolecular properties and interactions of proteins and polysaccharides determine the rheology of real and vegan food formulations *Karim Al Zahabi, Lena Hassan, Ramiro Maldonado, Vivek Sharma*
9:00AM - 9:36AM	M33.00006: Unlocking the Dynamics of a Novel Natural Polymer-Based Material for Multiple Applications *Invited Author: Ngoc Nguyen*
9:36AM - 9:48AM	M33.00007: Direct Visualization of Flow-induced Scission of DNA *Clive Onyango, Xiang Cheng, Kevin D Dorfman*
9:48AM - 10:00AM	M33.00008: Behavior of two knotted DNA molecule under nanochannel confinement *Runfang Mao, Kevin D Dorfman*
10:00AM - 10:12AM	M33.00009: Topology-Driven Dynamics and Randomness Control in Prime Knots *Hyo Jung Park, Anna Lappala*
10:12AM - 10:24AM	M33.00010: Computational Study of the Morphology of Benzimidazolium and Imidazolium Anion Exchange Membranes *Adrian Yeung, Eric M Schibli, Barbara J Frisken*
10:24AM - 10:36AM	M33.00011: A Comprehensive Study of Azole Containing Systems with High Proton Conductivity under Anhydrous Conditions *Zitan Huang, Michael Hickner, Michelle Lehmann, Ralph H Colby, Tomonori Saito*
10:36AM - 10:48AM	M33.00012: Molecular Dynamics study on the dielectric relaxation of low relative permittivity and dissipation factor polymers *Hector Allan Pérez-Ramírez, Luis A Padilla, Su-Mi Hur*
10:48AM - 11:00AM	M33.00013: Enhanced ion conduction by decoupling ion transport from polymer segmental relaxation in single-ion-conducting, polymer blend electrolytes *Mengying Yang, Thomas H Epps*

Wednesday, March 6, 2024 11:30 am – 2:30 pm

Session N00: Poster Session II (11:30am-2:30pm CST)
Room: Hall BC

Full Poster List on Final Pages of the Booklet

Wednesday, March 6, 2024 11:30 am – 2:30 pm

Session N26: Surfaces, Interfaces, Thin Films, and Coatings

Sponsoring Units: DPOLY

Chair: Kailong Jin, Arizona State University

Room: 101G

11:30AM - 11:42AM	N26.00001: Explaining giant apparent pKa shifts in weak polyelectrolyte brushes *David Beyer, Peter Košovan, Christian L Holm*
11:42AM - 11:54AM	N26.00002: Patterning rigid microparticles on soft adhesives for control of interfacial properties *Naomi Deneke, Natalie Stingelin, Blair Brettmann*
11:54AM - 12:06PM	N26.00003: The Molecular Origin and Number of Interfacial Interactions Dictate the Adhesion of Bioinspired Adhesives *Amal Narayanan, Sukhmanjot Kaur, Ali Dhinojwala, Abraham Joy*
12:06PM - 12:18PM	N26.00004: Multiscale Molecular Modeling of polymer-based additive manufacturing *Yihan Huang, John J Karnes, Bradley S Harris, Caitlyn C Cook, Todd H Weisgraber, Maxim Shusteff, Roland Faller*
12:18PM - 12:30PM	N26.00005: Environmental effects on the spatio-temporal evolution of plasma-wrinkled PDMS thin films *Zain Ahmed, Gunjan Tyagi, Joao T Cabral*
12:30PM - 12:42PM	N26.00006: Influence of Polymer Structure on E-Beam Lithography: Minimizing Line Edge Roughness with Bottlebrush Polymers *Seungjae Hong, Chaeeon Kim, Seungwoo Lee, Joona Bang*
12:42PM - 12:54PM	N26.00007: Achieving High Permittivity Paraelectric Behavior in liquid crystalline Mesogen-Free Sulfonylated comb-shaped polymers *Jiahao Huang*
12:54PM - 1:06PM	N26.00008: Ionoelastomers at Electrified Interfaces: Differential Electric Double Layer Capacitances of Cross-Linked Polymeric Ions and Mobile Counterions *Heewoon Shin*
1:06PM - 1:18PM	N26.00009: Investigating the effect of sidechains on self-assembly of semiconducting polymer using a multiscale modeling approach *Zhihao Feng, Jinwon Cho, Junhe Chen, Omar Allam, Seung Soon Jang*
1:18PM - 1:30PM	N26.00010: Effect of coating on the deformation behavior of single-crystal sapphire during ultra-precision machining *Woo Kyun Kim, Dalei Xi, Yiyang Du, Aditya Nagaraj, Suk Bum Kwon, Dae Nyoung Kim, Rui Liang, Sangkee Min*
1:30PM - 1:42PM	N26.00011: Pressure Dependence of Polymer Surface Tension under Vacuum for Block Copolymer Nanopatterning. *Thanmayee Shastry, Aum Sagar Panda, Jiayu Xie, An-Chang Shi, Rong-Ming Ho*
1:42PM - 1:54PM	N26.00012: Interdiffusion of Short Chain Associative Polymers in Thin Films: MD Simulation Study *Rosita Sivaraj, Dvora Perahia, Gary S Grest*
1:54PM - 2:06PM	N26.00013: Modeling Competition between Phase Separation and Polymerization under the Effect of Polydispersity *Hyeonmin Jeong*
2:06PM - 2:18PM	N26.00014: Characterizing Water Structure at Diamond/Water Interface using a combination of MD Simulations, DFT Calculations and Spectroscopy *Abdol Hadi Mokarizadeh, Nityanshu Kumar, Ali Dhinojwala, Mesfin Tsige*

Wednesday, March 6, 2024 11:30 am – 2:30 pm

Session N32: Transport and Separation Phenomena in Polymer Membranes and Molecular Materials: Computation

Sponsoring Units: DPOLY
Chair: Lilin He, Oak Ridge National Laboratory
Room: 102D

11:30AM - 12:06PM	N32.00001: Predicting Covalent Organic Framework (COF) Membrane Performance by Mapping Molecular Interactions in Mixed Solvents via Atomistic Modeling *Invited Author: Katie D Li-Oakey*
12:06PM - 12:18PM	N32.00002: Ion-ion Separations in Biomimetic Water Channels *Tyler J Duncan, Harekrushna Behera, Paul R Irving, Nico Marioni, Harnoor S Sachar, Meron Y. Tadesse, Zidan Zhang, Everett S Zofchak, Manish Kumar, Venkatraghavan Ganesan*
12:18PM - 12:30PM	N32.00003: Characterization of ion binding guided by ΔΔG and mobility calculations in ethylene oxide-rich environments *Ramón González-Pérez, Alexander W Dowling, William A Phillip, Jonathan K Whitmer*
12:30PM - 12:42PM	N32.00004: Studies of Li ion conduction mechanism for zwitterionic polymer electrolytes using molecular dynamics simulations *Mizuki Kamata, Amalie L Frischknecht, Kris T Delaney, Glenn H Fredrickson*
12:42PM - 12:54PM	N32.00005: Gas permeance in polymer membranes: computational approaches near and far from ideal behavior *Samuel J Layding, Gabrielle Dobkin, Robert A Riggleman*
12:54PM - 1:06PM	N32.00006: Role of hydration on ion transport in the transition from dry to wet salt-doped PEO *Nico Marioni, Oscar Nordness, Rahul Sujanani, Akhila Rajesh, Zidan Zhang, Benny D Freeman, Rachel A Segalman, Raphaële J Clément, Venkatraghavan Ganesan*
1:06PM - 1:18PM	N32.00007: Microscopic theory of the effects of penetrant shape on activated dynamics and selectivity in polymer melts and crosslinked networks *Baicheng Mei, Kenneth S Schweizer*
1:18PM - 1:30PM	N32.00008: Investigating the effect of hydration ratios on hydroxide conductivity in anion exchange membranes from non-reactive molecular dynamics simulations *Janani Sampath*
1:30PM - 1:42PM	N32.00009: Impact of Morphology on Water Dynamics in Hydrated Copolymers for Proton Exchange Membranes *Max S Win, Amalie L Frischknecht, Karen I Winey, Victoria S Lee*
1:42PM - 1:54PM	N32.00010: Finding non-aqueous proton conductors for polymer-based electrolytes using density functional theory *Yifan Liu, Valentino R Cooper*
1:54PM - 2:06PM	N32.00011: Computational Analysis of Small Angle Scattering Measurements on Polymer Membranes *Stephen Kronenberger, Nitant Gupta, Jason Madinya, Arthi Jayaraman*
2:06PM - 2:18PM	N32.00012: Polyethylene-block-polyacrylate based block copolymers for high ionic conductivity polymer electrolytes *Maninderjeet Singh, Alamgir Karim, Eva Harth, Siddharaj Dabade*

Wednesday, March 6, 2024 11:30 am – 2:30 pm

Session N33: Dynamics of Polymers and Polyelectrolytes II

Sponsoring Units: DPOLY

Chair: Benjamin Paren, Stevens Institute of Technology; Naresh Osti, Oak Ridge National Laboratory

Room: 102E

11:30AM - 11:42AM	N33.00001: Charge Asymmetry Suppresses Coarsening Dynamics in Liquid–Liquid Phase Separation of Polymer Coacervates *Shensheng Chen, Zhen-Gang Wang*
11:42AM - 11:54AM	N33.00002: Fusion of block copolymer micelles in ionic liquids *Ali Sattari, Timothy P Lodge*
11:54AM - 12:06PM	N33.00003: Solvent Quality Exponent Inferred from Extensional Relaxation Times of Unentangled Polymer Solutions *Vivek Sharma, Jelena Dinic, Carina Martinez, Cheryl L Slykas, Damien Vadillo*
12:06PM - 12:18PM	N33.00004: Zwitterionic Copolymeric Gel for High-performance Ionic Thermoelectric Generators *Yong Min Kim*
12:18PM - 12:30PM	N33.00005: Transport of tracer particle in flowing semidilute polymer solutions *Neha Tyagi*
12:30PM - 12:42PM	N33.00006: Simulations of swollen, self-assembled single-ion-conducting multiblock copolymers *Mark J Stevens, Amalie L Frischknecht, Daniel L Vigil, Benjamin T Ferko, Karen I Winey*
12:42PM - 12:54PM	N33.00007: Ionic Conductivity of Highly-Asymmetric Block Copolymers Based on Polymer Ionic Liquids *Samuel K Adotey, Gila E Stein, Yangyang Wang*
12:54PM - 1:06PM	N33.00008: Improving Lithium Conductivity in Surfactant-Like Multiblock Copolymers through Selective Solvent Swelling *Benjamin T Ferko, Daniel L Vigil, Mark J Stevens, Amalie L Frischknecht, Karen I Winey*
1:06PM - 1:18PM	N33.00009: Investigation of the Adsorption Behavior of Sodium Carboxymethyl Cellulose on Carbon Black Towards the Understanding of Li-ion Battery Slurry Stability *Eunheui Gwag, So Youn Kim*
1:18PM - 1:30PM	N33.00010: Influences of Chain Polarity and Molecular Weight on Ion and Polymer Dynamics in Polymerized Ionic Liquids *Jester N Itliong, Amalie L Frischknecht, Mark J Stevens, Issei Nakamura*
1:30PM - 1:42PM	N33.00011: Enhanced Ion Conductivity of Poly(ionic Liquid)-Grafted Nanoparticle-based Hybrid Electrolytes *Ruhao Li, Pinar Akcora, Deniz Bulucu*
1:42PM - 1:54PM	N33.00012: Including stiffness and glass transition temperature differences in a coarse-grained model of salt-doped block copolymer electrolytes *Yuanhao Zhang, Lisa M Hall*
1:54PM - 2:06PM	N33.00013: Control of viscoelasticity and ion transport in dynamic polymer networks using lithium salts

	Christopher M Evans, Seongon Jang, Erick I Hernandez Alvarez, Chen Chen, Paul V Braun, Andre Schleife, Charles M Schroeder
2:06PM - 2:18PM	N33.00014: Effect of concentration on solution state redox activity- A bridge between polymer physics and electrochemistry *Khirabdhi T Mohanty, Jodie Lutkenhaus, Stuart J Rowan, Daniel P Tabor, Juan dePablo, Sheila Keating, Riccardo Alessandri, Aaron Peng, Cheng-Han Li, Cheng-Han Li*
2:18PM - 2:30PM	N33.00015: Effect of Flow on Charge Transport in Semi-Dilute Redox Active Polymer Solutions *Dejuante Walker, Charles E Sing*

Wednesday, March 6, 2024 11:30 am – 2:30 pm

Session N57: 50 Years of Gyroid Structures in Materials and Tissues - in Honor of Alan Schoen I

Sponsoring Units: DSOFT DBIO DPOLY

Chair: Gerd Schroeder-Turk, Murdoch University

Room: 205C

11:30AM - 11:42AM	N57.00001: Functional Block Copolymer Gyroidal Hybrid Nanomaterials *Ulrich Wiesner*
11:42AM - 11:54AM	N57.00002: Stabilizing gyroid structures by blending or asymmetry of high-χ oligomers *J. Ilja Siepmann, Daoyuan Li, Caini Zheng, Mahesh Mahanthappa, Timothy P Lodge, Zhengyuan Shen*
11:54AM - 12:30PM	N57.00003: Gyroid Materials: triply periodic minimal surfaces, skeletal graphs, mesoatoms and crystallographic defects *Invited Author: Edwin L Thomas*
12:30PM - 12:42PM	N57.00004: Conformational and topological correlations in the gyroid morphology formed by non-frustrated triblock copolymers with homopolymers *Natalie Buchanan, Krysia Browka, Lianna Johnson, Hillary Le, Poornima Padmanabhan*
12:42PM - 12:54PM	N57.00005: Metastable Network Phases from Controlled Self-Assembly of High-χ Block Copolymers for Biomimetic Materials *Rong-Ming Ho*
12:54PM - 1:06PM	N57.00006: How does your gyroid grow? A mesoatomic perspective on supramolecular, soft matter network crystals *Gregory M Grason*
1:06PM - 1:18PM	N57.00007: Programmable Self-Assembly of Nanoplates into Bicontinuous Nanostructures *Tomonari Dotera, Hideaki Tanaka, Stephen T Hyde*
1:18PM - 1:30PM	N57.00008: "Inverting" Caspar-Klug design rules for programmable assembly of size-controlled minimal-surface assemblies *Christian Santangelo, Carlos M Duque, Douglas M Hall, Botond Tyukodi, Michael F Hagan, Gregory M Grason*
1:30PM - 1:42PM	N57.00009: A Multiscale Molecular Simulation Approach to Designing DNA Decorated Colloids for Double Gyroid Self-Assembly *Luis A Nieves Rosado, Fernando A Escobedo*
1:42PM - 1:54PM	N57.00010: Role of Interaction Range on the Microstructure and Dynamics of Attractive Colloidal Systems *Deepak Mangal, Safa Jamali*
1:54PM - 2:06PM	N57.00011: Theoretical results for the Gyroid wire system *Birgit B Kaufmann, Ralph Kaufmann, Sergei Khlebnikov*
2:06PM - 2:18PM	N57.00012: Disconnectivity Graphs of Spin Glass Systems on Snub Archimedean (3^2, 4, 3, 4) Lattices *Anil K Katwal, Katja Biswas*

Wednesday, March 6, 2024 3:00 pm – 6:00 pm

Session Q06: Transport and Separation in Polymer Membranes

Sponsoring Units: DPOLY
Chair: Hee Jeung Oh, Pennsylvania State University; Vera Bocharova, Oak Ridge National Lab
Room: L100FG

3:00PM - 3:36PM	Q06.00001: Engineering ion selectivity in polymer membranes *Invited Author: Venkatraghavan Ganesan*
3:36PM - 4:12PM	Q06.00002: Bridging insights between ion transport in battery electrolytes and membranes *Invited Author: Rachel A Segalman*
4:12PM - 4:48PM	Q06.00003: Harnessing Structure-Dependent Separation Behavior of Thin Film Membranes *Invited Author: Santanu Kundu*
4:48PM - 5:24PM	Q06.00004: Understanding Nanoconfinement and Atom-Specific Correlations to Manipulate Molecular and Ion Transport *Invited Author: Louis A Madsen*
5:24PM - 6:00PM	Q06.00005: *P*rocessing and Separation Performance Principles of Zeolitic Imidazolate Framework Membranes *Invited Author: Michael Tsapatsis*

Wednesday, March 6, 2024 3:00 pm – 6:00 pm

Session Q26: Fracture, Yielding, and Failure of Soft Materials

Sponsoring Units: DPOLY

Chair: Shi-Qing Wang, University of Akron; Christopher Barney, University of Akron

Room: 101G

3:00PM - 3:36PM	Q26.00001: Understanding the role of crosslink density and linear viscoelasticity on the shear failure of PSAs *Invited Author: Gabriel E Sanoja, Anthony Arrowood, Mohammad Ansari, Matteo Ciccotti, Rui Huang, Kenneth Liechti*
3:36PM - 3:48PM	Q26.00002: Impact of Topological Defects on Fracture and Fatigue of Polymer Networks *Shaoting Lin*
3:48PM - 4:00PM	Q26.00003: Essence of elastomeric fracture *Zehao Fan , Shi-Qing Wang*
4:00PM - 4:12PM	Q26.00004: Large strain micromechanics of thermoplastic elastomers with random microstructures *Hansohl Cho, Jaehee Lee, Jehoon Moon, Gregory C Rutledge, Mary C Boyce*
4:12PM - 4:24PM	Q26.00005: Unveiling the fracture mechanism for entangled polymer melts under extensional flow with molecular dynamics simulations *Danyang Chen, Michael Rubinstein*
4:24PM - 4:36PM	Q26.00006: Molecular Simulations of Polymer Thin Film Necking: Ductility from Entanglements and Plane Stress Condition *Siteng Zhang, Zhiqiang Cao, Xiaodan Gu, Ting Ge*
4:36PM - 4:48PM	Q26.00007: Predicting failure locations in model end-linked polymer networks *Han Zhang, Robert A Riggleman*
4:48PM - 5:00PM	Q26.00008: Viscoelasticity and the Persson-Brener Model *Kurt R VanDonselaar*
5:00PM - 5:12PM	Q26.00009: Stability of ductile fracture of plastics *Chaitanya Gupta, Asal YousefiSiavoshani, Shi-Qing Wang*
5:12PM - 5:24PM	Q26.00010: Accounting for brittle yielding in soft materials *Simon A Rogers, Krutarth Kamani*
5:24PM - 5:36PM	Q26.00011: Characterization of Near-Wall Effects During the Puncture of Soft Solids *Christopher W Barney, Szabolcs Berezvai, Allison L Chau, Angela A Pitenis, Robert McMeeking, Megan T Valentine, Matthew E Helgeson*
5:36PM - 5:48PM	Q26.00012: Polymers for Impact Mitigation: New Measurements Provide Insights into an Old Problem *Christopher L Soles*
5:48PM - 6:00PM	Q26.00013: Regarding viscoelastic effects in elastomeric fracture *Shi-Qing Wang, Zehao Fan, Asal Siavoshani, Junpeng Wang, Ming-Chi Wang*

Wednesday, March 6, 2024 3:00 pm – 6:00 pm

Session Q33: Dynamics of Polymers and Polyelectrolytes III

Sponsoring Units: DPOLY

Chair: Laura-Roxana Stingaciu, Oak Ridge National Lab; Benjamin Paren, Stevens Institute of Technology

Room: 102E

3:00PM - 3:12PM	Q33.00001: Conformational dynamics of submicron-sized wormlike polyelectrolyte chain in viscous fluid flows *Myung-Suk Chun, Min Sun Yeom*
3:12PM - 3:24PM	Q33.00002: Effect of Homopolymer Length on Relaxation and Structure of Complex Coacervate Core Hydrogel *MoonChul Ryu, SooHyung Choi*
3:24PM - 3:36PM	Q33.00003: Relaxation Dynamics in Polyelectrolyte Aqueous Solutions in Non-linear Shear Flows: A Molecular Dynamics Simulation Study *Shalika D Meedin, Gary S Grest, Dvora Perahia*
3:36PM - 3:48PM	Q33.00004: Triple Screening and Plasmon Mode in Polyelectrolyte Solutions *Rajeev Kumar, Jan-Michael Y Carrillo, Ryan Poling-Skutvik, Murugappan Muthukumar, Amanda B Marciel, Jacinta C Conrad*
3:48PM - 4:00PM	Q33.00005: Dynamics of Polyelectrolytes in Convex Lens-induced Confinement (CLiC) *Brittany K Roopnarine, Svetlana Morozova*
4:00PM - 4:12PM	Q33.00006: Response of a Polyelectrolyte to Shear *Jiang Zhao*
4:12PM - 4:24PM	Q33.00007: The effect of ion exchange capacity on water uptake and ion transport in anion-conducting polyelectrolytes *Ruilin Dong*
4:24PM - 4:36PM	Q33.00008: Behavior of Halide-ion-Screened Cationic Polyelectrolyte Brushes Probed Using All-Atom Molecular Dynamics Simulations *Siddhartha Das, Raashiq Ishraaq*
4:36PM - 4:48PM	Q33.00009: Moving Beyond the Arrhenius Law for Ion Hopping in Glassy Polymer Electrolytes *Catalin Gainaru, Anisur Rahman, Tomonori Saito, Rajeev Kumar, Ken S Schweizer, Alexei P Sokolov*
4:48PM - 5:00PM	Q33.00010: Tailoring Molecular Interactions in Acid-Tethered Polymers *Gyeong-Chan Kang, Moon Park*
5:00PM - 5:12PM	Q33.00011: Crystallinity, Thermal Properties, and Conductivity in Salt-Containing POEM/PEO Polymer Electrolyte Blends *Marissa R Gallmeyer, Hsin-Ju (Jenny) Wu, William M Breining, Whitney S Loo*
5:12PM - 5:24PM	Q33.00012: Chain Topological Effects on Collective Ion Transport in Lamellar Block Copolymer Electrolytes *Kyeong-Jun Jeong, Chang Yun Son*
5:24PM - 5:36PM	Q33.00013: Pinching Dynamics and Extensional Rheology of Polyvinylpyrrolidone Solutions *Louie Edano, Vivek Sharma*

5:36PM - 5:48PM	Q33.00014: Agricultural spray drift control via extensional rheology and viscoelastic pinching *Yash Vidyasagar, Rohini Gupta, Dean A Oester, Francis Choi, Prabodh Varanasi, Vivek Sharma*
5:48PM - 6:00PM	Q33.00015: Conformational properties of cyclic polyelectrolytes in dilute solution *Jaroslaw Paturej, Andrzej Grzyb, Khristine Haydukivska, Aykut Erbas, Jaroslaw S Klos*

Wednesday, March 6, 2024 3:00 pm – 6:00 pm

Session Q57: 50 Years of Gyroid Structures in Materials and Tissues - in Honor of Alan Schoen II

Sponsoring Units: DSOFT DBIO DPOLY

Chair: Gregory Grason

Room: 205CD

3:00PM - 3:12PM	Q57.00001: Breaking symmetry in self-assembled, triply-periodic, supramolecular networks *Michael S Dimitriyev, Xueyan Feng, Edwin L Thomas, Gregory M Grason*
3:12PM - 3:24PM	Q57.00002: The Effect of Orientation in Double-Gyroid Thin Films *Benjamin R Magruder, David C Morse, Christopher J Ellison, Kevin D Dorfman*
3:24PM - 3:36PM	Q57.00003: Shine on you crazy gyroid: Lessons from birds, butterflies and beetles *Vinodkumar Saranathan, Eric R Dufresne, Richard O Prum*
3:36PM - 3:48PM	Q57.00004: Elucidating nanostructural organisation and photonic properties of butterfly wing scales using hyperspectral microscopy *Gerd E Schroeder-Turk, Annie Jessop, Peta Clode, Primoz Pirih, Bodo D Wilts*
3:48PM - 4:00PM	Q57.00005: Molecular dynamics simulation of Guerbet glycolipid self-assembly *Caini Zheng, Soumi Das, Michelle A Calabrese, Theresa M Reineke, Mahesh Mahanthappa, Timothy P Lodge, J. Ilja Siepmann*
4:00PM - 4:12PM	Q57.00006: Gyroid- and Diamond-Type Membrane Configurations of Plants – Where Geometry Defines the Biological Function *Invited Author: Łucja Kowalewska*
4:12PM - 4:48PM	Q57.00007: Reformulation of Elasticity Theory for Lipid Membranes, with Implications for Gyroid Structures *Jonathan V Selinger*
4:48PM - 5:00PM	Q57.00008: Predicting Surfactant Phase Behavior from Molecularly Informed Field Theories *David Zhao, Steven G Arturo, M. Scott Shell, Glenn H Fredrickson*
5:00PM - 5:12PM	Q57.00009: Analysis of stability of cylindrical multicomponent vesicles *Anirudh Venkatesh, Aman Bhargava, Vivek Narsimhan*
5:12PM - 5:24PM	Q57.00010: Bacterial vesicle production scales with outer membrane to cell wall crosslink density *Brian P Weaver, Fengjie Zhao, Christoph A Haselwandter, James Q Boedicker*

Thursday, March 7, 2024 8:00 am – 11:00 am

Session S06: Recent Advances in Polymer Recycling, Upcycling, and Sustainability

Sponsoring Units: DPOLY
Chair: Eleftheria Roumeli, University of Washington; Wenlin Zhang, Dartmouth College
Room: L100FG

8:00AM - 8:36AM	S06.00001: Origins of Secondary Nanoplastics from Semicrystalline Polymers *Invited Author: Sanat K Kumar*
8:36AM - 9:12AM	S06.00002: Polymer-to-polymer chemical transformations to produce specialty plastics from waste polyolefins *Invited Author: Karen I Winey*
9:12AM - 9:48AM	S06.00003: Aliphatic polyester block polymers as compostable tough plastics and resilient elastomers *Invited Author: Marc A Hillmyer*
9:48AM - 10:24AM	S06.00004: Informatics-Driven Design of Solvent Systems and Depolymerizable Polymer Materials for Improved Plastics Recycling *Invited Author: Blair Brettmann*
10:24AM - 11:00AM	S06.00005: Mechanical Recycling of Packaging Feedstocks: Input and Outpu *Invited Author: Scott R Trenor*

Thursday, March 7, 2024 8:00 am – 11:00 am

Session S26: Polymeric Networks, Elastomers, and Gels

Sponsoring Units:
DPOLY
Chair: Melody Morris, UMass Amherst
Room: 101G

8:00AM - 8:12AM	S26.00001: Forensics of Brush Networks *Andrey V Dobrynin, Yuan Tian, Sergei Sheiko*
8:12AM - 8:24AM	S26.00002: Abstract Withdrawn
8:24AM - 8:36AM	S26.00003: Things fall apart: understanding and controlling self-rupture during dynamic swelling *Michelle M Driscoll, Caroline R Szczepanski, Shih-Yuan Chen, Alyssa VanZanten, Samira W Khan*
8:36AM - 8:48AM	S26.00004: Understanding the molecular origin of non-linear rheological behavior in associative polymer networks *Yu Zheng, Devosmita Sen, Bradley D Olsen*
8:48AM - 9:00AM	S26.00005: Kinetics of Polymer Gel Formation Cause Deviation from Percolation Theory in the Dilute Regime *Haley K Beech, Tzyy-Shyang Lin, Devosmita Sen, Dechen Rota, Bradley D Olsen*
9:00AM - 9:12AM	S26.00006: Diffusion-Aggregation Controls Thixotropic Kinetics in Colloidal Gels *Elnaz Nikoumanesh, Ryan Poling-Skutvik*
9:12AM - 9:24AM	S26.00007: Time for Relaxation: Stress Dissipation Mechanisms of PEG Gels During Swelling *Alyssa VanZanten, Shih-Yuan Chen, Samira W Khan, Michelle M Driscoll, Caroline R Szczepanski*
9:24AM - 9:36AM	S26.00008: Quantifying Cyclic Topology in Polymer Networks Using 3D Nets *Devosmita Sen, Bradley D Olsen*
9:36AM - 9:48AM	S26.00009: Coherent States Field Theory for Supramolecular Miktoarm Star Polymers *Dan Sun, Glenn H Fredrickson*
9:48AM - 10:00AM	S26.00010: Effect of polymer architecture on micelle formation, ordering, and gelation in aqueous block polymer blends *Joanna M White, Adelyn A Crabtree, Timothy P Lodge, Michelle A Calabrese, Frank S Bates*
10:00AM - 10:12AM	S26.00011: Independent characterization of the elastic and mixing free energy of density of swellable polymer networks *Qihan Liu, Zefan Shao*
10:12AM - 10:24AM	S26.00012: The impact of molecular architecture on the viscoelastic properties of polymers with phase separated dynamic bonds *Peyton Carden, Sirui Ge, Sheng Zhao, Bingrui Li, Subarna Samanta, Alexei P Sokolov*
10:24AM - 10:36AM	S26.00013: Linking Geometry to Failure: Utilizing Lattice Structures to Tailor the Failure Mode of Soft Gels *Caroline R Szczepanski, Alyssa VanZanten, Emily England, Samira W Khan, Shih-Yuan Chen, Michelle M Driscoll, Giuseppe Buscarnera*

Thursday, March 7, 2024 8:00 am – 11:00 am

Session S32: Advances in Nonlinear and Block Polymers

Sponsoring Units: DPOLY

Chair: Mitchell Wang, Northwestern University

Room: 102D

8:00AM - 8:36AM	S32.00001: Properties and Applications of Reversible Bottlebrush Polymers with a Dithiolane Backbone *Invited Author: Rafael Verduzco*
8:36AM - 8:48AM	S32.00002: Design of surface-active "high energy" bottlebrush copolymer additives for polymer films *Nilesh Charpota, Gila E Stein, Rafael Verduzco, Tanguy Terlier*
8:48AM - 9:00AM	S32.00003: Di-block Ring Polymers as Topological Adhesives at Immiscible Polymer Interfaces *Andrew S Wijesekera, Daniel L Vigil, Gary S Grest, Ting Ge*
9:00AM - 9:12AM	S32.00004: Core-Corona Micelles from Bottlebrush and Star-like Polymers at Liquid-Liquid Interfaces *Carlos Andres A Salinas Soto, Abelardo Ramirez-Hernandez*
9:12AM - 9:24AM	S32.00005: Rectangular Centered Cylinders-in-Undulating-Lamellae from ABC Bottlebrush Block Terpolymers *Shuquan Cui, Elizabeth A Murphy, Wei Zhang, Aristotelis Zografos, Liyang Shen, Frank S Bates, Timothy P Lodge*
9:24AM - 9:36AM	S32.00006: Beyond Linear Polymers: The Role of Bottlebrush Structures in Refining Nanoscale Patterns *Changhyeon Lee, Jihun Ahn, Yeojin Choe, Su-Mi Hur, TAEYI KIM*
9:36AM - 9:48AM	S32.00007: Topological Effect on the Lifshitz point of Block Copolymer/Homopolymer Blends *Anchang Shi, Jiayu Xie*
9:48AM - 10:00AM	S32.00008: Emergence of Disordered Hyperuniformity in Melts of Linear Diblock Copolymers *Duyu Chen, Michael Andreas Klatt, Glenn H Fredrickson*
10:00AM - 10:12AM	S32.00009: Contour Length Fluctuations and Melt Density Control the Universality of Block Copolymers *Artem Petrov, Alfredo Alexander-Katz*
10:12AM - 10:24AM	S32.00010: Efficient Simulation of High-Generation, Dendritic Phytoglycogen Nanoparticles using Dynamical Self-Consistent Field Theory *Benjamin E Morling, John R Dutcher, Robert A Wickham*
10:24AM - 10:36AM	S32.00011: Structure and Dynamics of Highly Segregated Ionizable Triblock co-Polymers in Solutions *John M Bracewell, Dvora Perahia, Gary S Grest*
10:36AM - 10:48AM	S32.00012: Copolymer Vesicles: Thermodynamic Motifs of Self-Assembly and Shear-Induced Reorganization *Radhakrishna Sureshkumar, Senyuan Liu*
10:48AM - 11:00AM	S32.00013: Transition Pathways for Exchange and Fission in Diblock Copolymer Micelles *Samuel L Varner, Kevin D Dorfman, Timothy P Lodge, Zhen-Gang Wang*

Thursday, March 7, 2024 8:00 am – 11:00 am

Session S33: Physics of Polymer Coatings and Thin Films

Sponsoring Units: DPOLY

Chair: Konane Bay, University of Colorado Boulder; Frederick Beyer, DEVCOM Army Research Laboratory

Room: 102E

8:00AM - 8:36AM	S33.00001: Pulling water out of thin air: the remarkable adsorption capacity and water transport of continuous films of covalent organic frameworks *Invited Author: Emil Sandoz-Rosado*
8:36AM - 8:48AM	S33.00002: Droplet-to-particle levitation transition in acoustic levitation: spontaneous breath figure formation and impact on dissolution *Joao T Cabral, William Sharratt, Roisin O'Connell*
8:48AM - 9:00AM	S33.00003: Humidity-induced glass transition of a polyelectrolyte brush creates switchable friction in air *Stephen Merriman, Saranshu Singla, Ali Dhinojwala*
9:00AM - 9:12AM	S33.00004: Molecular Simulation and Machine Learning Analysis on Glass Transition Temperature (Tg) Variability in Polymer Thin Films *Gabriella P Irianti, Hector Allan Pérez-Ramírez, Jihun Ahn, Su-Mi Hur*
9:12AM - 9:24AM	S33.00005: Structure Formation in Thin Cellulose Films *Howard Wang, Pengfei Liu, Wei Li, Tao Zhu, Yoshiharu Nishiyama, Robert M Briber*
9:24AM - 9:36AM	S33.00006: Controlling Impact Mitigation of Nanocellulose Films with Bouligand Nanostructures *Rebecca (Sujin) Lee, Jan Obrzut, Katherine M Evans, Christopher L Soles, Edwin P Chan*
9:36AM - 9:48AM	S33.00007: Humidity Induced Swelling of Sustainable Chitosan Nanocomposite Thin Films for Optical Sensors *Wafa Tonny, Samuel Wallaert, Justin Smith, Venkatesh Balan, Megan L Robertson, Alamgir Karim*
9:48AM - 10:00AM	S33.00008: Anomalous Slow Down in the Kinetics of Capillary Rise Infiltration of Random Copolymers into Packings of Nanoparticles *Taeyoung Heo, Anastasia Neuman, Madeline Maurer, Robert A Riggleman, Daeyeon Lee*
10:00AM - 10:12AM	S33.00009: Development of superhydrophobic polymer nanocomposite coatings with antimicrobial properties *Kiriaki Chrissopoulou, Franceska Gojda, Alexandros Thomos, Erta Petsi, Minas M Stylianakis, Fanourios Krasanakis, Spiros H Anastasiadis*
10:12AM - 10:24AM	S33.00010: High Energy Density of Multi-layer Polymer Nanocomposite Thin Film Dielectric Capacitor loaded with Low volume $BaTiO_3$ Nanoparticles *Ugur Aslan, Alamgir Karim, Maninderjeet Singh*
10:24AM - 10:36AM	S33.00011: Fracturing and Controlled Cracking Path in Topological Maxwell Lattice *Xinyu Wang, Siddhartha Sarkar, Stefano Gonella, Xiaoming Mao*
10:36AM - 10:48AM	S33.00012: The escape transition in a self-avoiding walk model of linear polymers *Esaias J Janse van Rensburg*
10:48AM - 11:00AM	S33.00013: Dry-brush entropic attraction in block-copolymer stabilized drops significantly reduces the drainage time in flow-induced coalescence *Carolina Vannozzi*

Thursday, March 7, 2024 8:00 am – 11:00 am

Session S34: Mechanics and Self-Assembly of Knots and Tangles: From Knitted Fabrics to Polymer Melts

Sponsoring Units: DSOFT GSNP DPOLY

Chair: Michael Dimitriyev, University of Massachusetts Amherst

Room: 102F

8:00AM - 8:12AM	S34.00001: Mechanics of Head-Carrying Textile Rings *Sanika D Barve, Douglas P Holmes*
8:12AM - 8:24AM	S34.00002: Self-Entagled States of Linear Catenanes in Poor Solvent: Knots and Threadings *Pietro Chiarantoni, Cristian Micheletti, Zahra Ahmadian Dehaghani*
8:24AM - 8:36AM	S34.00003: Tying Together Yarn Compression and Knit Fabric Jamming *Sarah E Gonzalez, Michael S Dimitriyev, Sabetta Matsumoto*
8:36AM - 9:12AM	S34.00004: Topological entanglement in polymers *Invited Author: Eleni Panagiotou*
9:12AM - 9:24AM	S34.00005: Twisted Structure of Multifilament Bundles and Sheets *Animesh Biswas, Amit Dawadi, Arshad Kudrolli*
9:24AM - 9:36AM	S34.00006: Capturing corrugation, folding, and multi-stability in knit materials with an elastic continuum finite element model *Helen E Read, Kausalya Mahadevan, Vanessa Sanchez, Katia Bertoldi*
9:36AM - 9:48AM	S34.00007: Exploring the Design Space of Polycatenated Metamaterials *Wenjie Zhou, Sujeeka Nadarajah, Chiara Daraio*
9:48AM - 10:00AM	S34.00008: Geometry and mechanics of densely-packed helical filaments *Benjamin R. Greenvall, Gregory M Grason*
10:00AM - 10:12AM	S34.00009: Programming Knitted ExoSkins to Assist with Knee Joint Motion *Krishma Singal, Samuel P Kirschner, Houriyeh Majditehran, Andrew Schulz, David L Hu, Emily D Sanders, Gregory Sawicki, Sabetta Matsumoto*
10:12AM - 10:24AM	S34.00010: Braiding, twisting, and weaving microscale fibers using capillary forces *Ahmed Sherif, Cheng Zeng, Maya Winters Faaborg, Michael P Brenner, Vinothan N Manoharan*
10:24AM - 10:36AM	S34.00011: Knotting semi-flexible filaments with centrifugal forces *Lucas H P Cunha, Luca Tubiana, Sibani Lisa Biswal, Fred C MacKintosh*

Thursday, March 7, 2024 11:30 am – 2:30 pm

Session T26: Physics-Informed Design of Recycled, Upcycled, and Sustainable Polymers: Recycling and Upcycling via Molecular Design

Sponsoring Units: DPOLY

Chair: Arshiya Bhadu, Pennsylvania State University; Thomas Gartner, Lehigh University

Room: 101G

11:30AM - 12:06PM	T26.00001: TBD *Invited Author: Brett Helms*
12:06PM - 12:18PM	T26.00002: Functional Upcycling of Crosslinked Polyurethanes via Reactive Extrusion Decrosslinking through Catalyzed Carbamate Exchange *Kailong Jin, Jared Nettles, Timothy Long*
12:18PM - 12:30PM	T26.00003: Thermomechanical Recycling of Polymers via Reversible Dynamic Crosslinking *Rahul Karmakar, Sanat K Kumar, Tarak K Patra*
12:30PM - 12:42PM	T26.00004: Engineering photo-responsive recyclability into polymer networks for sustainable 3D printing *Eleanor Quirk, Michael C Burroughs, Brendan M Wirtz, Tracy H Schloemer, Daniel N Congreve, Danielle J Mai*
12:42PM - 12:54PM	T26.00005: Mesoscale modeling of random chain scission in polymer melts *Arefin M. Anik, Vaibhav A Palkar, Igor Luzinov, Olga Kuksenok*
12:54PM - 1:06PM	T26.00006: Molecular Insights into Cleavable Bond-Modified Polyethylene: High-Throughput Simulations for Circular Polymer Design *Archit Chabbi, Maria Ley-Flores, Riccardo Alessandri, Sam Marsden, Isabella Vettese, Stuart J Rowan, Juan J De Pablo*
1:06PM - 1:18PM	T26.00007: Upcycling Plastic Waste into Tough, Fully Recyclable Composites *Po-Hao Lai, Shelby L Hall, Rui Shi, Bryan D Vogt, Enrique D Gomez*
1:18PM - 1:30PM	T26.00008: Title:Upcycling Polymers into Functional Coatings through SLED *Isha Shah, Jouan Yu, Robert A Green-Warren, Jonathan P Singer, Michael Grzenda*
1:30PM - 1:42PM	T26.00009: Tunable Functionalization and Upcycling of Polyolefins to Polyurethanes *Megan L Robertson, Ronard Herrera Monegro, Ramanan Krishnamoorti*
1:42PM - 1:54PM	T26.00010: Modeling Polyolefin Catalytic Cracking with Zeolite Catalysts Under Flow *Sidong Tu, Soumya Ray, Fei Zhou, Valentin Rodionov, Joao M Maia*
1:54PM - 2:06PM	T26.00011: effect of initial molecular weight distribution in polyethylene melts on degradation process at high temperatures *Cassandra L Simpson*
2:06PM - 2:18PM	T26.00012: Mapping pore-level activity of catalysts for polymer upcycling through dielectric spectroscopy *R Bharath Venkatesh, Jon Bingaman, Samantha Ausman, Lynn M Walker, Susannah L Scott, Rachel A Segalman*

Thursday, March 7, 2024 11:30 am – 2:30 pm

Session T32: Advanced Mechanical Characterization Including Mechanoresponsive Molecules for Stress Sensing

Sponsoring Units: DPOLY

Chair: Chelsea Davis, University of Delaware

Room: 102D

11:30AM - 11:42AM	T32.00001: Modeling the rheology of gelation using recovery rheology *Jiachun Shi, Yash L Kamble, Haisu Kang, Charles E Sing, Damien S Guironnet, Simon A Rogers*
11:42AM - 11:54AM	T32.00002: A comparison of phase separation in gels using different elastic models *Shichen Wang, Peter D Olmsted*
11:54AM - 12:06PM	T32.00003: Hierarchical, Porous Hydrogels Demonstrating Structurally Dependent Mechanical Properties *Elisabeth C Lloyd, Robert J Hickey, Chao Lang*
12:06PM - 12:18PM	T32.00004: A Molecular Theory for Liquid Crystal Elastomers: Nematic Ordering, Shape Deformation and Mechanical Response *Luofu Liu, Rui Wang*
12:18PM - 12:30PM	T32.00005: Molecular Dynamics as a Lens into Condensed Matter Mechanochemistry *Invited Author: Matthew P Kroonblawd*
12:30PM - 1:06PM	T32.00006: Quantifying Localized Stresses in the Matrix of a Fiber-Reinforced Composite via Mechanophores *Nazmul Haque, Chelsea S Davis, Chia-Chih Chang, Jared A Gohl, Hao-Chun Chang*
1:06PM - 1:18PM	T32.00007: Assembly and disassembly of supramolecular polymers with tunable ionic bonds *Shuyi Xie, Kseniia M Karnaukh, Rachel A Segalman*
1:18PM - 1:30PM	T32.00008: FLIM-FRAPP: Near-Simultaneous Characterization of Multi-Scale Polymer Dynamics via Fluorescence Microscopy *Mary Jutze, Walter W Young, Jasney M Combs, Reika Katsumata*
1:30PM - 1:42PM	T32.00009: Quantification of Stress Fields Ahead of a Cutting Blade via Mechanophores *Tyler J Roberts, Shaobo Zhan, Hao-Chun Chang, Chia-Chih Chang, Stephen Beaudoin, Shelby Hutchens, Chelsea S Davis*
1:42PM - 1:54PM	T32.00010: Mechano-Optoelectronic Conjugated Polymeric Thin Films with Nano-Structured Lamellae for Self-Sensing of Mechanical Strain *Donghyeon Ryu, Kyungtae Kim, Youngmin Lee*
1:54PM - 2:06PM	T32.00011: Stress Quantification in a Composite Matrix via Mechanophores *Chelsea S Davis, Jared A Gohl, Tristan Wiley, Hao-Chun Chang, Chia-Chih Chang*

Thursday, March 7, 2024 11:30 am – 2:30 pm

Session T33: Charged and Ion-Containing Polymers

Sponsoring Units: DPOLY

Chair: Yasemin Basdogan, University of Rochester

Room: 102E

11:30AM - 11:42AM	T33.00001: Coarse-Grained Molecular Dynamics of Polymer Electrolytes Using Drude Oscillators *Lisa M Hall, Mengdi Fan*
11:42AM - 11:54AM	T33.00002: Role of chain architecture and ion size on morphology, dynamics, and viscoelasticity of ionomers *Nazanin Sadeghi, Fardin Khabaz*
11:54AM - 12:06PM	T33.00003: Understanding Polymer Design Effects on Hydrated Ionomer Morphology and Hydrophilic Domain Structures *Jason Madinya, Stephen Kronenberger, Arthi Jayaraman*
12:06PM - 12:18PM	T33.00004: Relationship between Phase Behavior and Ion Transport in Single-ion Conducting Polymer Blends Electrolyte *Hsin-Ju (Jenny) Wu, Marissa R Gallmeyer, William M Breining, Whitney S Loo*
12:18PM - 12:30PM	T33.00005: Understanding the Impact of Li^+ vs Na^+ Salt on the Mechanical and Dynamic Properties of Polyzwitterion-supported Ionogel Electrolytes *Meron Y. Tadesse, Mossab K Alsaedi, Venkatraghavan Ganesan, Matthew J Panzer*
12:30PM - 12:42PM	T33.00006: Structure-Property Relationships in Mixed Ionic-Electronic Conductors via Machine Learning-Enhanced Multiscale Modeling *Riccardo Alessandri, Juan J De Pablo*
12:42PM - 12:54PM	T33.00007: Probing the ion binding capabilities of synthetic polyzwitterions *Carlos Medina Jimenez, Matthew V Tirrell*
12:54PM - 1:06PM	T33.00008: Ice Nucleation and Zwitterionic Polymers: Ab Initio Investigations of Molecular Interactions *Sara A Tolba, Wenjie Xia*
1:06PM - 1:18PM	T33.00009: Combined effects of pH, salt concentration, and ionizable monomer fraction on the swelling behavior and hysteresis of weak polyelectrolyte brushes *Shahryar Ramezani Bajgiran, Farshad Safi Samghabadi, Jacinta C Conrad, Amanda B Marciel*
1:18PM - 1:30PM	T33.00010: Localized Anionic and Hydrophobic Effects, Multiple Hydration States, and Counterions with Large Mobilities Inside Densely Grafted Cationic Brushes *Raashiq Ishraaq, Tanmay Sarkar Akash, Arka Bera, Siddhartha Das*
1:30PM - 1:42PM	T33.00011: Exploring the cooperative and competitive surface adhesion of polymers containing catechol and cationic residues *Alejandro A Gallegos, Jianzhong Wu, Zhen-Gang Wang*
1:42PM - 1:54PM	T33.00012: Elucidating The Glass Transitions and Material Properties of Polyelectrolyte Complex Materials *Isaac A Ramírez Marrero, Emily Ng, Rupert Konradi, Bernhard von Vacano, Nadine Kaiser, Sarah L Perry*
1:54PM - 2:06PM	T33.00013: Sulfonated Ionomer (Bio)Composites for Use in Vanadium Redox Flow Batteries *Xueting Wang, Annie Buck, Bronson Lynn, Mayura Silva, Stephen Creager Creager, Mark Thies, Eric M Davis*

2:06PM - 2:18PM	T33.00014: Ion Transport Kinetics and Energy Barrier in Polymer Nanocomposite with Superionic Ceramic Nanorods *Ji-young Ock, Amit Bhattacharya, Tao Wang, Catalin Gainaru, Jong Keum, Anisur Rahman, Sheng Dai, Raphaële J Clément, Alexei P Sokolov, Chelsea Chen*
2:18PM - 2:30PM	T33.00015: Liquid to Thermo-responsive Gel Using Liquid-Liquid Printing: Properties and Applications *Zichen Jin, Thomas P Russell*

Thursday, March 7, 2024 3:00 pm – 6:00 pm

Session W25: Large-Strain Mechanical Properties of Polymer Networks

Sponsoring Units: DPOLY DSOFT
Chair: Gabriel Sanoja, The University of Texas at Austin; Hyunki Kim, 3M
Room: 101F

3:00PM - 3:36PM	W25.00001: Bottlebrush elastomers as pressure sensitive adhesives *Invited Author: Sergei Sheiko*
3:36PM - 3:48PM	W25.00002: Interfacial Fatigue Fracture of Pressure Sensitive Adhesives *Yichen Wan, Ruobing Bai*
3:48PM - 4:00PM	W25.00003: Applying Time Temperature Superposition to Large Strain Shear data in Foldable Applications *Abigail M Gill*
4:00PM - 4:12PM	W25.00004: A universal strategy for decoupling stiffness and extensibility of polymer networks *Baiqiang Huang*
4:12PM - 4:24PM	W25.00005: Effect of Loop and Dangling End Defects on Strain Stiffening in Double Network Elastomers *Jennifer E Laaser, Victoria Kong*
4:24PM - 4:36PM	W25.00006: Elastomer Mechanics of Cross-linked Ring-Linear Polymer Blends *Siteng Zhang, Daniel L Vigil, Thomas C O'Connor, Gary S Grest, Ting Ge*
4:36PM - 4:48PM	W25.00007: Hyperelastic swelling of tough hydrogels *Justin C Burton, Jing Wang*
4:48PM - 5:00PM	W25.00008: Retraction Behavior of Stretchable Hydrogels *Santanu Kundu, Mohammad Moinul Hossain*
5:00PM - 5:12PM	W25.00009: Fracture of ductile plastics *Asal YousefiSiavoshani, Chaitanya Gupta, Shi-Qing Wang*
5:12PM - 5:24PM	W25.00010: Exploring the Effects of Nanoparticle Loading, Dispersion and Structure on the Stress Response of Elastomeric Nanocomposites *Harshad Bhapkar, Pierre Kawak, David S Simmons*
5:24PM - 5:36PM	W25.00011: Effect of Hydrogen Bonds on Thermomechanical Properties of Polyamide Ionene *Edward Buckser, Sudhir Ravula, Pravin Shinde, Jason E Bara, Jihong A Ma*
5:36PM - 5:48PM	W25.00012: Beyond linear response: Time-resolved rheology of interpenetrating biopolymer composites *Wayan A Fontaine-Seiler, Gavin J Donley, Emanuela Del Gado, Daniel L Blair*

Thursday, March 7, 2024 3:00 pm – 6:00 pm

Session W26: Physics-Informed Design of Recycled, Upcycled, and Sustainable Polymers: Additives and Processing Conditions

Sponsoring Units: DPOLY

Chair: Wenlin Zhang, Dartmouth College; Thomas Gartner, Lehigh University

Room: 101G

3:00PM - 3:12PM	W26.00001: Controlled phase behavior of polymer-grafted nanoparticles (PGNP) blend thin films. *Abdulmaliq Abdulsalam, Alamgir Karim*
3:12PM - 3:24PM	W26.00002: Shear Flow/Complex flow-induced polymer chain scission in entangled melts *Junghyun Ahn, Jonathan Bingaman, R Bharath Venkatesh, Rachel A Segalman, Susannah L Scott, Lynn M Walker*
3:24PM - 3:36PM	W26.00003: Chemically Inert Nanoparticles Enhance Mechanical Degradation in Flowing Polymer Nanocomposites *Nattavipa Chongvimansin, Songyue Liu, Gary S Grest, Thomas C O'Connor*
3:36PM - 3:48PM	W26.00004: Enhanced Mechanical Properties in Uniaxially Stretched Films of Diblock Polymer Modified Poly(L-lactide) *Jonathan P Coote, Charles McCutcheon, Boran Zhao, Matthew Larson, Frank S Bates, Christopher J Ellison*
3:48PM - 4:00PM	W26.00005: Influence of Mixing Protocol on Block Copolymer Compatibilized PE/iPP Blends *Gabriela I Diaz, Liyang Shen, Kendra Flanigan, Christopher J Ellison, Frank S Bates*
4:00PM - 4:12PM	W26.00006: Immiscible Polymer Blend Compatibilization through Pendant Ionic Interactions *Jerrick Edmund, Kseniia M Karnaukh, Elizabeth A Murphy, Taejun Eom, Shuyi Xie, Eiko Ino, Allison Abdilla, Javier Read de Alaniz, Craig J Hawker, Rachel A Segalman*
4:12PM - 4:24PM	W26.00007: Microscopic insights into compatibilized semicrystalline blends *Robert J Ivancic, Debra J Audus*
4:24PM - 4:36PM	W26.00008: Polymorphism and Stretch-Induced Transformations of Long-Spaced Sustainable Aliphatic Polyesters *Rufina G Alamo, Hamed Janani, Stephanie F Marxsen, Marcel Eck, Stefan Mecking*
4:36PM - 4:48PM	W26.00009: Understanding and Controlling Polymer-Porous Solid Interactions for Polymer Upcycling *Daeyeon Lee, Tian Ren, Renjing Huang, Ching-Yu Wang, Chuting Deng, Yinan Xu, Kai Shen, John Vohs, Juan J De Pablo, Raymond Gorte*
4:48PM - 5:00PM	W26.00010: Crystalline Structures and Transitions in Chemically Recyclable Poly(oligocyclobutane): Monomer Sequence and Tacticity *Shawn M Maguire, Cherish Nie, Hang Zhang, Chun Lam Clement Chan, Richard A Register, Paul J Chirik, Michael A Webb, Rodney D Priestley, Emily C Davidson*
5:00PM - 5:12PM	W26.00011: Reactive Additives for Mechanical Recycling of Polyethylene terephthalate-Polyethylene Mixed Waste *Erin M Maines, Caitlin S Sample, Aristotle J Zervoudakis, Marc A Hillmyer, Theresa M Reineke, Christopher J Ellison*
5:12PM - 5:24PM	W26.00012: Recyclable biobased self-blown non-isocyanate polyurethane foams: Influence of blowing agent structure and concentration *Nathan S Purwanto, Yixuan Chen, Tong Wang, John M Torkelson*

5:24PM - 5:36PM	W26.00013: Decrystallization Free Energy in Polyesters: Insights from Molecular Dynamics Simulations *Daria Lazarenko, Brandon C Knott*
5:36PM - 5:48PM	W26.00014: Investigating the internal structure of methylcellulose fibrillar assembly in aqueous solutions using multiscale modeling and simulations *Audrey M Collins, Zijie Wu, Stephen Kronenberger, Arthi Jayaraman*
5:48PM - 6:00PM	W26.00015: Changes to the morphology, density and mechanical stiffness of phytoglycogen nanoparticles subjected to acid hydrolysis *Yasmeen El-Rayyes, Benjamin Baylis, John R Dutcher*

Thursday, March 7, 2024 3:00 pm – 6:00 pm

Session W32: Self-Assembly of Biomacromolecules: From Simulations to Experiments

Sponsoring Units: DPOLY

Chair: Janani Sampath, University of Florida; Yeongseon Jang, University of Florida

Room: 102D

3:00PM - 3:36PM	W32.00001: Sequence Effects on Thermodynamic Interactions in Protein Polymers *Invited Author: Bradley D Olsen*
3:36PM - 3:48PM	W32.00002: Electrostatics-driven peptide-directed encapsulation of nanoparticles into protein cages *Wenhui Li, Michael Rütten, Niklas Mucke, Tobias Beck, Vikram Jadhao*
3:48PM - 4:00PM	W32.00003: Characterization of biomimetic membranes formed from amphiphilic block copolymers assembled at oil-water interfaces *McKayla L Torbett, Stephen A Sarles, Manish Kumar, Robert J Hickey, Elisabeth C Lloyd, Aida Fica, Berkin Dortdivanlioglu, Derya Bakiler*
4:00PM - 4:12PM	W32.00004: Predicting and Simulating the Self-Assembly of Sequence-Specific Peptoids *Daniela M Rivera Mirabal, Sally Jiao, Evan Pretti, Shawn Mengel, Audra J DeStefano, Rachel A Segalman, Scott Shell*
4:12PM - 4:24PM	W32.00005: Block Sequence Effects on Phase Behavior, Oligomerization, and Conformation of Racemic Polyampholyte Peptides *Winnie H Shi, Amanda B Marciel*
4:24PM - 4:36PM	W32.00006: Discovering optimal kinetic pathways for self-assembly using automatic differentiation *Margaret E Johnson, Adip Jhaveri, Spencer Loggia*
4:36PM - 4:48PM	W32.00007: Biomolecules for non-biological things: Polymer, 2-d lattice, and liquid crystal construction through peptide 'bundlemer' design and solution assembly *Darrin J Pochan*
4:48PM - 5:00PM	W32.00008: Self-limitation in geometrically frustrated, deformable particle assemblies with finite attraction range *Kyle T Sullivan, Montana B Minnis, Ryan Hayward, Mark J Stevens, Gregory M Grason*
5:00PM - 5:12PM	W32.00009: Bio-Inspired Random Heteropolymers *Tianyi Jin, Connor W Coley, Alfredo Alexander-Katz*
5:12PM - 5:24PM	W32.00010: Intermolecular Protein Interactions and Self-assembly of a Synthetic Therapeutic T-cell Receptor-like Molecule *Emily A Sakamoto-Rablah, Jordan Bye, Arghya Modak, Shahid Uddin, Jennifer J McManus*
5:24PM - 5:36PM	W32.00011: Beyond Antibiotics: Unravelling A Death Mechanism of Superbugs by Nanoengineered Star Peptide Polymers through Molecular Simulation and Experiment *Ellie Hajizadeh, Amal Jayawardena, Greg Qiao, Andrew Hung*
5:36PM - 5:48PM	W32.00012: Algebra for classical multiparticle complexes *Rebecca J Rousseau, Justin B Kinney*

Thursday, March 7, 2024 3:00 pm – 6:00 pm

Session W33: Polyelectrolyte Phase Transitions, Complexes, and Coacervates I

Sponsoring Units: DPOLY

Chair: Samanvaya Srivastava, UCLA; Di Jia, Institute of Chemistry, Chinese Academy of Sciences

Room: 102E

3:00PM - 3:36PM	W33.00001: Separation by polyelectrolyte complexation *Invited Author: Saskia Lindhoud*
3:36PM - 3:48PM	W33.00002: Spectrophotometric Insights into Protein Encapsulation in Polyelectrolyte Complex Micelles *Arthur Odenheimer, Holly Senebandith, Justin Caram, Samanvaya Srivastava*
3:48PM - 4:00PM	W33.00003: Nano and micro domains of complex coacervates in organic solvents to encapsulate enzymes *Jussara A Penido, Arvind Sathyavageeswaran, Stephanie Le, Sankaran Thayumanavan, Watson Loh, Sarah L Perry*
4:00PM - 4:12PM	W33.00004: Microstructural Rearrangement in Polyelectrolyte Complex Hydrogels *Holly Senebandith, Fahed Albreiki, Samanvaya Srivastava*
4:12PM - 4:24PM	W33.00005: Influence of Mesh Size on the Structure and Properties of Polyelectrolyte Complex/Covalent IPN Hydrogels *Samanvaya Srivastava, Defu Li, Holly Senebandith, Fahed Albreiki*
4:24PM - 4:36PM	W33.00006: Dipole-driven mesomorphic templated polymerization creating topologically interlocked nano-coacervates with loops *Di Jia, Yi Ming Yang, Gui Kang Wang, Yang Yang*
4:36PM - 4:48PM	W33.00007: Block Polyelectrolytes Scaffolds for Underwater Injection and Bioadhesion *Fahed Albreiki, Chad Nishimura, Tianyue Yu, Haleema Kashif, Samanvaya Srivastava*
4:48PM - 5:00PM	W33.00008: Nonequilibrium Molecular Dynamics of Flowing Complex Coacervates *Thomas C O'Connor*
5:00PM - 5:12PM	W33.00009: Tension-based control of chain conformation in complex coacervation *Anna N Nguyen, Omar A Saleh*
5:12PM - 5:24PM	W33.00010: Designing Sequence-Defined Complex Coacervates *Arvind Sathyavageeswaran, Pankaj Kumar Pandey, Sarah L Perry, Nickolas Holmlund, Priyanka Kaushik, Shannon McIntosh*
5:24PM - 5:36PM	W33.00011: Theory of Complexation of Two Oppositely Charged Intrinsically Disordered Proteins: Application of Polyelectrolyte Physics to Explain Experimental Results *Arindam Kundagrami, Aritra Chowdhury, Alessandro Borgia, Souradeep Ghosh, Andrea Sottini, Soumik Mitra, Rohan S Eapen, Madeleine B Borgia, Tianjin Yang, Nicola Galvanetto, Milos T Ivanovic, Paweł Łukijańczuk, Ruijing Zhu, Daniel Nettels, Ben Schuler*
5:36PM - 5:48PM	W33.00012: Constructing supramolecular peptide lattices through rational design and mixing of charged coiled-coil peptide 'bundlemers' *Weiran Xie, Rui Guo, Yi Shi, Jeffery G Saven, Darrin J Pochan*

Thursday, March 7, 2024 3:00 pm – 6:00 pm

Session W45: Emerging Trends in Polymer Composites for Applications in Energy and National Security

Sponsoring Units: DPOLY

Chair: Shiwang Cheng, Michigan State University; Robert Hickey, The Pennsylvania State University

Room: Auditorium 3

3:00PM - 3:36PM	W45.00001: The Effect of Morphology on Ion Transport and Electrochemical Performance in Polymer-Based Composite Electrolytes *Invited Author: Chelsea Chen*
3:36PM - 4:12PM	W45.00002: Morphology of Polymers and Ions on the Atomic-Scale Revealed by Cryogenic Transmission Electron Microscopy *Invited Author: Xi Jiang*
4:12PM - 4:48PM	W45.00003: Molecular Simulations of Polymer Nanocomposites *Invited Author: Amalie L Frischknecht*
4:48PM - 5:24PM	W45.00004: Understanding the character of photoresponse in glassy polymeric materials with molecular modeling *Invited Author: Timothy Sirk*
5:24PM - 6:00PM	W45.00005: Polymers, Composites, and Aerospace in 2030: Inventing the Stuff That Makes the Future *Invited Author: Richard A Vaia*

Friday, March 8, 2024 8:00 am – 11:00 am

Session Y26: Polymers and Block Copolymers at Interfaces I

Sponsoring Units: DPOLY

Chair: Reza Foudazi, University of Oklahoma; Whitney Loo, University of Wisconsin Madison

Room: 101G

8:00AM - 8:36AM	Y26.00001: Exploration of complex nanostructures in block copolymer *Invited Author: Moon Park*
8:36AM - 8:48AM	Y26.00002: Surface Mechanical Behavior of Water-Spread PS–PEG Cylindrical Micelles at the Air-Water Interface *Taesuk Jun, Daniel J Fesenmeier, You-Yeon Won*
8:48AM - 9:00AM	Y26.00003: Polymer Evaporative Crystallization on Water Surface *Christopher Y Li, Qian Qian, Shichen Yu*
9:00AM - 9:12AM	Y26.00004: pH-Dependence of Gold Nanoparticle Adsorption to a Weak Polyelectrolyte Brush *Katie Sun, Russell J Composto, Karen I Winey*
9:12AM - 9:24AM	Y26.00005: Computational Design of Patchy Particles with Complex Surface Patterning *Thi Vo*
9:24AM - 9:36AM	Y26.00006: Impact of Nanoparticle Curvature on Adsorbed Polymer Chain Structure and Local Glass Transition Properties *Katelyn Randazzo, Sneha Srinivasan, Daniele Cangialosi, Rodney D Priestley*
9:36AM - 9:48AM	Y26.00007: Size-Dependent Electrostatic Adsorption of Polymer-Grafted Gold Nanoparticles on Polyelectrolyte Brushes *Ye Chan Kim, Russell J Composto, Karen I Winey*
9:48AM - 10:00AM	Y26.00008: Molecular Dynamics Study of the Interactions between Polyethylene Nanoplastic Particles and Lipid Membranes *Anderson Duraes, Wenlin Zhang*
10:00AM - 10:12AM	Y26.00009: Self-assembly and structural relaxation in 'patch-clasping' nanoparticles *Kireeti Akkunuri, Ahyoung Kim, Kireeti Akkunuri, Chang Qian, Lehan Yao, Kai Sun, Zi Chen, Thi Vo, Qian Chen*
10:12AM - 10:24AM	Y26.00010: Unraveling the role of phenyl groups on the packing process of polystyrene chains bound to a solid surface *Yashasvi Bajaj, Zhixing Huang, Jan-Michael Y Carrillo, Mikihito Takenaka, Maya Endoh, Tadanori Koga*
10:24AM - 10:36AM	Y26.00011: Probing the buried structure at the silica/rubber interface *Zhixing Huang, Xiaoran Wang, Tomomi Masui, Hiroyuki Kishimoto, Ruipeng Li, Honghu Zhang, Maya Endoh, Tad Koga*
10:36AM - 10:48AM	Y26.00012: Controlled Disordering in Metal-Infiltrated Block Copolymer Nanopatterns *Sung Kwan Tae, So Youn Kim*

Friday, March 8, 2024 8:00 am – 11:00 am

Session Y32: Polymer Structure and Dynamics Across Multiple Length and Timescales

Sponsoring Units: DPOLY

Chair: Pierre Kawak, University of South Florida

Room: 102D

8:00AM - 8:36AM	Y32.00001: Two-step, stratified crystallization in conjugated polymer thin films: the role of interfacial effects. *Invited Author: Lucia Fernandez-Ballester*
8:36AM - 8:48AM	Y32.00002: Elucidating the Rotator Phase in a Chemically Recyclable Polyolefin *Hang Zhang, Shawn M Maguire, R. A Register, Emily C Davidson, Michael A Webb*
8:48AM - 9:00AM	Y32.00003: Shear Effects on Crystallization in Polyolefin Blends *McKenzie L Coughlin, Derek E Huang, Anthony P Kotula, Kalman B Migler*
9:00AM - 9:12AM	Y32.00004: Quasi-Elastic Neutron Scattering Study on Dynamically Asymmetric Polymer Blends *Christopher E Mbonu, Naresh C Osti, Di Wu, Pinar Akcora*
9:12AM - 9:24AM	Y32.00005: Knot Theory Perspective to the Globular States of Linear Polymers *Hao Guo, Yanxi Li, Mesfin Tsige*
9:24AM - 9:36AM	Y32.00006: Decoupled Main-Chain and Sticker Dynamics in Associating Comb Polymers *Chien-Hua Tu, Eli J Fastow, Roshni J Chethalen, Georgios Papamokos, Bryan Coughlin, Karen I Winey*
9:36AM - 9:48AM	Y32.00007: Theoretical study of the structure and thermodynamics of polymerized ionic liquids *Ankita Das, Kenneth S Schweizer*
9:48AM - 10:00AM	Y32.00008: Polyelectrolyte Solutions and Brushes *Amanda B Marciel*
10:00AM - 10:12AM	Y32.00009: Mechanisms for the creation of hierarchically structured block copolymer hydrogels via nonsolvent induced phase separation *Douglas R Tree, Rami Alhasan*
10:12AM - 10:24AM	Y32.00010: Assembly and Dynamics of Random Heteropolymers in Aqueous Environments *Alexandra Grigoropoulos, Ting Xu*
10:24AM - 10:36AM	Y32.00011: Investigating T1 Relaxation Times in Common Photopolymers: A Comparative Study *AJ Perez, Ileana Lane, Donovan Donald, Donovan Donald, Rosa E Cardenas*
10:36AM - 10:48AM	Y32.00012: Exploring molecular mechanisms underlying mechanical and rheological response of dispersed polymer melts from molecular dynamics simulations *Taofeek O Tejuosho, Janani Sampath*
10:48AM - 11:00AM	Y32.00013: Anisotropic coarse-grained models for the structural characterization of unentangled linear polytetrafluoroethylene (PTFE) *Yen-Ting Hsu, Hsiu-Yu Yu*

Friday, March 8, 2024 8:00 am – 11:00 am

Session Y56: Mechanisms of Macromolecular Self-Assembly

Sponsoring Units: DPOLY
Chair: Jonathan Whitmer, University of Notre Dame; Samanvaya Srivastava, UCLA
Room: 205AB

8:00AM - 8:36AM	Y43.00001: 3D Printing-guided Chiral Self-assembly in Cellulose-based Constructs *Invited Author: Monirosadat (Sanaz) Sadati*
8:36AM - 9:12AM	Y43.00002: Controlling Chain Conformation in Amorphous Polymers through Liquid Crystal Confinement *Invited Author: Xiaoguang Wang*
9:12AM - 9:48AM	Y43.00003: TBD *Invited Author: Daniel A Hamer*
9:48AM - 10:24AM	Y43.00004: Quantifying hydropathy of self-assembling biomaterials *Invited Author: Shikha Nangia*
10:24AM - 11:00AM	Y43.00005: Revealing the Molecular Language of Protein Phase Separation Using Physics-Based Computational Approaches *Invited Author: Jeetain Mittal*

Friday, March 8, 2024 11:30 am – 2:30 pm

Session Z26: Polymers and Block Copolymers at Interfaces II

Sponsoring Units:
DPOLY
Chair: Daniel Sunday, National Institute of Standards and Tech
Room: 101G

11:30AM - 12:06PM	Z26.00001: A novel shear and dilatational interfacial rheometer for the study of complex interfaces applied to polymers at the air-water interface. *Invited Author: Norman J Wagner*
12:06PM - 12:18PM	Z26.00002: Encoding Latent Domain Orientation in Spray Deposited Block Copolymer Thin Films *Gregory S Doerk, Semih Cetindag, Beatrice Bellini, Ruipeng Li, Esther H Tsai*
12:18PM - 12:30PM	Z26.00003: Finite-size effects on capacitive energy storage in ultra-thin polymer and block copolymer films *Alamgir Karim, Maninderjeet Singh, Dharmaraj Raghavan, Nihar R Pradhan*
12:30PM - 12:42PM	Z26.00004: Hierarchical Cylindrical Microdomains in an A_1BA_2C Tetrablock Terpolymer *Hyeongkeon Yoon, Qingshu Dong, Weihua Li, JinKon Kim*
12:42PM - 12:54PM	Z26.00005: High-Density Spherical Packing Phases from $A(AB_3)_3$ Dendron-Shaped Miktoarm Star Copolymer *Dokyung Woo, Hyeongkeon Yoon, Luyang Li, Qingshu Dong, Weihua Li, JinKon Kim*
12:54PM - 1:06PM	Z26.00006: Morphology of Block Copolymer and Bottlebrush Blends in Thin Films and Bulk *Daniel F Sunday*
1:06PM - 1:18PM	Z26.00007: Large Surface Area Non-equilibrium Morphologies Produced via Sequential Thermal and Solvent Immersion Annealing of Block Copolymer Thin Films *Kshitij Sharma, Maninderjeet Singh, John F Ankner, Sushil K Satija, Jack F Douglas, Alamgir Karim*
1:18PM - 1:30PM	Z26.00008: Coacervate emulsions stabilized by synthetic comb polymers with varying chain characteristics *Caitlyn Fick*
1:30PM - 1:42PM	Z26.00009: Scaling Theory of Diblock Copolymer Surface Micelles *Artem M Rumyantsev*
1:42PM - 1:54PM	Z26.00010: Modeling of lubricant additives using a molecularly-informed field theory *Charles Li, Michael S Shell, Glenn H Fredrickson*
1:54PM - 2:06PM	Z26.00011: Abstract Withdrawn

Friday, March 8, 2024 11:30 am – 2:30 pm

Session Z30: Dynamics in Charged and Ion-Containing Polymers

Sponsoring Units: DPOLY

Chair: Benjamin Paren, Stevens Institute of Technology; Naresh Osti, Oak Ridge National Laboratory

Room: 102AB

11:30AM - 12:06PM	Z30.00001: Thermotropic Side-Chain Polymer and Small-Molecule Ionic Liquid Crystals with Ion Transport in Nanoscale Domains *Invited Author: Jennifer L Schaefer*
12:06PM - 12:42PM	Z30.00002: Molecular Engineering of Ion-Conducting Polymer Membranes: Synthesis, Properties, and Applications *Invited Author: Chulsung Bae*
12:42PM - 1:18PM	Z30.00003: Emergent Viscoelasticity in Polyelectrolyte Complex Coacervates: Relaxation, from Monomer to Entangled Polymer Chains *Invited Author: Joseph Schlenoff*
1:18PM - 1:54PM	Z30.00004: Unreacted Amine Groups: Indispensable Keys to Unlock Imine Bonds in Dynamic Networks *Invited Author: Murillo Martins*
1:54PM - 2:30PM	Z30.00005: Network Forming Liquids Create Tunable Nanostructures for Efficient Small Molecule Transport and Intermolecular Interactions *Invited Author: Jose L Banuelos*

Friday, March 8, 2024 11:30 am – 2:30 pm

Session Z31: Statistical Physics in Constitutive Modeling

Sponsoring Units: GSNP DPOLY
Chair: Michael Buche, Sandia National Laboratories
Room: 102C

11:30AM - 11:42AM	Z31.00001: A Perspective on Statistical Physics in Constitutive Modeling *Michael R Buche*
11:42AM - 11:54AM	Z31.00002: A Statistical Mechanics Framework for Polymer Chain Scission, Based on the Concepts of Distorted Bond Potential and Asymptotic Matching, with Implications to the Lake-Thomas Theory of Polymer Fracture *Jason P Mulderrig, Samuel C Lamont, Franck J Vernerey, Brandon L Talamini, Nikolaos Bouklas*
11:54AM - 12:30PM	Z31.00003: Molecular-Level Constitutive Modeling of Nonlinear Deformations, Damage, and Fracture in Polymers *Invited Author: Nikolaos Bouklas*
12:30PM - 12:42PM	Z31.00004: Micromechanics of Dynamically Cross-linked Nematics *Samuel Lamont, Franck J Vernerey*
12:42PM - 12:54PM	Z31.00005: A Bond-based Peridynamics Modeling of Polymeric Material Fracture under Finite Deformation *Caglar Tamur, Shaofan Li*
12:54PM - 1:06PM	Z31.00006: Statistical Physics of (Quasi)-Brittle Fracture: Theory and Applications to Construction Materials *Ariel Attias, Franz-Josef Ulm*
1:06PM - 1:42PM	Z31.00007: Bridging Polymer Network Scales: Crosslinks as Fundamental Structural Units, and Emergent Multiphysics Phenomena *Invited Author: Matthew J Grasinger*
1:42PM - 1:54PM	Z31.00008: Negative Energetic Elasticity in Gels: Insights from a Lattice Polymer Chain *Nobu C Shirai, Naoyuki Sakumichi*
1:54PM - 2:06PM	Z31.00009: Coarse Grained Simulation of Molecular-motor Gels. *Jude Ann Vishnu, Xuyang Yao, Andreas Walther, Friederike Schmid*
2:06PM - 2:18PM	Z31.00010: When is the Poisson Ratio of Polymer Networks and Gels Larger than 0.5? *Yuan Tian, Zilu Wang, Andrey V Dobrynin*

Friday, March 8, 2024 11:30 am – 2:30 pm

Session Z32: Polymer Structure, Morphology, and Self-Assembly

Sponsoring Units:
DPOLY
Chair: Joshua Lequieu, Drexel University
Room: 102D

11:30AM - 11:42AM	Z32.00001: Liquid-like States in Micelle Forming Diblock Copolymer Melts *Kevin D Dorfman, Zhen-Gang Wang*
11:42AM - 11:54AM	Z32.00002: Self-assembly of Bottlebrush Diblock Copolymer within a Cylindrical Confinement *Jagat Singh, Paresh P Chokshi*
11:54AM - 12:06PM	Z32.00003: Network Phase with Frank-Kasper-Like Symmetry from Controlled Self-Assembly of High-χ Star-Block Copolymers *Cheng-Yen Chang, Gkreti-Maria Manesi, Apostolos Avgeropoulos, Wei-En Wang, Yu-Chueh Hung, Rong-Ming Ho*
12:06PM - 12:18PM	Z32.00004: Microphase Separation of Particle-Forming AB/AC Diblock Copolymer Blends with Immiscible Core Blocks *Zachary Gdowski, Samuel Swartzendruber, Mahesh Mahanthappa, Frank S Bates*
12:18PM - 12:30PM	Z32.00005: Coarse-grained Models of Bottlebrush Polymers from Solutions to Melts using a Wormlike Cylinder Model *Haisu Kang, Charles E Sing*
12:30PM - 12:42PM	Z32.00006: Stable and Unstable Tiling Patterns Formed by ABC Miktoarm Star Triblock Terpolymers of Symmetric Interactions *Qiang Wang, Cody Hawthorne, Juntong He*
12:42PM - 12:54PM	Z32.00007: Influence of the Hydrophilic Corona Block on Drug Encapsulation during Polymerization Induced Self-assembly *Guanrui Li, Ralm G Ricarte*
12:54PM - 1:06PM	Z32.00008: Two-Regime Conformation of Grafted Polymer on Nanoparticle Determines Symmetry of Nanoparticle Self-assembly *Ji Woong Yu, Hongseok Yun, Won Bo Lee, YongJoo Kim*
1:06PM - 1:18PM	Z32.00009: Structure and Composition Effects on the Magnetically-induced Ordering of Poloxamer Solutions *Grace Kresge, Arit Das, Christopher A Neal, Milena Mesfun, Michelle A Calabrese*
1:18PM - 1:30PM	Z32.00010: Catalan and Half-Catalan numbers in Hyperbranched Polymers *Pratyush Dayal, Neeldhara Misra, Surbhi Khewle*
1:30PM - 1:42PM	Z32.00011: Effect of Solvent Uptake on Morphology in TAPB-PDA COFs *Frederick L Beyer, David McLeod, Emil Sandoz-Rosado, Eric D Wetzel*
1:42PM - 1:54PM	Z32.00012: Parametrizing Conjugated Polymers as Ribbon-like Chains *Srikant Sagireddy, Wesley Michaels, Jian Qin*
1:54PM - 2:06PM	Z32.00013: Confinement of Semi-crystalline Bottlebrush Random Copolymers *Xuchen Gan, Hong-Gyu Seong, Zhan Chen, Mingqiu Hu, Todd S Emrick, Thomas P Russell*
2:06PM - 2:18PM	Z32.00014: Why Don't Some Strongly Attracting Heteropolymers Phase Separate? *Jessica Jin, William M Jacobs*
2:18PM - 2:30PM	Z32.00015: Two-step Transition in 2D Melting of Hard-Core Soft-Shell Colloidal Particles *Jihun Ahn, Su-Mi Hur, Abelardo Ramirez-Hernandez, So Youn Kim, Luis Adrian Padilla Salas, Seok Joon J Kwon*

Friday, March 8, 2024 11:30 am – 2:30 pm

Session Z33: Polyelectrolyte Phase Transitions, Complexes, and Coacervates II

Sponsoring Units:
DPOLY
Chair: Jonathan Whitmer, University of Notre Dame; Aman Agrawal, University of Chicago
Room: 102E

11:30AM - 11:42AM	Z33.00001: Revealing the Impact of Semiflexibility and Solvent Ordering on Polyelectrolyte Phase Phenomena Using Polymer Field Theory *Michael Beckinghausen, Andrew Spakowitz*
11:42AM - 11:54AM	Z33.00002: The Effects of Dynamic Binding on the Phase Behavior and Properties of Polymer Blends undergoing Complex Coacervation *Zuzanna Jedlinska, Robert A Riggleman*
11:54AM - 12:06PM	Z33.00003: Salt-dependent Phase Behavior of Weak Polyelectrolyte Complexes *Fujie Lan, Huiling Li, Ying Liu, Mohsen Ghasemi, Ronald G Larson*
12:06PM - 12:18PM	Z33.00004: Phase Behavior and Chain Conformation of Assoicative Guanidinium-Containing Polyelectrolytes in Aqueous Media *Seunghwan Oh, SooHyung Choi*
12:18PM - 12:30PM	Z33.00005: Competitive Substitution of Charged polymers and Trimer Formation: A Mean-Field Model *Souradeep Ghosh, Arindam Kundagrami*
12:30PM - 12:42PM	Z33.00006: Molecular-weight-driven Partitioning in Polyelectrolyte Complexes *Jacob D Horne, Kayla P Barker, Junzhe Lou, Jian Qin, Yan Xia*
12:42PM - 12:54PM	Z33.00007: Role of Entropy and Enthalpy in the Complexation of a Pair of Oppositely Charged Asymmetric and Partially Ionized Polyelectrolytes *Soumik Mitra, Souradeep Ghosh, Arindam Kundagrami*
12:54PM - 1:06PM	Z33.00008: Divalent Cation Effects in Poly(diallyl dimethylammonium)-Poly(styrene sulfonate) Complexes *Tamunoemi O Braide, Suvesh M lalwani, Chikaodinaka I Eneh, Jodie Lutkenhaus*
1:06PM - 1:18PM	Z33.00009: Ion Correlation Induced Non-monotonic Height Change and Microphase Separation of Polyelectrolyte Brushes *Rui Wang, Chao Duan, Takashi Yokokura, Nikhil R. Agrawal*
1:18PM - 1:30PM	Z33.00010: Stabilization of Biomimetic Organic-Inorganic Polymeric Coacervates by Divalent Ions *Ali Hatami, Yingxi Elaine Zhu, Adithya Rathinasabapathy*
1:30PM - 1:42PM	Z33.00011: Molar Mass Dependence of Polyzwitterion Phase Separation Behavior and Dynamics *Vivek M Prabhu, Phillip D Pickett, Steven D Hudson, Paul Salipante*
1:42PM - 1:54PM	Z33.00012: Adsorption of pH responsive Ampholytic Ions into Weak Polyelectrolyte Brush: A Simulation Study *Keerthi Radhakrishnan, Christian Holm*
1:54PM - 2:06PM	Z33.00013: Coarse-Grained Explicit Solvent Molecular Dynamics Simulations of Polyzwitterion-Polyelectrolyte Complexes *Jan-Michael Y Carrillo, Panagiotis Christakopoulos, Yangyang Wang, Jong Keum, Changwoo Do, Alexis Williams, Rajeev Kumar, Bobby Sumpter*
2:06PM - 2:18PM	Z33.00014: Understanding the Confinement Dynamics in Polyzwitterion-salt Complexes using Fast Scanning Calorimetry. *John Thomas, Abhishek Mondal, Ashleigh Herrera, Ayse Asatekin, Peggy Cebe*

Wednesday, March 6, 2024 11:30 am – 2:30 pm

Session N00: Poster Session II (11:30am-2:30pm CST)

Room: Hall BC

N00.00001: POLYMER PHYSICS

N00.00002: Machine learning enhanced CREASE method for Analyzing 2D Small Angle Scattering Profiles

Sri Vishnuvardhan Reddy Akepati, Nitant Gupta, Arthi Jayaraman

N00.00003: Effect of competing architectural asymmetries on the self-assembly of star copolymers

Alfredo Alexander-Katz, Guillermo A Hernandez-Mendoza, Artem Petrov

N00.00004: A Machine Learning Approach for Describing Shear-induced Dynamics in Soft Particle Glasses

Harsh Pandya, Patrick Cuddihy, Nazanin Sadeghi, Fardin Khabaz

N00.00005: Coarse-Grained Artificial Intelligence for Design of Brush Networks

Andrey V Dobrynin, Mohammad Vatankhah-Varnosfaderani, Sergei Sheiko, Anastasia Stroujkova

N00.00006: Mixed Ion-Electron Conducting Polymer Architectures for Energy Storage Applications

Pratyusha Das, Alexandra Zele, Phong H Nguyen, Michael L Chabinyc, Rachel A Segalman

N00.00007: Effective strategies for improving ionotronic sensory performance

Eun Ji Han

N00.00008: Multimodal Wearable Ionoskins Distinguishing Separately Recognition of External Stimuli Without Signal Crosstalk

Jin Han Kwon

N00.00009: Achieving comparable power conversion efficiency of organic solar cells by using environment-friendly solvents

Ushasri Mukherjee

N00.00010: Plasma Synthesis of 2D Layered SiC NCs with High PL QY

Salim Thomas, Naif Saad Alharthi, Erik K Hobbie

N00.00011: Electrical Properties of Radical-containing Monomers and Their Application in Topochemically Polymerized Macromolecules

Yun-Fang Yang, Baiju P Krishnan, Hyunki Yeo, Bryan W Boudouris

N00.00012: Automating Simulations of Block Copolymers to Find Structural Features Using a Closed-Loop Optimization Process

Jacob R Breese, Ting-Yeh Chen, Joel A Paulson, Lisa M Hall

N00.00013: PSCF+: An Extended and Improved Open-Source Software Package for Polymer Self-Consistent Field Calculations of Block Copolymer Self-Assembly

Juntong He, Qiang Wang

N00.00014: Investigating the Interaction of Two Bottlebrush Polymer Grafted Nanoparticles: Effects of Stiffness and Grafting density of polymer

Seoyeun Kim, Ji Woong Yu, YongJoo Kim

N00.00015: Thermodynamic Driving Forces of Coacervate Nanoparticle Assembly

Emmit K Pert

N00.00016: Adsorption of pH responsive ampholytic ions into weak Polyelectrolyte brush: A simulation study

Keerthi Radhakrishnan, Christian Holm

N00.00017: Bottom-Up Coarse-Grained Modeling of Sequence-Specific Polymers

Daniela M Rivera Mirabal, Shawn Mengel, Sally Jiao, Evan Pretti, Audra J DeStefano, Rachel A Segalman, Scott Shell

N00.00018: Dispersant Effect in Cathode Electrode Slurry System

minyoung seo, AnSeong Park, Je-Yeon Jung, Seungtae Kim, Woojin Kim, Sangdeok Kim, Won Bo Lee, YongJoo Kim

N00.00019: Linking polysulfamide design to morphology using molecular simulation and machine learning

Jay A Shah, Aanish Paruchuri, Lalith Nagidi, Shizhao Lu, Arthi Jayaraman

N00.00020: Cryogenic Studies of PL From Polymer Nanocomposites of 2D layered SiC NCs

Naif S Alharthi, Salim A Thomas, Erik K Hobbie

N00.00021: A Novel Optical Absorption Method to Monitor Polymer Infiltration Inside a Bicontinuous, Nanoporous Gold Scaffold

Chuyi Pan, Weiwei Kong, Rongyue Lin, Russell J Composto

N00.00022: Nanoparticle Diffusion as a Function of Polymer Molecular Weight and Bound Layer Dynamics

Kaitlin Wang, Russell J Composto, Karen I Winey

N00.00023: Tailoring the Morphology of Polymer-Grafted Nanoparticle Composites – A Study of Film Thickness and Nanoparticle Loading

Aria C Zhang, Kohji Ohno, Russell J Composto

N00.00024: Mechanically-assisted catalytic depolymerization of polyolefins

Jon Bingaman, R Bharath Venkatesh, Jung Hyun Ahn, Samantha Ausman, Susannah L Scott, Lynn M Walker, Rachel A Segalman

N00.00025: A low environmental impact emulsion process as an alternative to the conventional recycling methods of plastic wastes

Simin Xia, Wenhao Qin, H Daniel Ou-Yang

N00.00026: Macromolecular composites as physical analogues of biomatter plastics: insights into bonding motifs, microstructure and bulk mechanical properties

Eleftheria Roumeli, Ian R Campbell, Ziyue Dong, Paul Grandgeorge, Ella Lee, Kayla Sprenger

N00.00027: Incorporation of Long-Lived Interactions into Metal-Ligand Coordinating Polymer Electrolytes to Improves Bulk Mechanical Properties

James Bamford, Ben Pedretti, Leo Gordon, Seamus D Jones, Nathaniel A Lynd, Raphaële J Clément, Rachel A Segalman

N00.00028: Hydroxide Solvation and Transport in a Quaternized Precise Polyethylene

William F Drayer, Karen I Winey, Amalie L Frischknecht

N00.00029: Ionic Conductivity in Solvent-Swollen Surfactant-Like Multiblock Copolymer Thin Films

Benjamin T Ferko, Benjamin Ketter, Zhongyang Wang, Paul F Nealey, Karen I Winey

N00.00030: Elucidating nanoparticle reinforcing effects through low-volume chemical coupling as explored by coarse-grained molecular dynamics

Yawei Gao, Nihal Kanbargi, Joshua T Damron, Logan T Kearney, Jan Michael Carrillo, Jong Keum, Michael Toomey, Bobby Sumpter, Amit K Naskar

N00.00031: Mechanically Tough and Ionically Conductive Solid Polymer Electrolytes for Precise Motion Monitoring Applications

Minsu Kim, Jeong Hui Kim, Dong Hyeon Park, Keun Hyung Lee

N00.00032: Effect of Corona Block Asymmetry on Chain Exchange in Triblock Copolymer Micelles

Taehyoung Kim, En Wang, Joanna M White, Frank S Bates, Timothy P Lodge

N00.00033: Effect of sulfonation level on the morphology, local structure, and proton conductivity of hydrocarbon-based random copolymers

Sol Mi Oh, Courtney Leo, Emily Grumbles, Justin G Kennemur, Karen I Winey

N00.00034: Counterion Size and Polarity Effects on Ionomer Dynamics

Grace Sasko, Chathurika J Kosgallana, Gary S Grest, Dvora Perahia

N00.00035: Scaling Theory of Polymer Solutions: Viscosity, Chain Self-diffusion, and Osmotic Pressure

Ryan Sayko, Andrey V Dobrynin

N00.00036: Investigate Molecular Bottlebrush Conformation and Aggregation Status Under Different Solvent Quality

Sidong Tu, Chandan K Choudhury, Michaela Giltner, Igor Luzinov, Olga Kuksenok

N00.00037: Ionic Conductivity Measurements of Single-ion Solid Copolymer Electrolytes based on Oxanorbornene Monomers

Dean A Waldow

N00.00038: Hierarchical Dynamics of Polymer/Molecular Nanoparticles Hybrid Systems

Huiming Xiong

N00.00039: Multilayer hydrogel microcubes: Effects of templating particle morphology on cubic hydrogel properties

Daniel Inman, Veronika Kozlovskaya, Pavel Nikishau, Sarah Nealy, Eugenia Kharlampieva

N00.00040: Controlling mechanical properties of poly(methacrylic acid) thin multilayer hydrogels via hydrogel internal architecture

Veronika Kozlovskaya, Maksim Dolmat, John F Ankner, Eugenia Kharlampieva

N00.00041: Cosolvent incorporation tunes the nanostructure formation and thermal responsivity of aqueous PNIPAM/silyl methacrylate copolymers

Jason D Linn, Fabian A Rodriguez, Michelle A Calabrese

N00.00042: Rate-dependent thermotropic phase transitions in liquid crystalline oligomers

Emily C Ostermann, Chun Lam Clement Chan, Shawn M Maguire, Emily C Davidson

N00.00043: Probing Hydration Changes of Perdeuterated Poly(N-isopropylacrylamide) Across the Demixing-Transition with Vibrational Spectroscopy

Alfons Schulte, Dharani Mullapudi, Alec Nieth, Nicolas Harms, Christopher Bennett, Dirk Schanzenbach, André Laschewsky, Christine Papadakis

N00.00044: Elasto-magnetic Jumping Gels: Magnetic Latch-controlled Performance

Xiaona Xu, Alfred J Crosby, James J Watkins

N00.00045: How does gelation impact the mechanical properties of polymer networks? Insights from polymer mechanochemistry

Aaliyah Z Dookhith, Gabriel E Sanoja

N00.00046: Elastomers of Oligocellulose Derivatives with Tunable Structures and Properties

Howard Wang, Feng Jiang, Shuaishuai Chen, jiajun feng, Robert M Briber

N00.00047: Self-assembly and structural relaxation in 'patch-clasping' nanoparticles

Kireeti Akkunuri, Ahyoung Kim, Kireeti Akkunuri, Chang Qian, Lehan Yao, Kai Sun, Zi Chen, Thi Vo, Qian Chen

N00.00048: Role of Processing and the Air-Polymer Interface on Crystallization of Poly(3-hexylthiophene)

Jesse L Kuebler, Tucker Loosbrock, Joseph Strzalka, Lucia Fernandez Ballester

N00.00049: Role of ring-size and side-chain length in artificial water channel permeability

Tyler J Duncan, Harekrushna Behera, Paul R Irving, Nico Marioni, Harnoor S Sachar, Meron Y. Tadesse, Zidan Zhang, Everett S Zofchak, Manish Kumar, Venkatraghavan Ganesan

N00.00050: Ion transport in weak polyelectrolyte membranes at varying external pH

Yongha Kim, Ralph H Colby, Hee Jeung Oh

N00.00051: Effect of water content and sulfonation level in a fluorine-free random copolymer on nanoscale morphology and proton transport

Victoria S Lee, Max S Win, Amalie L Frischknecht, Karen I Winey

N00.00052: What is the impact of ion aggregation and counterion condensation on salt transport in ion exchange membranes?

Nico Marioni, Akhila Rajesh, Zidan Zhang, Benny D Freeman, Venkatraghavan Ganesan

N00.00053: Impact of side chain comonomer PEGMA as blocking group in Ion exchnage membranes for CO_2 reduction product crossover: Electrochemical Cell Application

Antara Mazumder, Bryan S Beckingham

N00.00054: Mixed binary alkali halide salt transport in PEO systems

Aubrey Quigley, Everett S Zofchak, Nathaniel A Lynd, Benny D Freeman

N00.00055: Tuning Interfacial Interactions for One-step Ordering of Block Copolymer Films with Tunable Pore Sizes for Wastewater Filtration Membranes

Kshitij Sharma, Khadar B Shaik, Maninderjeet Singh, Chenhui Zhu, Mohammad K Hassan, Alamgir Karim

N00.00056: Revealing selective analytes binding mechanism of PEGylated phospholipid CoPhMoRe by CG Molecular dynamics simulation

Woojin Kim, Yullim Lee, Sooyeon Cho, YongJoo Kim

N00.00057: Probing the Impact of Chain Architecture on Segmental Dynamics in Semi-Crystalline Poly(oligocyclobutane)

Shawn M Maguire, Stavros Drakopoulos, Cherish Nie, Richard A Register, Paul J Chirik, Rodney D Priestley, Emily C Davidson

N00.00058: Core-Modified DPD Simulations of Helical Polymers on Spherical Nanoparticle Surfaces

Michael A Hore, Ankit Saha

N00.00059: Self-diffusion of Linear and Star Polyacids in Layer-by-Layer Films: Impact of the Polycation Molecular Weight

Parin Purvin Shah, Aliaksei Aliakseyeu, Jordan Brito, Svetlana A Sukhishvili

N00.00060: Structural Dynamics Evolution of EVOH during Polymer Upcycling Reaction by Ex-Situ Electrochemical Impedance Spectroscopy

Chien-Hua Tu, Eli J Fastow, Anne Radzanowski, Bryan Coughlin, Karen I Winey

N00.00061: Implicit-solvent coarse-grained simulations of linear-dendritic block copolymer micelles

Mariano E Brito, Sofia Mikhtaniuk, Igor M Neelov, Oleg Borisov, Christian L Holm

N00.00062: Optimizing the Synthesis of High Molecular Weight Thermoresponsive Triblock Copolymers for Processing Scalability

Clarissa Huisman, Jason D Linn, Soumi Das, Michelle A Calabrese

N00.00063: Magnetic Field Induced Ordering Of Block Copolymers

Milena Mesfun, Arit Das, Grace Kresge, Michelle A Calabrese

N00.00064: Mechanism of Plasticization and Antiplasticization in Chitosan-Based Systems

Baris Eser Ugur, Michael A Webb

N00.00065: Mechanics of 3D Printed Microbial Hydrogel Composites

Samson O Adelani, Nicole Garza, Morgan B Riffe, Jason A Burdick, Konane Bay

N00.00066: Modeling microwave-induced heating of 3D-Printed Structures of Polypropylene filled with SiC Whiskers

Arefin M. Anik, Erik L Antonio, Igor Luzinov, Olga Kuksenok

N00.00067: Continuous Spun Fibers via Centrifugal Force Spinning

Louie Edano, Cheryl L Slykas, Vihar Trada, Carina Martinez, Naveen Reddy, Vivek Sharma

N00.00068: Tuning Polymorphism of Poly(vinylidene fluoride) Thin Films via Capillary Pen 3D Printing

Jiaen Wu, Shawn M Maguire, David Bershadsky, Emily C Davidson

N00.00069: Evolution of Polystyrene Adhesion on a Si Substrate Coupled with Interfacial Structural Relaxation

REIKI ETO, Hidenobu Taneda, Yuma Morimitsu, Keiji Tanaka

N00.00070: In-Situ Real-time AFM Observation of Folded-Chain Crystallization of Single Isolated Isotactic Poly(methyl methacrylate) Chains in a Langmuir-Blodgett Monolayer at the Molecular Level

Jiro Kumaki, Yusaku Takahashi

N00.00071: On slip predictability for sheared granular systems

Lou Kondic, Philip Bretz, Miro Kramar

N00.00072: Unveiling the Role of Physicochemical Bonds on the Mechanical Behavior of Colloidal Gels

Elnaz Nikoumanesh, Ryan Poling-Skutvik

N00.00073: Dynamic Heterogeneity in Plasticized Polystyrene Thin Films

Jaladhar Mahato, Han Yang, Alec Robert Meacham, Laura Kaufman

N00.00074: Characterizing Rotational Dynamics in Glassy Systems from Single Molecule Intensity Fluctuations

Alec R Meacham, Jaladhar Mahato, Han Yang, Laura Kaufman

N00.00075: Probing the Viscoelastic Properties of Stable Glass Surfaces

Weiduo Wang, Brandon Mcclimon, Peng Luo, Kritika jha, Robert W Carpick, Zahra Fakhraai

N00.00076: Bioorthogonal synthesis of supramolecular peptide polymers

Hanyuan Gao, Tianren Zhang, Matthew G Langenstein, Weiran Xie, Jeffery G Saven, Shi Bai, Darrin J Pochan, Joseph M Fox, Xinqiao Jia

N00.00077: Electrostatic Driven Self-Assembly of Polyoxometalate Macroions in Divalent Salt Solution

Ali Hatami, Yingxi Elaine Zhu, Adithya Rathinasabapathy

N00.00078: Bound and Bulk Methanol Relaxation of Poly(N-isopropylacrylamide) in a Water-Methanol Mixture

Eric Rende, Bart-Jan Niebuur, Wiebke Lohstroh, Christine Papadakis, Alfons Schulte

N00.00079: Block Polyelectrolytes Scaffolds Enable 3D Printing of Gelatin Inks at Physiological Temperatures

Fahed Albreiki, Tobias Göckler, Defu Li, Alisa Grimm, Felix Mecklenburg, Juan Manuel Urueña, Samanvaya Srivastava, Ute Schepers

N00.00080: Rheology of Microstructurally Rearranged Polyelectrolyte Complex Hydrogels

Holly Senebandith, Fahed Albreiki, Samanvaya Srivastava

N00.00081: Linking bed forces to granular rheology in geophysical flows using DEM-CFD

P.J. H Zrelak, Eric Breard, Josef Dufek

N00.00082: Abstract Withdrawn

Michael A Hore, Nehal Nupnar, Kiril A Streletzky, Geofrey M Nyabere

N00.00084: Interfacial nanoparticle layers: Nanorheology and phase separation monitored by scanning electron microscopy.

Katelynn O'Donnell, Anthony Raykh, Alexander E Ribbe, Thomas P Russell, David Hoagland

N00.00085: High-throughput fabrication of geometrically complex nanoenvironments for single-molecule fluorescence microscopy

Louis Wang, Danielle J Mai

N00.00086: A Photochemical Approach to Realizing an On-Demand Switchable Polymer between a Thermoset and a Vitrimer

GYEONGHWAN CHOI, Chae Bin Kim

N00.00087: Enabling Circularity and Upcycling of Post-Consumer-Use Flexible Polyurethane Foam

Divya Iyer, Mohammad Galadari, Fernaldy Wirawan, Holly Senebandith, Lucas Willey, Rong Feung Peter Goh, Patrick Getty, Michael Gallagher, Dante Simonetti, Gaurav Sant, Samanvaya Srivastava

N00.00088: Non-local Shortest Paths: Microstructural Evolution controls Macroscopic Response for Dynamic Polymer Networks

Shaswat Mohanty, Yikai Yin, Christopher B Cooper, Zhenan Bao, Wei Cai

N00.00089: Direct Observation of Covalent Adaptable Network Rearrangement Using Single-Particle Tracking

Christopher Rademacher, Muzhou Wang, Julia A Kalow

N00.00090: Poly(n-hexyl methacrylate) Covalent Adaptable Networks (CANs) Made by Reactive Processing to Link Alkyl Side Chains with Dynamic Covalent Bonds

Mathew J Suazo, Logan M Fenimore, John M Torkelson

N00.00091: Design of Polymers With Orthogonal Gelation Schemes for Water-Soluble Photo-Patterned Release Layers

Matthew Ticknor, Montana B Minnis, Erik Banta, Qi Lu, Ryan Hayward

N00.00092: Room Temperature Repairable Dynamic Covalent Adaptable Network with UV Responsive Disulfide Bonds

Yeomyung Yoon, Chae Bin Kim

N00.00093: Poster: How Do Ultrathin Polymers in the Softening Regime Fail?

Ava Crowley, Konane Bay

N00.00094: How do crumples impact the stiffness of ultrathin polymer films?

Lydia Flackett, Konane Bay, Ava Crowley

N00.00095: Processing Effects on the Physical Properties of Ultrathin Glassy Polymer Films

Emika Iino, Myounguk Kim, Alfred J Crosby, Toshiaki Ougizawa

N00.00096: Investigating Microphase Separated Triblock Copolymers as Vehicles for Targeted Mechano-responsive Materials

Brandon Jeong, Antonia Statt

N00.00097: Polymer Crystallization in Nanoemulsion Systems

Shichen Yu, Christopher Y Li

N00.00098: Crystallization of molecular bottlebrushes bearing single- and double-crystalline side chains

Carl Furner, Jeffrey T Wilk, Christopher Y Li, Bin Zhao, Ethan Kent, Michael Kelly

N00.00099: Entanglement Effect on Folding Behaviors of Semi-crystalline Polymer during Melt-Crystallization

Zheng Huang, Toshikazu Miyoshi, Chenxuan Sun, Fan Jin

N00.00100: Structure and Mechanical Property of Highly Branched Polyethylene Thermoplastic Elastomers

Bohao Peng, Toshikazu Miyoshi, Keaton Turney, James Eagan

N00.00101: Molecular Level Study into Protonated and Deuterated Polyolefin Blends by Solid-State NMR

WALTER G ROMANO, Bohao Peng, Toshikazu Miyoshi, James Eagan, Arsalaan Pathan, Zheng Huang

N00.00102: Thin Film Crystallization of Molecular Bottlebrushes

Carl Furner, Jeffrey T Wilk, Christopher Y Li, Bin Zhao, Michael Kelly

N00.00103: Suppressing crystalline phases of liquid crystalline polymers

Kirstin Bode, Chun Lam Clement Chan, Emily C Ostermann, Shawn M Maguire, Emily C Davidson

N00.00104: A computationally-informed unified view on the effect of polarity and sterics on the glass transition in vinyl-based polymer melts

Tianyi Jin, Connor W Coley, Alfredo Alexander-Katz

N00.00105: Optical Fibers in Fluoropolymer Cladding Exhibiting Unixial Photomechanical Motion

Louis D Ferreira, David R Sheffield, Nathan J Dawson, Matthew Knitter, Joseph Pusateri

N00.00106: Molecular dynamics study on the stress-thermal relation of polymer melts under shear flows

Kotaro Oda, Shugo Yasuda

N00.00107: Dynamic mechanical properties during formation and degradation of star polymer hydrogels

Eleanor Quirk, Michael C Burroughs, Brendan M Wirtz, Tracy H Schloemer, Daniel N Congreve, Danielle J Mai

N00.00108: Capillarity-Driven Pinching Dynamics and Extensional Rheology of Dilute and Entangled Polymer Solutions

Cheryl L Slykas, Jorgo Merchiers, Carina Martinez, Louie Edano, Naveen Reddy, Vivek Sharma

N00.00109: Modeling Liquid-Solid Phase Transitions in Suspensions of Compressible Microgels

Oreoluwa E Alade, Alan R Denton

N00.00110: Modeling the Response of Soft Microgels to Crowding by Nanoparticles

Mahesh Aryal, Alan R Denton

N00.00111: A Kinetic Model for Off-Stoichiometric Crosslinking Reactions of End-Linked Polymer Gels and Networks

Haley K Beech, Tzyy-Shyang Lin, Hidenobu Mochigase, Bradley D Olsen

N00.00112: Tuning Elastic and Viscoelastic Mechanical Properties of Double-Network Alginate-Polyacrylamide Hydrogels for Scaffold Design Applications

Zhanda Chen, Vignesh Venkataramani, Cole Reinholt, Lydia Kisley

N00.00113: Effect of Kinetically-Distinct Crosslinking on Temporal Mechanical Property Development in Photopolymerized Networks

Rithwik Ghanta, Cade McAndrew, Alexa S Kuenstler

N00.00114: Crack formation in end-linked polymer networks

Devosmita Sen, Kanon Hasegawa, Bradley D Olsen

N00.00115: Scaling in Gel Mechanics: Crossover between Self- and Neighbor-Avoiding Walks

Nobu C Shirai, Naoyuki Sakumichi

N00.00116: Crosslink-to-Entanglement Transition and Crosslink Fluctuations in Polymer Networks

Yuan Tian, Zilu Wang, Michael S Jacobs, Andrey V Dobrynin

N00.00117: Molecular Dynamic Simulation of Free Polymer Chain diffusion into a Regular network.

Jude Ann Vishnu, Sebastian Seiffert, Friederike Schmid

N00.00118: Deformation of Brush Gels and Hidden Length

Zilu Wang, Sergei Sheiko, Andrey V Dobrynin

N00.00119: Coacervation in dilute charged polymer solution

Jae Wan Chung, YongJoo Kim

N00.00120: Counterion distribution around the strongly stretched polyelectrolyte chains: from single molecules to hydrogels

Aykut Erbas, Muzaffar Rafique

N00.00121: Electrospinning of fouling-resistant non-woven fibrous filtration membranes from PVDF/Polyampholyte blends

Anuja S Jayasekara, Ayse Asatekin, Peggy Cebe, Luca Mazzaferro, Ryan O'Hara

N00.00122: Coarse-grained molecular dynamics simulations to study effect of cation charge density in polymer electrolytes

Spand B Mehta, Lisa M Hall

N00.00123: Hexagonal Boron Nitride Modulates Crystallinity and Charge Mobility in PEO–$NaNO_3$ Electrolytes

Colby Snyder, Shreyas S Pathreeker, Georgios Papamokos, Russell J Composto

N00.00124: Mechanisms of Ion Transport in Lithium Salt-Doped Zwitterionic Polymer-supported Ionogel Electrolytes

Meron Y. Tadesse, Zidan Zhang, Nico Marioni, Everett S Zofchak, Tyler J Duncan, Venkatraghavan Ganesan, Venkatraghavan Ganesan

N00.00125: Rapid and highly selective ion conduction via decoupling ion transport from polymer segmental relaxation in single-ion-conducting, polymer blend electrolytes

Mengying Yang, Thomas H Epps

N00.00126: Conductivity and Transference Numbers in Lithium Salt-doped Block Copolymeric Ionic Liquid Electrolytes

Zidan Zhang, Jakub Krajniak, Jacob Sass, Harnoor S Sachar, Nico Marioni, Tyler J Duncan, Venkatraghavan Ganesan

N00.00127: From Fully Stretched to Collapsed: Bottlebrush Polymer Chain Dimensions when Grafted to Nanoparticles

Jensen Sevening, Robert J Hickey

N00.00128: Nanofillers based on graphene derivatives for reinforcing polyurea coatings

Gladys Shi Xuan Tan, Siyu Chen, Daria V Andreeva

N00.00129: Asymmetric Nanoparticle Interaction with Nematic Liquid Crystals

Xiaowi Wang

N00.00130: Isothermal Compressibility of Azobenzene-Containing Epoxy-Amines Measured Using Small-Angle X-ray Scattering

Frederick L Beyer, Joseph M Dennis

N00.00131: Incorporating metals and halogens into polypeptoid-based photoresists for extreme ultraviolet lithography.

Cameron P Adams, Chenyun Yuan, Christopher K Ober, Rachel A Segalman

N00.00132: Relating Dewetting and Molecular Forces of Sandwiched Ultrathin Polymer Films

Tera Huang, Evon Petek, Reika Katsumata

N00.00133: Sustainable Superhydrophobic PVDF-grafted Cellulose Membrane for Oil/Water Separation

Yoon Huh, Joona Bang

N00.00134: Defect Healing in Graphene via Rapid Thermal Annealing with Polymeric "Nanobandage"

Claire Senger, Xiao Fan, James Nicolas M Pagaduan, Xiaoyu Zhang, Muhammad Awais Fiaz, Jinglei Ping, Shawna Hollen, Reika Katsumata

N00.00135: Genomic analysis in a solid state nanopore device using single-strand binding proteins

Alexander R Klotz, Victor Corona, Nathan Howald

N00.00136: Mesoscale Simulations of Anisotropic Patchy Nanoparticles at Oil-Water Interfaces

Grant R Kolacny, Abelardo Ramirez-Hernandez, Carlos Salinas-Soto, Esteban Urena-Benavides

N00.00137: Epoxy-Cellulose nanocrystals composites with cholesteric sturcture

Rebecca (Sujin) Lee, Marcos A Reyes-Martinez, Edwin P Chan, Jeremiah Woodcock

N00.00138: Modeling In Vitro Hyaluronan Synthesis by Non-processive Enzymes

Jan Scrimgeour

N00.00139: Poloxamer Gels in Biocompatible Ionic Liquids to Treat Middle Ear Infections

Colin K Houts, Charles Knisely, Arit Das

N00.00140: Beyond alignment: a novel mechanism for developing well-ordered block copolymer materials via low-intensity magnetic fields

Grace Kresge, Christopher A Neal, Michelle A Calabrese

N00.00141: Understanding the effect of morphology of hydrophobic polymers on ion selectivity

Eric Palacios Pineda

N00.00142: Simulation Study of Self Assembly of Block Copolymers upon Solvent Evaporation

Juhae Park, Ludwig Schneider, Juan J de Pablo

Tuesday, March 5, 2024 4:00 pm – 5:30 am, PCST

Session FF00: Virtual Poster Session I (4pm-5:30pm CST)

FF00.00002: Characterization of Impact Load Detection of Polymer Encapsulated Mechano-luminescing Particles as a Function of Temperature

Brianna Miller, Firouzeh Sabri

FF00.00003: Modeling Thermogravimetry Analysis of Polyethylene Oxide Loaded with Fullerenes
Mircea Chipara, Emmalucia Elizondo, Rene Flores, Yaiza Vazquezpereiro, Alexandro Trevino, Karen Lozano, Jefferson Reynoza

FF00.00004: The Utilization of Calcium Chloride in Combination with Gelatin-based Hydrogel for the Creation of a Mechanically Accurate Brain Phantom for Concussion Analysis and Intracranial Behavior.
Lila Schandler