Wenlin Zhang

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Education

University of Minnesota	Chemical Engineering	B.S. 2012
The Pennsylvania State University	Chemical Engineering	Ph.D. 2017

Appointments

07/20–present	Assistant Professor of Chemistry, Dartmouth College
08/17–07/20	Post-doctoral Research Fellow with Ronald G. Larson, University of Michigan

Honors

Finalist, Frank J. Padden Jr. Award, American Physical Society 2017

Finalist, Excellence in Graduate Polymer Research, American Institute of Chemical Engineers 2015

Charles Mann Scholarship, University of Minnesota, 2010-2011

Publications

16. "Effect of flow-induced nematic order on polyethylene crystal nucleation", **Zhang, W.**; Larson, R.G., *submitted* 2020.

15. "Inelastic neutron scattering probes intermolecular lattice modes that limit charge transport in organic semiconductors", Adhikari, J.M.; Zhan, P.; Calitree, B.D.; **Zhang, W.**; Fair, R.; Harrelson, T.F.; Faller, R.; Moule, A.J.; Milner, S.T.; Maranas, J.K.; Hickner, M.A.; Gomez, E.D., *submitted* 2020.

14. "Modeling inter-colloidal interactions induced by adsorption of mobile telechelic polymers onto particle surfaces", **Zhang, W.***; Travitz, A.*; Larson, R.G., *Macromolecules*, 2019, *52*, 5357–5365,. *Equal contributions.

13. "A metastable nematic precursor accelerates polyethylene oligomer crystallization as determined by atomistic simulations and self-consistent field theory ", **Zhang, W.**; Larson, R.G., *Journal of Chemical Physics*, 2019, *150*, 244903.

12. "Thermal fluctuations lead to cumulative disorder and enhance charge transport in conjugated polymers", **Zhang, W.**; Bombile, J.H.; Weisen, A.R.; Xie, R.; Colby, R.H.; Janik, M.J.; Milner, S.T.; Gomez, E.D., *Macromolecular Rapid Communications*, 2019, *40*, 1900134.

11. "Tension-induced nematic phase separation in bidisperse homopolymer melts", **Zhang, W.**; Larson, R.G., *ACS Central Science*, 2018, *4*, 1545-1550.

10. "Side chain length affects backbone dynamics in poly(3-alkylthiophene)s ", Zhan, P.; **Zhang, W.**; Jacobsm I.E.; Nisson, D.M.; Xie, R.; Weissen A.R.; Colby, R.H.; Moulé, A.J.; Milner, S.T.; Maranas, J.K.; Gomez, E.D., *Journal of Polymer Science Part B*, 2018, *56*, 1193-1202.

9. "Direct all-atom molecular dynamics simulations of the effects of short chain branching on polyethylene oligomer crystal nucleation", **Zhang, W.**; Larson, R.G., *Macromolecules*, 2018, *51*, 4762-4769.

8. "Nematic order imposes molecular weight effect on charge transport in conjugated polymers", **Zhang, W.**; Milner, S.T.; Gomez, E.D., *ACS Central Science*, 2018, *4*, 413-421.

7. "Predicting Flory-Huggins χ from simulations", **Zhang, W.**; Gomez, E.D.; Milner, S.T., *Physical Review Letters*, 2017, *119*, 017801.

6. "Using surface-induced ordering to probe the isotropic-to-nematic transition for semiflexible polymers", **Zhang, W.**; Gomez, E.D.; Milner, S.T., *Soft Matter*, 2016, *12*, 6141-6147.

5. "Predicting the Flory-Huggins χ parameter for polymers with stiffness mismatch from molecular dynamics simulations", Kozuch, D.J.; **Zhang, W.**; Milner, S.T., *Polymers*, 2016, *8*, 241.

4. "Molecular Rectification in Conjugated Block Copolymer Photovoltaics", Grieco, C.; Aplan, M.P.; Rimshaw, A.; Lee, Y; Le, T.P.; **Zhang, W.**; Wang, Q.; Milner, S.T.; Gomez, E.D.; Asbury, J.A., *Journal of Physical Chemistry C*, 2016, *120*, 6978-6988.

3. "Surface induced alignment for semiflexible polymers", **Zhang, W.**; Gomez, E.D.; Milner, S.T., *Macromolecules*, 2016, *49*, 963-971.

2. "Predicting nematic phases of semiflexible polymers", **Zhang, W.**; Gomez, E.D.; Milner, S.T., *Macromolecules*, 2015, *48*, 1454-1462.

1. "Predicting chain dimensions of semiflexible polymers from dihedral potentials", **Zhang, W.**; Gomez, E.D.; Milner, S.T., *Macromolecules*, 2014, *47*, 6453-6461.

Presentations

14. Oral presentation. "Modeling Inter-Colloidal Interactions Induced by Adsorption of Mobile Telechelic Polymers onto Particle Surfaces", **Zhang, W.**; Larson, R.G., Annual Meeting of the American Institute of Chemical Engineers, Orlando, FL, November 2019.

13. Oral presentation. "Tension-induced nematic phase separation in bidisperse homopolymer melt", **Zhang, W.**; Larson, R.G., Annual Meeting of the American Institute of Chemical Engineers, Orlando, FL, November 2019.

12. Poster presentation."Role of stretched chains in flow-induced nucleation of polyethylene", **Zhang, W.**; Larson, R.G., Gordon Research Conferences: Crystal Growth and Assembly, Southern New Hampshire University, NH, June 2019

11. Oral presentation. "Tension-Induced Nematic Phase Separation in Homopolymer Melts", **Zhang, W.**; Larson, R.G., Annual Meeting of the American Physical Society, Boston, MA, March 2019.

10. **Invited lecture**. "Predicting polymer phase behaviors from molecular structures", Zhang, W., Departmental Seminar, Chemical Engineering, University of Virginia, Charlottesville, VA, February 2019.

9. Poster presentation. "Tension-induced nematic phase separation in bidisperse homopolymer melt", **Zhang, W.**; Larson, R.G., Gordon Research Conferences: Polymer Physics, Mount Holyoke College, MA, July 2018

8. **Invited presentation**. "Effect of chain stiffness on the performance of conjugated polymers", **Zhang, W.**; Gomez, E.D.; Milner, S.T., Frank J. Padden Award Symposium, Annual Meeting of the American Physical Society, New Orleans, LA, March 2017.

7. Oral presentation. "Role of thermal fluctuations on local lattice disorder and charge transport in conjugated polymers", **Zhang, W.**; Milner, S.T.; Gomez, E.D., Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2016.

6. Poster presentation. "Extracting Flory-Huggins χ for polymers from simulations", **Zhang, W.**; Kozuch, D.J.; Gomez, E.D.; Milner, S.T., Gordon Research Conferences: Polymer Physics, Mount Holyoke College, MA, July 2016.

5. Oral presentation. "Surface induced alignment for semiflexible polymers", **Zhang, W.**; Gomez, E.D.; Milner, S.T., Annual Meeting of the American Physical Society, Baltimore, MD, March 2016.

4. **Invited presentation**. "Predicting nematic phases for semiflexible polymers from simulations", **Zhang, W.**; Gomez, E.D.; Milner, S.T., Excellence in Graduate Polymer Research Symposium, Annual Meeting of the American Institute of Chemical Engineers, Salt Lake City, UT, November 2015.

3. Oral presentation. "Predicting nematic coupling constants of semiflexible polymers from MD simulations", **Zhang, W.**; Gomez, E.D.; Milner, S.T., Annual Meeting of the American Physical Society, San Antonio, TX, March 2015.

2. Poster presentation. "Extracting nematic coupling constants for semiflexible chains from simulations", **Zhang, W.**; Gomez, E.D.; Milner, S.T., Gordon Research Conferences: Polymer Physics, Mount Holyoke College, MA, July 2014.

1. Oral presentation. "Chain shapes and ordering of conjugated polymers from atomistic simulations", **Zhang, W.**; Gomez, E.D.; Milner, S.T., Annual Meeting of the American Physical Society, Denver, CO, March 2014.

Synergistic Activities

Sorter for 2017 Annual March Meeting of the American Physical Society

Successful Proposals

2. "Atomistic and coarse-grained simulations of polymer crystallization and assembly of amphiphilic polymer-colloid composites", Renewal of the Extreme Science and Engineering Discovery Environment (XSEDE) allocation (TG-CHE140009), 2018

1. "Atomistic and coarse-grained Simulations of aggregation, micellization, and crystallization of hydrophobic molecules", Renewal of the Extreme Science and Engineering Discovery Environment (XSEDE) allocation (TG-CHE140009), 2017

Teaching and Mentoring Experience

The Pennsylvania State University — University Park, PA
Teaching Assistant, Process Fluid Mechanics (ChE 300) — Fall 2015

The Pennsylvania State University — University Park, PA
Mentor, Undergraduate honors thesis — 2015-2016
Student: Daniel J. Kozuch, **with a first author publication in *Polymers***.

University of Michigan — Ann Arbor, MI
Lab instructor, Monte Carlo simulations (ChE 496) — Winter 2019

Referee Service

Macromolecular Theory and Simulations, and Journal of Chemical Information and Modeling.

Professional Affiliations

Member, American Physical Society

Member, American Institute of Chemical Engineers