

**2024**

**PROGRAM**

**INSTITUTE FOR POLYMER RESEARCH  
CELEBRATING 40 YEARS OF OFFICIAL INSTITUTE STATUS  
FORTY-SIXTH ANNUAL SYMPOSIUM  
ON POLYMER SCIENCE/ENGINEERING 2024  
E7 7303-7363  
Faculty Hall  
University of Waterloo, Waterloo, Ontario  
Wednesday May 1 and Thursday May 2, 2024**

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8:45 a.m.	<b>Open Symposium Portal</b>
8:50	<b>Welcome and Opening Remarks</b>
9:00 - 9:20	<b>Sanjay Patel, Chemistry, Waterloo</b> Could PEF Become the New FRET? <b>(Winner of 2023 IPR Award for Academic Excellence in Polymer Science/Engineering)</b>
9:20 - 10:20	<b>Industry Speaker: Dr. Steven Teerstra, Arlanxeo.</b>  Elastomers in Commercial Applications – BR, SBR, and Butyl Rubber in Tires to Chewing Gum
10:20 – 10:55	<b>Coffee</b>
10:55 – 11:20	<b><u>5-Min. Mini Presentations</u></b> 1) <b>Shayan Ghasemi</b> Unlocking the Potential of Interfacial Assembly for Aerogel Bead Fabrication 2) <b>Monica Ho</b> Polymer-MOF Composite Scaffolds for Direct Air CO <sub>2</sub> Capture 3) <b>Gillian Binley</b> Hydrogen Peroxide Induced Degradation of Polylactic Acid 4) <b>Akliu Getnet Messele</b> Development of a Multi-filler Nanocomposite Film for the Application of X-ray Shielding 5) <b>Ethan Crawford</b> Melt-blown Fibers for Oil Spill Remediation and Oil Barrier Geotextiles
11:20 – 11:40	<b>Ryan Lloyd</b> Studying the Interactions Between DNA and Cationic Surfactants By Pyrene Excimer Fluorescence and Dynamic Light Scattering
11:40 – 12:00	<b>Debela Tadele</b> “Co-encapsulation of Quercetin and $\alpha$ -Tocopherol bioactives in Zein Nanoparticles: Synergistic interactions, stability, and controlled release

12:00 - 1:00	<b>Lunch</b>
1:00 - 2:00	<b>Academic presenter: Prof. Alex Penlidis</b> Copolymerization Composition Control Policies: Batch, Semi-batch or Flow?
2:00 - 2:20	<b><u>5-Min. Mini Presentations</u></b> <b>6) Aline Braz Ramirez</b> 3D Printing of a Soft Gel with Bio-derived Solvent for Biomedical Applications <b>7) Shakiba Samsami</b> Chaotic 3D Printing of Cellulose Nanocrystal-based Hydrogels for the Fabrication of Electromagnetic Shields <b>8) Shikuan Xu</b> Chitosan thermosensitive hydrogel system <b>9) Tobechukwu Ohaka</b> Designing Recyclable Natural Rubber – CNC Vitrimers
2:20 - 2:40	<b>Saba Karimi</b> Thermal Expansion Study on Polymer Stable Glasses
2:40 – 3:00	<b>Mahnoor Mehmood</b> Characterization of Stable Polymer Glasses
3:00 - 3:20	<b>Hunter Little, Chemistry, Waterloo</b>  <b>(Winner of the 2023 IPR Award for Academic Excellence in Polymer Science/Engineering)</b>
3:20-3:40	<b>Coffee</b>
3:40 – 4:00	<b>Franklin Frasca</b> Determining the Conformations of Pyrene-Labeled Polyamines and Polyols in Solution via Pyrene Excimer Fluorescence
4:00 -4:20	<b>Kristijan Lulic</b> Pyrene Excimer Formation as a means to Investigate Persistence Length of Alkyl Methacrylate Copolymers
4:20-4:40	<b>Shahrzad Ghodrati</b> Sensing the Invisible: An Overview of Polymeric Materials for Gas Detection
4:40-5:00	<b>Saheed Hadad</b> Highly Conductive Mxene Quantum Dots/StarchNanocomposite Polymer Electrolytes for All-Solid-State Lithium-Ion Batteries:Unveiling Insights for Future Sustainable Energy Storage

5:00-5:15

**5-Min. Mini Presentations**

**10) Estatira Amirieh**

Conductive Bacteria Cellulosic Scaffolds

**11) Naixin Zhao**

Hydrogen Bond Bearing Conjugated Polymers for Fluoride Sensing

**12) Tahla Ince**

Non-Invasive Sweat Induction for Wearable Sweat-Based Biosensors

5:15

**Closing remarks**