

Whitney S. Loo

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Employment

- 07/2023 – Present Conway Assistant Professor
01/2023 – 06/2023 Assistant Professor
Department of Chemical and Biological Engineering
University of Wisconsin–Madison, Madison, WI
- 09/2020 – 11/2022 Postdoctoral Scholar
Pritzker School of Molecular Engineering, Paul F. Nealey Group
University of Chicago, Chicago, IL
Nanofabrication Facility, Molecular Foundry, Ricardo Ruiz Group
Lawrence Berkeley National Lab, Berkeley, CA
- 08/2016 – 08/2020 National Science Foundation Graduate Research Fellow
09/2015 – 08/2016 Graduate Student Researcher
Department of Chemical and Biomolecular Engineering, Nitash P. Balsara Group
University of California Berkeley, Berkeley, CA

Education

University of California Berkeley Berkeley, CA
Ph.D. Chemical and Biomolecular Engineering, August 2020.
Advisor: Professor Nitash P. Balsara
Thesis: Thermodynamics and Dynamics of Block Copolymer Electrolytes

Massachusetts Institute of Technology Cambridge, MA
BS Chemical Engineering with Minor in Chemistry, June 2015.

Awards and Honors

- 2024 Department of Energy Early Career Research Award (DOE)
2024 ACS Petroleum Research Foundation Doctoral New Investigator
2024 Ralph E. Powe Junior Faculty Enhancement Award Recipient (ORAU)
2023 Named Conway Assistant Professor in the Dept. of Chem. and Biol. Engr.
2020 Winner, Best Poster Award (PMSE Division ACS Fall Meeting)
2019 Finalist, Excellence in Graduate Polymer Research (AIChE)
2019 Participant, MIT Rising Stars in Chemical Engineering
2019 Finalist, Padden Award (APS DPOLY)
2018 Excellence in Lab Safety Award: Large Chemical Sciences (UC Berkeley)
2016 – 2020 National Science Foundation Graduate Research Fellowship
2015 MIT Eloranta Research Fellowship
2015 MIT Department of Chemical Engineering Outstanding Teaching Assistant Award
2014, 2015 MIT Department of Chemical Engineering Special Service Award

Publications (* Equal Contributions) (Citations: 1668, h-index = 23, as of 7/2025)

- (45) Wu, H.J., Breining, W., He, L., Lynn, D., **Loo, W.S.**, The Influence of Charge Correlation and Ion Solvation on the Phase Behavior of Single-Ion Conducting Polymer Blend Electrolytes Using SAXS/SANS, *Macromolecules*, **2025**, 58, 8868-8876. DOI: 10.1021/acs.macromol.5c00860.
- (44) Gallmeyer, M., Wu, H.J., Breining, W., Lynn, D., **Loo, W.S.**, Thermal Properties and Ionic Conductivity in Salt-Containing POEM/PEO Polymer Blend Electrolytes, *ACS Applied Polymer Materials*, **2025**, 7, 8055-8064. *Invited Manuscript*. DOI: 10.1021/acsapm.5c01118
- (43) **Loo W.S.**, Chang B.S., Yu B., Dhuey S., Nealey P.F., Ruiz R., Effect of pattern transfer process on roughness of block copolymer patterns from directed self-assembly, *J. Micro/Nanopattern. Mater. Metrol.*, **2025**, 24(1), 013002, DOI: 10.1117/1.JMM.24.1.013002.
- (42) Chen, M., Bustillo, K.C., Patel, V., Savitzky, B.H., Sternlicht, H., Maslyn, J.A., **Loo, W.S.**, Ciston, J., Ophus, C., Jiang, X., Balsara, N.P., Minor, A.M. Direct Imaging of the Crystalline Domains and Their Orientation in the PS-*b*-PEO Block Copolymer with 4D STEM. *Macromolecules* **2024**, 57, 12, 5629-5638. DOI: 10.1021/acs.macromol.3c02231
- (41) Patel, B.B., Feng, H., **Loo, W.S.**, Snyder, C.R., Eom, C., Murphy, J., Sunday, D.F., Nealey, P.F., DeLongchamp, D.M. Self-Assembly of Hierarchical High- χ Fluorinated Block Copolymers with an Orthogonal Smetic-within-Lamellae 3 nm Sublattice and Vertical Surface Orientation. *ACS Nano* **2024**, 18, 17, 11311-11322. DOI: 10.1021/acsnano.4c00664.
- (40) Yu, B.; Chang, B. S.; **Loo, W. S.**; Dhuey, S.; O'Reilly, P.; Ashby, P. D.; Connolly, M. D.; Tikhomirov, G.; Zuckermann, R. N.; Ruiz, R. Nanopatterned Monolayers of Bioinspired, Sequence-Defined Polypeptoid Brushes for Semiconductor/Bio Interfaces. *ACS Nano* **2024**, 18, 7411-7423. DOI: 10.1021/acsnano.3c10204.
- (39) Abdo, E.E., Grundy, L.S., Galluzzo, M.D., **Loo, W.S.**, Fong, A.Y., Takacs, C.J., Balsara, N.P., Cylinder-Gyroid Phase Transition in a Block Copolymer Electrolyte Induced by Ionic Current, *Macromolecules*, **2024**, 57, 503-513. DOI: 10.1021/acs.macromol.3c02014
- (38) Maslyn, J.A., Barai, P., McEntush, K.D., Harry, K.J., Frenck, L., **Loo, W.S.**, Ho, A.S., Parkinson, D.Y., Srinivasan, V., Balsara, N.P., Plating and Stripping of Lithium Metal Stabilized by a Block Copolymer Electrolyte: Local Current Density Measurement and Modeling, *J. Electrochem. Soc.* **170**, 070510. DOI: 10.1149/1945-7111/ace12f
- (37) Feng, H., Schneider, L., **Loo, W.S.**, Craig, G.S.W., Eom, C., Wang, Z., Ruiz, R.R., de Pablo, J.J., Rowan, S.J., Nealey, P.F. Side Chain Dipole Orientation and Its Effect on Microphase Separation: Experiment and Simulation via Structural Isomer Variation, *Macromolecules*, **2023**, 56, 4591-4601. DOI: 10.1021/acs.macromol.3c00630
- (36) **Loo, W.S.**, Feng, H. Ferron, T.J., Ruiz, R.R., Sunday, D.F., Nealey, P.F. Determining Thermodynamics of A-*b*-(B-*r*-C) Copolymers, *ACS Macro Lett*, **2023**, 12, 118-124. DOI: 10.1021/acsmacrolett.2c00645
- (35) Chang, B. *, **Loo, W.S. ***, Yu, B., Dhuey, S., Nealey, P.F., Ruiz, R. Sequential Brush Grafting for Chemically and Dimensionally Tolerant Directed Self-Assembly of Block Copolymers. *ACS Appl. Mater. Interfaces*, **2023**, 15, 1, 2020-2029. DOI: 10.1021/acsami.2c16508
- (34) Feng, H., Dolejsi, M., Zhu, N., Yim, S., **Loo, W.S.**, Ma, P., Zhou, C., Craig, G., Chen, W., Wan, L., Ruiz, R., de Pablo, J., Rowan, S., Nealey, P. Optimized Design of Block Copolymers with Covarying Properties for Nanolithography. *Nat. Mater.*, **2022**, 21, 1426-1433. DOI: 10.1038/s41563-022-01392-1
- (33) Grundy, L.S., Galluzzo, M.D., **Loo, W.S.**, Fong, A.Y., Balsara, N.P., Takacs, C.J., Inaccessibly Polarization-Induced Phase Transitions in a Block Copolymer Electrolyte. *Macromolecules*, **2022**, 55, 17, 7637-7649. DOI: 10.1021/acs.macromol.2c00922

- (32) **Loo, W.S.***, Fang, C.*, Balsara, N.P., Wang, R., Uncovering Local Correlations in Polymer Electrolytes Through a Combined Experimental and Computational Approach. *Macromolecules*, **2021**, 54, 14, 6639-6648. DOI: 10.1021/acs.macromol.1c00995
- (31) Veeraraghavan, V.D., Frenck, L., Maslyn, J.A., **Loo, W.S.**, Parkinson, D.Y., Balsara, N.P., Evolution of Protrusions on Lithium Metal Anodes Stabilized by a Solid Block Copolymer Electrolyte Studied Using Time-Resolved X-ray Tomography, *ACS Applied Materials and Interfaces*, **2021**, 13, 23, 27006-27018. DOI: 10.1021/acsami.1c04582
- (30) Maslyn, J.A., Frenck, L., Veeraraghavan, V.D., Muller, A., Ho, A.S., Marwaha, H., **Loo, W.S.**, Parkinson, D.Y., Minor, A.M., Balsara, N.P., Limiting Current in Nanostructured Block Copolymer Electrolytes, *Macromolecules*, **2021**, 54, 4010-4022. DOI: 10.1021/acs.macromol.1c00425
- (29) Fang, C., **Loo, W.S.**, Wang, R., Salt Activity Coefficient and Chain Statistics in Poly(ethylene oxide)-based Electrolytes, *Macromolecules*, **2021**, 54, 2873-2881. DOI: 10.1021/acs.macromol.0c01850
- (28) Shah, N., Dadashi-Silab, S., Galluzzo, M., Chakraborty, S., **Loo, W.**, Matyjaszewski, K., Balsara, N.P. Effect of Added Salt on Disordered Poly(ethylene oxide)-Block-Poly(methyl methacrylate) Copolymer Electrolytes, *Macromolecules*, **2021**, 54, 1414-1424. DOI: 10.1021/acs.macromol.0c02493
- (27) Galluzzo, M.D., **Loo, W.S.**, Zhu, C., Schaible, E., Balsara, N.P. Dynamic Structure and Phase Behavior of a Block Copolymer Electrolyte under Dc Polarization, *ACS Applied Materials and Interfaces*, **2020**, 12, 57421-57430. DOI: 10.1021/acsami.0c16209
- (26) Frenck, L., Veeraraghavan, V., Maslyn, J.A., Muller, A., Ho, A., **Loo, W.S.**, Minor, A., Balsara, N.P. Effect of Salt Concentration Profiles on Protrusion Growth in Lithium-Polymer-Lithium Cells, *Solid State Ionics*, **2020**, 358, 115517. DOI: 10.1016/j.ssi.2020.115517
- (25) Ho, A., Barai, P., Maslyn, J.A., Frenck, L., **Loo, W.S.**, Parkinson, D., Srinivasan, V., Balsara, N.P. Uncovering the Relationship between Diameter and Height of Electrodeposited Lithium Protrusions in a Rigid Electrolyte, *ACS Appl. Energy Mater.*, **2020**, 3 (10), 9645-9655. DOI: 10.1021/acsam.0c01175
- (24) Gao, K. W., **Loo, W. S.**, Snyder, R., Abel, B., Choo, Y., Lee, A., Teixeira, S., Garetz, B., Coates, G., Balsara, N.P. Miscible Polymer Blend Electrolytes, *Macromolecules*, **2020**, 53 (14), 5728-5739. DOI: 10.1021/acs.macromol.0c00747
- (23) Maslyn, J.A., McEntush, K., Harry, K., Frenck, L., **Loo, W. S.**, Parkinson, D., Balsara, N.P. Preferential Stripping of a Lithium Protrusion Resulting in Recovery of a Planar Electrode, *J. Electrochem. Soc.*, **2020**, 167 (10), 100553. DOI: 10.1149/1945-7111/ab9d62
- (22) Hou, K. H., **Loo, W. S.**, Balsara, N. P., Qin, J.; Comparing Experimental phase Behavior of Ion-Doped Block Copolymers with Theoretical Predictions Based on Selective Ion Solvation. *Macromolecules*. **2020**, 53, 3956-3966. DOI: 10.1021/acs.macromol.0c00559
- (21) **Loo, W. S.**, Faraone, A. A., Grundy, L. S., Gao, K. W., Balsara, N. P.; Polymer Dynamics in Block Copolymer Electrolytes Detected by Neutron Spin Echo. *ACS Macro Lett.*, **2020**, 9, 639-645. DOI: 10.1021/acsmacrolett.0c00236
- (20) Mongcopa, K. I., Gribble, D. A., **Loo, W. S.**, Tyagi, M. S., Mullin, S. A., Balsara, N. P. Segmental Dynamics Measured by Quasi-elastic Neutron Scattering and Ion Transport in Chemically-Distinct Polymer Electrolytes. *Macromolecules*. **2020**, 53, 2406-2411. DOI: 10.1021/acs.macromol.0c00091
- (19) Galluzzo, M.D., **Loo W.S.**, Wang, A., Walton, A., Maslyn, J., Balsara, N.P.; Measurement of Three Transport Coefficients and the Thermodynamics Factor in Block Copolymer Electrolytes with Different Morphologies, *J. Phys. Chem. B*, **2020**, 124, 921-935. DOI: 10.1021/acs.jpcc.9c11066
- (18) Frenck, L., Maslyn, J.A., **Loo, W.S.**, Parkinson, D., Balsara, N.P.; Impact of Salt Concentration on Non-uniform Lithium Electrodeposition through Rigid Block Copolymer Electrolytes, *ACS Appl. Mater. Interfaces*, **2019**, 11, 47878-47885. DOI: 10.1021/acsami.9b15606

- (17) **Loo, W.S.**, Mongcopa, K.I., Gribble, D.A., Faraone, A.A., Balsara, N.P.; Investigating the Effect of Added Salt on the Chain Dimensions of Poly(ethylene oxide) through Small Angle Neutron Scattering, *Macromolecules*, **2019**, 52 (22), 8724-8732. DOI: 10.1021/acs.macromol.9b01509
- (16) Maslyn, J.A., Frenck, L., **Loo, W.S.**, Parkinson, D., Balsara, N.P.; Extended Cycling through Rigid Block Copolymer Electrolytes Enabled by Reducing Impurities in Lithium Metal Electrodes, *ACS Appl. Energy Mater.*, **2019**, 2 (11), 8197-8206. DOI: 10.1021/acsaeem.9b01685
- (15) Gribble, D.A., Frenck, L., Shah, D. B., Maslyn, J. A., **Loo, W.S.**, Mongcopa, K.I., Pesko, D., Balsara, N.P.; Comparing Experimental Measurements of Limiting Current in Polymer Electrolytes with Theoretical Predictions, *J. Electrochem. Soc.*, **2019**, 166 (14), A3228-A3234. DOI: 10.1149/2.03919jes
- (14) **Loo, W. S.**, Sethi, G. K., Teran, A. A., Galluzzo, M. D., Maslyn, J. A., Oh, H. J., Moncopa, K. I., Balsara, N. P.; Composition Dependence of Flory Huggins Interactions Parameters of Block Copolymer Electrolytes and the Isotaxis Point, *Macromolecules*, **2019**, 52 (15), 5590-5601. DOI: 10.1021/acs.macromol.9b00884
- (13) Sethi, G., Jung, H. A., **Loo, W. S.**, Sawhney, S., Park, M. J., Balsara, N. P., Villaluenga, I.; Structure and Thermodynamics of Hybrid Organic-Inorganic Diblock Copolymers with Salt, *Macromolecules*, **2019**, 52 (9), 3165-3175. DOI: 10.1021/acs.macromol.9b00042
- (12) Galluzzo, M. D., Halat, D., **Loo, W. S.**, Mullin, S. A., Reimer, J., Balsara, N. P.; Dissolution of Lithium Metal in Poly(ethylene oxide), *ACS Energy Lett.*, **2019**, 4, 903-907. DOI: 10.1021/acsenergylett.9b00459
- (11) **Loo, W. S.**, Balsara, N. P.; Organizing Thermodynamic Data obtained from Salt-Containing Polymer Blends and Block Copolymers, *J Poly. Sci. B*, **2019**, 57, 1177-1187. DOI: 10.1002/polb.24800
- (10) Li, X.*, **Loo, W. S.***, Jiang, X., Wang, X., Galluzzo, M., Mongcopa, K. I., Wang, A., Balsara, N. P., Garetz, B.; Confined versus Unconfined Crystallization in Block Copolymer/Salt Mixtures Studied by Depolarized Light Scattering, *Macromolecules*, **2019**, 52 3, 982-991. DOI: 10.1021/acs.macromol.8b02142
- (9) Grundy, L., Sethi, G., Galluzzo, M., **Loo, W. S.**, Maslyn, J., Teran, A., Thelen, J., Timachova, K., Reimer, J., Madsen, L., Balsara, N. P.; Detection of the Order-to-Disorder Transition in Block Copolymer Electrolytes Using Quadrupolar ⁷Li NMR Splitting, *ACS Macro. Lett.*, **2019**, 8, 107-112. DOI: 10.1021/acsmacrolett.8b00809
- (8) Oh, H. J., Aboian, M., Yi, M., Maslyn, J. A., **Loo, W. S.**, Jiang, X., Parkinson, D., Wilson, M., Moore, T., Yee, C., Robbins, G., Barth, F., DeSimone, J. M., Hetts, S., Balsara, N. P.; 3D Printed Absorber for Capturing Chemotherapy Drugs before they Spread through the Body, *ACS Cent. Sci.*, **2019**, 5 (3), 419-427. DOI: 10.1021/acscentsci.8b00700
- (7) Maslyn, J. A., **Loo, W. S.**, McEntush, K., Oh, H.J., Harry, K., Parkinson, D., Balsara, N. P.; Growth of Lithium Dendrites and Globules through a Solid Block Copolymer Electrolyte as a Function of Current Density, *J. Phy. Chem. C*, **2018**, 122 (47), 26797-26804. DOI: 10.1021/acs.jpcc.8b06355
- (6) Wang, D., Shah, D., Maslyn, J. A., **Loo, W. S.**, Nelson, E., Latimer, M., Feng, J., Prendergast, D., Pascal, T., Balsara, N. P.; Discharge Mechanism in a Solid-State Lithium-Sulfur Cell by Operando X-ray Absorption Spectroscopy, *J. Electrochem. Soc.*, **2018**, 165 (14), A3487-A3495. DOI: 10.1149/2.0981814jes
- (5) **Loo, W. S.**, Galluzzo, M. D., Li, X., Maslyn, J. A., Oh, H. J., Mongcopa, K. I., Zhu, C., Wang, A. A., Wang, X., Garetz, B. A., Balsara, N. P.; Phase Behavior of Mixtures of Block Copolymers and a Lithium Salt, *J. Phy. Chem. B*, **2018**, 122 (33), 8065-8074.
- (4) Sethi, G. K., Jiang, X., Chakraborty, R., **Loo, W. S.**, Villaluenga, I., Balsara, N. P. Anomalous Self-Assembly and Ion Transport in Nanostructured Organic – Inorganic Solid Electrolytes. *ACS Macro Lett.* **2018**, 7, 1056-1061. DOI: 10.1021/acsmacrolett.8b00583

(3) **Loo, W. S.**, Jiang, X., Maslyn, J. A., Oh, H. J., Zhu, C., Downing, K. H., Balsara, N. P. Reentrant phase behavior and coexistence in asymmetric block copolymer electrolytes. *Soft Matter*, **2018**, *14*, 2789 – 2795. DOI: 10.1039/c8sm00175h

(2) Wang, X.; Li, X.; **Loo, W.**; Newstein, M. C.; Balsara, N. P.; Garetz, B. A. Depolarized Scattering from Block Copolymer Grains Using Circularly Polarized Light. *Macromolecules* **2017**, *50* (13), 5122-5131. DOI: 10.1021/acs.macromol.7b01048

(1) Veiseh, O., Doloff, J.C., Ma, M., Vegas, A.J., Tam, H.H., Bader, A.R., Li, J., Langan, E., Wyckoff, J., **Loo, W.S.**, *et al.*, Size- and shape-dependent foreign body immune response to materials implanted in rodents and non-human primates. *Nat. Mater.* **2015**, *14*, 643–651. DOI: 10.1038/nmat4290

Peer Reviewer for *Macromolecules* (2019-Present), *ACS Applied Materials and Interfaces* (2023-Present), *Journal of Polymer Science* (2025-Present), *Nature Physics* (2024).

Invited Presentations

- (14) 06/2025 International Conference on Science and Technology of Complex Fluids, San Luis Potosí, MX
“Investigating the Thermodynamics of Single Ion Conducting Polymer Blend Electrolytes Using X-ray and Neutron Scattering.”
- (13) 06/2025 Midwest Thermodynamics and Statistical Mechanics Conference, Madison, WI
“Investigating the Thermodynamics of Single Ion Conducting Polymer Blend Electrolytes Using X-ray and Neutron Scattering.”
- (12) 04/2025 Materials Research Society, Spring Meeting, Seattle, WA
“Direct Visualization of Block Copolymer Brush Monolayers in Lithographic Patterns via Metal Oxide Deposition”
- (11) 10/2024 American Institute of Chemical Engineers Annual Meeting, San Diego, CA
“Self-Healing Directed Self-Assembly of A-*b*-(B-*r*-C) Copolymers”
- (10) 08/2024 American Chemical Society Fall Meeting, Denver, CO
“Self-Healing Directed Self-Assembly of A-*b*-(B-*r*-C) Copolymers”
- (9) 04/2024 Wisconsin Energy Institute: Sustainable Energy Seminar, Madison, WI
“Polymer Electrolytes for Next Generation Li Metal Batteries”
- (8) 06/2023 Telluride Science Workshop: Molecular Engineering of Soft Matter, Telluride, CO
“Self-Healing Directed Self-Assembly of A-*b*-(B-*r*-C) Copolymers”
- (7) 09/2022 Molecular Foundry Seminar Series, Berkeley, CA
“Self-Healing Directed Self-Assembly of Block Copolymers for Lithographic Applications”
- (6) 10/2020 P3S Webinar Series, *Virtual Format*
“The Effect of Salt on Polymer Dynamics through Neutron Spin-Echo Spectroscopy”
- (5) 1/2020 NCNR Division Seminar, NIST, Gaithersburg, MD,
“Using neutron scattering techniques to probe the effect of salt on the chain dimensions and segmental dynamics of polymer electrolytes”
- (4) 11/2019 AIChE Annual Meeting, Orlando, FL
“Investigating the Effect of Salt on Segmental Dynamics in Block Copolymer Electrolytes for Lithium Batteries”
- (3) 9/2019 Chemical Engineering Department Seminar, Berkeley, CA
“Interaction parameters governing self-assembly of ion-containing block copolymers”
- (2) 3/2019 APS March Meeting, Boston, MA
“Interaction parameters governing self-assembly of ion-containing block copolymers”
- (1) 7/2018 Gordon Research Seminar Polymer Physics, Mount Holyoke, MA
“Probing coexisting ordered structures in block copolymer electrolytes with X-ray scattering techniques”

Contributed Presentations

- (18) 10/2024 AIChE Annual Meeting, San Diego, CA
“Crystallinity, Thermal Properties and Conductivity in Salt-Containing Polymer Electrolyte Blends”
- (17) 03/2024 ACS Spring Meeting, New Orleans, LA
“Single Ion Conducting Polymer Blend Electrolytes”
- (16) 03/2023 ACS Spring Meeting, Indianapolis, IN
“Self-Healing Directed Self-Assembly of Block Copolymers for Lithographic Applications”
- (15) 03/2023 APS March Meeting, Las Vegas, NV
“Self-Healing Directed Self-Assembly of Block Copolymers for Lithographic Applications”
- (14) 08/2022 Molecular Foundry User Meeting, Berkeley, CA
“Self-Healing Directed Self-Assembly of Block Copolymers for Lithographic Applications”, *Poster Presentation*
- (13) 07/2022 Gordon Research Conference, Polymer Physics, South Hadley MA
“Self-Healing Directed Self-Assembly of Block Copolymers for Lithographic Applications”, *Poster Presentation*
- (12) 06/2022 Tosoh Polymer Conference, Hollywood, CA
“Self-Healing Directed Self-Assembly of Block Copolymers for Lithographic Applications”, *Poster Presentation*
- (11) 04/2022 SPIE Advanced Lithography and Patterning, San Jose CA
“Effect of Pattern Transfer Process on Resulting Roughness of Block Copolymer Patterns from Directed Self-Assembly”
- (10) 03/2022 APS March Meeting, Chicago IL
“Determining Lamellar Structure with Soft X-ray Reflectivity”
- (9) 11/2021 AIChE Annual Meeting, Boston MA
“Fine Tuning the Interaction Parameter for Sub-10 nm Block Copolymer Directed Self-Assembly”
- (8) 03/2021 APS March Meeting, *Virtual Meeting*
“Determining Lamellar Structure with Soft X-ray Reflectivity”
- (7) 11/2020 AIChE Annual Meeting, *Virtual Meeting*
“The Effect of Salt on Polymer Dynamics through Neutron Spin-Echo Spectroscopy”
- (6) 8/2020 ACS Fall Annual Meeting, *Virtual Meeting*, **Winner Best Poster Prize**
“Polymer Dynamics in Block Copolymer Electrolytes detected by Neutron Spin-Echo”, *Poster Presentation, Selected for Participation in Sci-Mix Poster Session*
- (5) 3/2020 APS March Meeting, Denver CO, *Virtual Session*
“The Effect of Salt on Polymer Dynamics through Neutron Spin-Echo Spectroscopy”,
- (4) 10/2018 Advanced Light Source User Meeting, Berkeley CA
“Phase behavior of block copolymers mixed with a Lithium salt”, *Poster Presentation*
- (3) 7/2018 Gordon Research Conference Polymer Physics, Mount Holyoke, MA
“Phase behavior of block copolymers mixed with a Lithium salt”, *Poster Presentation*
- (2) 3/2018 APS March Meeting, Los Angeles, CA
“Probing coexisting ordered structures in block copolymer electrolytes with X-ray scattering techniques”
- (1) 3/2017 APS March Meeting, New Orleans, LA
“The effect of salt on the morphologies of compositionally asymmetric block copolymer electrolytes”

Professional Affiliations

American Physical Society, American Institute of Chemical Engineers, American Chemical Society

Service and Outreach

- (11) Chair, (2025-2026), Vice Chair (2024-2025), Member (2023-2024), Advanced Light Source User Executive Committee
- (10) Member (2025), Scientific Advisory Committee, Advanced Light Source
- (9) Member (2024-present), Doolittle Award Committee, PMSE Division of ACS
- (8) Focus Session Organizer and Session Chair (2023-2026), APS March Meeting
- (7) Session Organizer (2024-2025), Division 08A, AIChE Annual Meeting, San Diego, CA
- (6) Invited Participant (2023), Neutrons for the Future Workshop, Rockville, MD
- (5) Visioning Workshop Organizer (2023), Advanced Light Source User Meeting, Berkeley, CA
- (4) Member, Nominating Committee (2022-2024), DPOLY Division of APS
- (3) Early Career Member-at-Large of Executive Committee (2021-2023), DPOLY Division of APS
- (2) Chair (2020-2022), 2022 Polymer Physics Gordon Research Seminar, Mount Holyoke, MA
- (1) Discussion Leader (2022), 2022 Tosoh Polymer Conference, Los Angeles, CA

Teaching Experience

- (6) Instructor, *Polymer Science and Technology*, CBE540, Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Fall 2025. (42 students)
- (5) Instructor, *Thermodynamics of Mixtures*, CBE311, Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Spring 2025. (35 students)
- (4) Instructor, *Polymer Science and Technology*, CBE540, Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Fall 2024. (30 students)
- (3) Instructor, *Polymer Science and Technology*, CBE540, Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Spring 2024. (24 students)
- (2) Instructor *Thermodynamics of Mixtures*, CBE311, Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Fall 2023. (52 students)
- (1) Instructor, *Polymer Science and Technology*, CBE540, Department of Chemical and Biological Engineering, University of Wisconsin-Madison, Spring 2023. (36 students)

Students Supervised

PhD Students

- (1) Jenny Wu, University of Wisconsin-Madison, Fall 2022-present
- (2) Marissa Gallmeyer, University of Wisconsin-Madison, Fall 2022-present
- (3) Jingchao Qin, University of Wisconsin-Madison, Fall 2023-present
- (4) Stephanie Brown, University of Wisconsin-Madison, Fall 2023-present
- (5) Stanley Koesman, University of Wisconsin-Madison, Fall 2024-present
- (6) Thorfinnur Baldvinsson, University of Wisconsin-Madison, Fall 2024-present

Undergraduate Students

- (1) Benjamin Bossman, June 2025-present
- (2) Maxwell Bartlet, January 2025-present
- (3) Yaolei Zheng, January 2025-present
- (4) Brodin Sluis, January 2025-present

Undergraduate Student Alumni

- (1) Aidiel Ikmal Bin Abu Hassan, May 2024-August 2025, current: University of Minnesota PhD
- (2) Adelaide Germann (NSF REU), University of Illinois Urbana-Champaign, May 2025-Aug 2025, current: University of Illinois Urbana-Champaign
- (3) Teodor Andoni, September 2024-May 2025
- (4) Nidhi Ramesh, September 2023-May 2024, current: Proctor & Gamble

- (5) Cole Pool (NSF REU), Oklahoma University, May 2023-August 2023, current: Oklahoma University
- (6) Loreli Huber (NSF REU), Miami University, May 2024-August 2024, current: Miami University
- (7) Akshith Vikram, September 2023-December 2024, current: University of Wisconsin-Madison

Current Support

- ACS Petroleum Research Foundation – Doctoral New Investigator
“Reactive Block Copolymer Compatibilizers for Mechanical Recycling of Petroleum Derived Waste Plastics”
 09/1/2025-08/31/2027 Total Award: \$110,000
- UW-Madison – Research Forward
“Designing Sustainable Materials and Chemistries for the Renewable Hydrogen Economy”
 07/01/2025-06/31/2027 Total Award: \$500,000 Award to Loo: \$123,941
- WiSys – Ignite Applied Research– Krishna (PI)
“Developing Hexanetetrol as a New Biomass-Based Monomer for the Chemical Industry”
 07/01/2025-08/31/2026 Total Award: \$50,000 Award to Loo: \$15,483
- University of Wisconsin-Madison – Graduate School Fall Competition
“Polymer Nanocomposites with Dual Inorganic Phases”
 07/01/2025-06/31/2026 Total Award: \$56,460
- Semiconductor Research Corporation (SRC)
“Bottlebrush Block Copolymers for sub-12nm Patterning with EUV and DSA”
 01/01/2025-12/31/2025 Total Award: \$135,000 Award to Loo: \$25,318
- DOE Basic Energy Sciences – Early Career Program
“Neutron Scattering Studies of Nanoscopic Structure and Dynamics of Single Ion Conducting Polymer Blend Electrolytes”
 07/1/2024-06/31/2029 Total Award: \$875,000
- NSF – UW-Madison MRSEC Seed Grant
“Uncovering the Molecular Mechanism of Coupling Between Ion and Polymer Segmental Mobility in Glassy Polyelectrolyte Blends”
 09/1/2024-08/31/2026 Total Award: \$179,961
- NSF – CHE – FuSe-Future of Semiconductors
“FuSe: Precise Sequence Specific Block Copolymers for Directed Self-Assembly - Co-Design of Lithographic Materials for Pattern Quality, Scaling, and Manufacturing”
 11/1/2023-10/31/2026 Total Award: \$1,924,988 Award to Loo: \$365,908

Past Support:

- ORAU – Ralph E. Powe Junior Faculty Enhancement Award
“Thermodynamics of Single-Ion Conducting Polymer Blend Electrolytes”
 06/1/2024-05/31/2025 Total Award: \$5,000