2026

PROGRAM

INSTITUTE FOR POLYMER RESEARCH
CELEBRATING 42 YEARS OF OFFICIAL INSTITUTE STATUS
FORTY-EIGTH ANNUAL SYMPOSIUM
ON POLYMER SCIENCE/ENGINEERING 2026
PSE 7303-7363
Faculty Hall
University of Waterloo, Waterloo, Ontario
Wednesday May 6 and Thursday May 7, 2026

Wednesday May 6, 2026
(PSE 7303-7363)

8:15 a.m.	**Open Symposium Portal**
8:30 a.m.	**Welcome and Opening Remarks**
8:40 – 9:00	**Shakiba Samsami (Prof. Kamkar), Chem. Eng., Waterloo** Tuning Functional Resolution via a Hybrid Formative–Additive Manufacturing Technique **(Winner of 2026 IPR Award for Academic Excellence in Polymer Science/Engineering)**
9:00 – 9:20	**Hossein Lpakchi (Prof. Mekonnen)** Multiscale Engineering of Waterborne MWCNT–Polyurethane Inks for Direct Ink Writing of Highly Conductive Air-Dried Structures with Absorption-Dominant EMI Shielding, Sensing, and Thermal Management
9:20 – 10:10	**Industry Speaker: Dr. Jenner Ngai, NRC Ottawa.** Engineering π-Conjugated Polymers for High-Performance Sensing in Public Safety
10:10 – 10:30	**Junhao Hu (Prof. Schipper)** Design, Synthesis, and Characterization of Di-N-Oxide Pyrazine Polymers
10:30 – 10:50	**Coffee**
10:50 – 11:10	**Karthick Raj Selvam (Prof. Mekonnen)** Engineering Blow-Spun Silk Nanofibers: From Molecular Weight Control and CNC Reinforcement to CQD-Enabled Drug Delivery

11:10 – 11:30	**5-Min. Mini Presentations** 1) **Aisha Biobaku (Prof. Prince)** A Model System for Probing How Polymer Thermal Properties Influence Microplastic Formation and Behavior 2) **Kidist Worku Mebrat (Prof. Mekonnen)** Delignified and Surface-Engineered Wood for Microplastic Removal in Water Treatment 3) **Quinn Talukdar (Profs. Duhamel & Lin)** Conformation of Cyclic Poly(methyl methacrylate) Probed by Fluorescence 4) **Mahnoor Mehmood (Prof. Forrest)** Mechanical properties of thin films of ultrastable polymer glass
11:30 – 11:50	**Saba Karimi (Prof. Forrest)** Solvent processing stable polystyrene glass films
11:50 – 12:10	**Kristijan Lulic (Prof. Duhamel), Chemistry, Waterloo** Persistence Length of Poly(alkyl methacrylate) Chains in Solution and Embedded in Block Copolymer Micelles **(Winner of 2026 IPR Award for Academic Excellence in Polymer Science/Engineering)**
12:10 – 1:00	**Lunch**
1:00 – 1:50	**Academic presenter: Prof. Todd Hoare, McMaster** **In situ-gelling hydrogels for tissue engineering and biosensing applications**
1:50 – 2:10	**Mina Gorbani (Prof. Prince), Chem. Eng., Waterloo** Radical Ring-Opening Polymerization Unlocking the Potential of Vinyl Polymers for Biomedical Engineering **(Winner of 2026 IPR Award for Academic Excellence in Polymer Science/Engineering)**
2:10 – 2:30	**Hunter Little (Prof. Duhamel)** Effect of Polypeptide Composition on their Persistence Length and Implications to Protein Folding
2:30 – 2:55	**5-Min. Mini Presentations** 5) **Hailey Duggan (Prof. Prince)** Chemically Deconstructable Antimicrobial Coatings 6) **Yasamin Noorafkan (Prof. Kamkar)** Encapsulation of MOF Nanoparticles based on Microfluidics 7) **Drew Davidson (Prof. Kamkar)** High Strength Electrospun Polymers for Moisture Barrier Applications in Firefighter Gear

8) **David Dimitrienko (Prof. Schipper)**
Developing New Building Blocks for Highly Polar Conjugated Polymers

9) **Han Gia Nguyen (Prof. Tam)**
Engineering fog collectors with bio-based nanomaterials

2:55– 3:15 **Aline Braz Ramirez (Prof. Hamed Shasavan), Chem. Eng., Waterloo**
Conductive Coatings for E-Textiles via Cyrene-Based Graphene Inks

3:15 – 3:35 **Mathew Gene Scarfo (Prof. Hamed Shahsavan), Chem Eng, Waterloo**
Re-processable Artificial Muscles from Thio-Urethane Liquid Crystal Elastomers
(Winner of the 2026 IPR Award for Academic Excellence in Polymer Science/Engineering)

3:35 – 4:00 **Coffee**

4:00 – 4:20 **Tewodros Taddese Tiruneh (Prof. Mekonnen)**
Solvent-free, guar gum-stabilized, aqueous PBAT (poly (butylene adipate-co-terephthalate)) dispersion for kraft paper coating

4:20 – 4:40 **Akliu Genet (Prof. Mekonnen)**
Lead-free materials for application of X-ray shielding

4:40 – 5:00 **Lauren DiLoreto (Prof. Lin)**
Upcycling of polyolefins into covalent adaptable stress-responsive networks

5:00 – 5:20 **Noah Gallant (Prof. Duhamel)**
Surfactant Phase Separation inside Surfactant Aggregates and its Implications for Surfactant Self-Assemblies

5:20 – 5:40 **Hanyoung Choi (Prof. Tam)**
Development of Cellulose-based Filtration Systems for Microplastic Removal

5:40 – 6:00 **Tobechukwu Ohaka (Prof. Mekonnen)**
Design and Characterization of Thermoreversible Elastomer Systems

6:00 – 6:05 **Closing remarks**

Thursday May 7, 2026
(PSE 7303-7363)

8:45 a.m.	**Open Symposium Portal**
8:50	**Welcome and Opening Remarks**
9:00 - 9:50	**Prof. Elisabeth Prince, Chem Eng, Waterloo** Installing dynamic covalent bonds radically polymerized materials
9:50 - 10:40	**Prof. Milad Kamkar, Chem Eng, Waterloo** Hybrid Hydrogels and Aerogels by Advanced Manufacturing Techniques
10:40 – 11:00	coffee break
11:00 – 11:50	**Prof. Yangju Lin, Chemistry, Waterloo** Molecular Tayloring of Mechanochromic Polymers
11:50 – 12:40	**Prof. Hamed Shahsavan, Chemical Engineering, Waterloo** Molecule-to-robot approach based on hydrogels and liquid crystal elastomers
12:40 – 12:45	**Closing remarks**