

Yangyang Wang

([Google Scholar Profile](#))

Center for Nanophase Materials Sciences
Oak Ridge National Laboratory
1 Bethel Valley Road, Oak Ridge, TN

Phone: (865)241-8495
Mail Stop: 6494
Email: wangy@ornl.gov

Education

2006-2010 Ph.D. in Polymer Science
The University of Akron, Akron, OH
2002-2006 B.S. in Chemistry, with minor in Mathematics
Peking University, Beijing, China

Professional Experience

2014.11-present *R&D Staff Scientist*, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN
2014.2-2014.11 *Research Assistant Professor*, Department of Chemistry, University of Tennessee, Knoxville
2011-2014.2 *Postdoctoral Research Associate*, Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN
2006-2010 *Research Assistant*, Department of Polymer Science, University of Akron, Akron, OH

Graduate and Postdoctoral Advisors:

Postdoctoral Advisor: Prof. Alexei P. Sokolov (Oak Ridge National Laboratory/University of Tennessee)
Doctoral Advisor: Prof. Shi-Qing Wang (University of Akron)

Honors and Awards

- Neutron Scattering Division (ORNL) Best Experiment Award, 2021
- Department of Energy, Office of Science Early Career Research Program Award, 2019
- Center for Nanophase Materials Sciences Distinguished Scientific Paper Award, 2017
- Ticona “Excellence in Polymer Science” Student Award, Department of Polymer Science, The University of Akron, 2010
- Society of Rheology Student Travel Grant, 2009
- Peking University All-Round Excellent Student, Peking University, 2005
- General Electric Foundation Scholarship, Peking University, 2005
- Xianglu Scholarship, Peking University, 2004

List of Funding and Projects (as PI/co-PI)

As Principle Investigator (PI)

- *Resolving Flow-Induced Mesoscopic Structures in Polymeric Materials* (MAT242), Oak Ridge Leadership Computing Facility Director’s Discretionary Project, PI: Y. Wang, project period: 2021—present, 10,000 node hours on Summit.
- *Fingerprinting Macromolecular Flow and Deformation with Neutrons*, DOE Office of Science Early Career Research Program, PI: Y. Wang, project period: 2019—present, amount: \$2,500,000.
- *Exploring New Paradigms for Understanding Ionic Transport in Polymer Electrolytes* (MAT197), Oak Ridge Leadership Computing Facility Director’s Discretionary Project, PI: Y. Wang, project period: 2018-2020, 40,000 node hours on Summit (accumulated).

- *New Paradigms for Understanding Ionic Transport in Polymer Electrolytes*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: Y. Wang, Co-PIs: W.-R. Chen, K. Hong, J.-M. Y. Carrillo, X. Chen, project period: 2018 – present, amount: \$722,000.
- *Elucidating the Influence of Reversible Non-Covalent Interactions on Dynamic Properties for Rational Design of Soft Materials* (MAT132), Oak Ridge Leadership Computing Facility Director’s Discretionary Project, PI: Y. Wang, project period: 2016-2019, 9,000,000 core hours on Titan (accumulated).
- *Elucidating the Influence of Reversible Non-Covalent Interactions on Dynamic Properties for Rational Design of Soft Materials*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: Y. Wang, Co-PIs: P. V Bonnesen, K. Hong, W.-R. Chen, C. B. Stanley, J.-M. Y. Carrillo, project period: 2015-2018, amount: \$893,000.
- *Piezo-viscous behavior of lubricants: Dielectric spectroscopy under high pressure*, Lubrizol Corporation, PI: Y. Wang, project period: April-October 2014, amount: \$20,000.

As Co-Principle Investigator (co-PI)

- *Polyester Enzymatic Synthesis and Screening Method Development*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: Y. Yuan, Co-PIs: P. V. Bonnesen, J. K. Keum, and Y. Wang, project period: 2023– present, amount: \$300,000.
- *Machine Learning Assisted SANS Data Analysis Platform*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: C. Do, Co-PIs: W.-R. Chen, J. Taylor, Y. Wang, project period: 2023– present, amount: \$380,000.
- *Nonlinear Rheology of Entangled Polymers*, DOE Office of Science ALCC Award, PI: J.-M. Y. Carrillo, Co-PIs: W.-R. Chen, Y. Wang, project period: 2020 – present, 183,000 node hours on Summit.
- *Surpassing Stiffness-Extensibility Trade-off in Elastomers*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: P. Cao, Co-PIs: J. K. Keum, Y. Wang, J.-M. Y. Carrillo, project period: 2019 – present, amount: \$756,000.
- *Molecular Understanding of Soft Matter Flow and Deformation with Neutrons*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: W.-R. Chen, Co-PIs: Y. Wang, M. J. Cochran, G. W. Lynn, K. Hong, C. Do, J.-M. Y. Carrillo, project period: 2018 – present, amount: \$740,000.
- *Probing the Electromechanical Response Mechanism in Nanostructured Ionic Polymer Gels: Towards Rational Design, Tailored Synthesis, and Optimized Properties*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: B. S. Lokitz; Co-PIs: I. N. Ivanov, J. Browning, S. T. Retterer, N. Wisinger, R. Kumar, T. Saito, Y. Wang, amount: \$1,060,000.
- *Understanding rheology of fiber reinforced soft matter structural composites: From microscopic structures to macroscopic mechanical properties*, Laboratory-Directed Research and Development Program, Oak Ridge National Laboratory, PI: A. Naskar; Co-PI: J. K. Keum, J. Chen, Y. Wang, J. M. Carrillo, M. Goswami, A. Beste, amount: \$1,204,000
- *Dynamics of Associating Polymers: From Association to Segmental and Chain Relaxations*, NSF Polymers Program (DMR), PI: A. P. Sokolov, co-PI: Y. Wang, project period: 2014-2017, amount: \$412,821.

Publications (* indicates corresponding author)

- 110 Z. Shen, J.-M. Y. Carrillo, B. G. Sumpter, and **Y. Wang**,* “Mesoscopic two-point collective dynamics of glass-forming liquids,” *J. Chem. Phys.* **159**, 114501 (2023). (**JCP Editor’s Pick**)
- 109 J.-M. Y. Carrillo, **Y. Wang**, R. Kumar, and B. G. Sumpter, “Coarse-grained explicit-solvent molecular dynamics simulations of semidilute unentangled polyelectrolyte solutions,” *Eur. Phys. J. E* **46**, 92 (2023).

- 108 C. N. Lam, L. He, C. Do, W.-R. Chen, W. Wang, K. Hong, and **Y. Wang**,* “Quantifying molecular deformation in polymer melts by a generalized Zimm plot approach,” *J. Appl. Cryst.* **56**, 1169-1179 (2023).
- 107 Z. Wang, B. P. Thapaliya, I. Popovs, **Y. Wang**, T. Wang, J. Chen, M. A. Arnould, S. M. Mahurin, and S. Dai, “Facile Strategy to Prepare Poly (ionic liquid)-Coated Solid Polymer Electrolytes through Layer-by-Layer Assembly,” *ACS Appl. Mater. Interfaces* **15**, 44 (2023).
- 106 G.-R. Huang, C.-H. Tung, L. Porcar, **Y. Wang**, Y. Shinohara, C. Do, and W.-R. Chen, “Model-Free Approach for Profiling of Polydisperse Soft Matter Using Small Angle Scattering,” *Macromolecules* **56**, 6436-6443 (2023).
- 105 Z. Liu, J. K. Keum, T. Li, J. Chen, K. Hong, **Y. Wang**, B. G. Sumpter, R. Advincula, and R. Kumar, “Antipolyelectrolyte and polyelectrolyte effects on conformations of polyzwitterionic chains in dilute aqueous solutions,” *PNAS Nexus* **2**, pgad204 (2023).
- 104 R. Sun, J. Yang, S. Patil, Y. Liu, X. Zuo, A. Lee, W. Yang, **Y. Wang**,* and S. Cheng,* “Relaxation dynamics of deformed polymer nanocomposites as revealed by small-angle scattering and rheology,” *Soft Matter* **18**, 8867-8884 (2022).
- 103 Z. Shen, J.-M. Y. Carrillo, B. G. Sumpter, and **Y. Wang**,* “Fingerprinting Brownian Motions of Polymers under Flow,” *Phys. Rev. Lett.* **129**, 057801 (2022). (Highlighted by DOE Office of Science)
- 102 Z. Shen, J.-M. Y. Carrillo, B. G. Sumpter, and **Y. Wang**,* “Decoding polymer self-dynamics using a two-step approach,” *Phys. Rev. E* **106**, 014502 (2022).
- 101 C. Do, R. Ashkar, C. Boone, W.-R. Chen, G. Ehlers, P. Falus, A. Faraone, J. S. Gardner, V. Graves, T. Huegle, R. Katsumata, D. Kent, J. YY Lin, B. McHargue, B. Olsen, **Y. Wang**, and D. Wilson, “EXPANSE: A time-of-flight expanded angle neutron spin echo spectrometer at the Second Target Station of the Spallation Neutron Source,” *Review of Scientific Instruments* **93**, 075107 (2022).
- 100 S. Qian, W. Heller, W.-R. Chen, A. Christianson, C. Do, **Y. Wang**, J. YY Lin, T. Huegle, C. Jiang, C. Boone, C. Hart, and V. Graves, “CENTAUR — The small-and wide-angle neutron scattering diffractometer/spectrometer for the Second Target Station of the Spallation Neutron Source,” *Review of Scientific Instruments* **93**, 075104 (2022).
- 99 **Y. Wang**,* “Low-frequency dynamics in ionic liquids: comparison of experiments and the random barrier model,” *Phys. Chem. Chem. Phys.* **24**, 16501-16511 (2022).
- 98 X. Tang, C. Liu, J. Keum, J. Chen, B. E. Dial, **Y. Wang**, W.-Y. Tsai, W. Bras, T. Saito, C. C. Bowland, and X. C. Chen, “Upcycling of semicrystalline polymers by compatibilization: mechanism and location of compatibilizers,” *RSA Adv.* **12**, 10886-10894 (2022).
- 97 C. Liu, X. Tang, **Y. Wang**, R. L. Sacci, W. Bras, J. K. Keum, and X. C. Chen, “Ionic Conductivity Enhancement of Polymer Electrolytes by Directed Crystallization,” *ACS Macro Lett.* **11**, 595-602 (2022).
- 96 C.-H. Tung, S.-Y. Chang, H.-L. Chen, **Y. Wang**, K. Hong, J.-M. Y. Carrillo, B. G. Sumpter, Y. Shinohara, C. Do, and W.-R. Chen, “Small angle scattering of diblock copolymers profiled by machine learning,” *J. Chem. Phys.* **156**, 131101 (2022).
- 95 M.-C. Chang, C.-H. Tung, S.-Y. Chang, J. M. Carrillo, **Y. Wang**, B. G. Sumpter, G.-R. Huang, C. Do, and W.-R. Chen, “A machine learning inversion scheme for determining interaction from scattering,” *Communications Physics* **5**, 46 (2022).
- 94 B. Hu, J.-M. Y. Carrillo, L. Collins, K. S. Silmore, J. Keum, P. V. Bonnesen, **Y. Wang**, S. Retterer, R. Kumar, and B. S. Lokitz, “Modular Approach for the Synthesis of Bottlebrush Diblock Copolymers from Poly(Glycidyl Methacrylate)-block-Poly(Vinylidimethylazlactone) Backbones,” *Macromolecules* **55**, 488-497 (2022).

- 93 Z. Zhang, J. Luo, S. Zhao, S. Ge, J.-M. Y. Carrillo, J. K. Keum, C. Do, S. Cheng, **Y. Wang**, A. P. Sokolov, and P.-F. Cao, "Surpassing the stiffness-extensibility trade-off of elastomers via mastering the hydrogen-bonding clusters," *Matter* **5**, 237-252 (2022).
- 92 G.-R. Huang, C. N. Lam, K. Hong, **Y. Wang**, Y. Shinohara, C. Do, and W.-R. Chen, "Ion Atmosphere of Wormlike Micelles Profiled by Contrast Variation Small-Angle Neutron Scattering," *ACS Macro Lett.* **11**, 66-71 (2022).
- 91 Z. Wang, **Y. Wang**, J. Chen, M. Arnould, I. Popovs, Shannon M. Mahurin, H. Chen, T. Wang, and S. Dai, "Synthesis of Poly(ionic Liquid)s-block-poly(methyl Methacrylate) Copolymer-Grafted Silica Particle Brushes with Enhanced CO₂ Permeability and Mechanical Performance," *Langmuir* **37**, 10875 (2021).
- 90 J. Ma, J.-M. Y. Carrillo, C. Do, W.-R. Chen, P. Falus, Z. Shen, K. Hong, B. G. Sumpter, and **Y. Wang**,* "Spatial correlations of entangled polymer dynamics," *Phys. Rev. E* **104**, 024503 (2021).
- 89 Z. Liu, **Y. Wang**, M. A. Garcia-Garibay, "Rotational Dynamics of an Amphidynamic Zirconium Metal-Organic Framework Determined by Dielectric Spectroscopy," *J. Phys. Chem. Lett.* **12**, 5644-5648 (2021).
- 88 Z. Wang, H. Chen, **Y. Wang**, J. Chen, M. A. Arnould, B. Hu, I. Popovs, S. M. Mahurin, S. Dai, "Polymer-Grafted Porous Silica Nanoparticles with Enhanced CO₂ Permeability and Mechanical Performance," *ACS Applied Materials & Interfaces* **13**, 27411-27418 (2021).
- 87 **Y. Wang**,* W. Wang, K. Hong, and Y. Liu, "Quantification of deformation-induced concentration fluctuations in polymeric liquids by small-angle neutron scattering," *Macromolecules* **54**, 3531-3542 (2021).
- 86 R. Sun, M. Melton, N. Safaie, R. C. Ferrier, Jr., S. Cheng,* Y. Liu, X. Zuo, and **Y. Wang**,* "Molecular view on mechanical reinforcement in polymer nanocomposites," *Phys. Rev. Lett.* **126**, 117801 (2021).
- 85 Z. Shen, J. Ma, J.-M. Y. Carrillo, W.-R. Chen, B. G. Sumpter, and **Y. Wang**,* "Spatiotemporal mapping of mesoscopic liquid dynamics," *Phys. Rev. E* **103**, 022609 (2021).
- 84 G.-R. Huang, J.-M. Y. Carrillo, **Y. Wang**, C. Do, L. Porcar, B. G. Sumpter, W.-R. Chen, "An Exact Inversion Method for Extracting Orientation Ordering from Small-Angle Scattering," *Phys. Chem. Chem. Phys.* **23**, 4120-4132 (2021).
- 83 T. Li, H. Li, H. Wang, W. Lu, M. Osa, **Y. Wang**, J. Mays, and K. Hong, "Chain flexibility and glass transition temperatures of poly (*n*-alkyl (meth) acrylate)s: implications of tacticity and chain dynamics," *Polymer* **213**, 123207 (2021).
- 82 P. J. Scott, G. A. Spiering, **Y. Wang**, Z. D. Seibers, R. B. Moore, R. Kumar, B. S. Lokitz, and T. E. Long, "Phosphonium-Based Polyzwitterions: Influence of Ionic Structure and Association on Mechanical Properties," *Macromolecules* **53**, 11009-11018 (2020).
- 81 X. C. Chen, R. L. Sacci, N. C. Osti, M. Tyagi, **Y. Wang**, J. K. Keum, and N. J. Dudney, "Study of the Segmental Dynamics and Ion Transport of Solid Polymer Electrolytes in the Semi-Crystalline State," *Frontiers in Chemistry* **8**, 1211 (2020).
- 80 G.-R. Huang, C.-H. Tung, D. Chang, C. N. Lam, C. Do, Y. Shinohara, S.-Y. Chang, **Y. Wang**, K. Hong, and W.-R. Chen, "Determining population densities in bimodal micellar solutions using contrast-variation small angle neutron scattering," *J. Chem. Phys.* **153**, 184902 (2020).
- 79 **Y. Wang**,* W. Wang, K. Hong, C. Do, W.-R. Chen, "Quantitative examination of a fundamental assumption in small-angle neutron scattering studies of deformed polymer melts," *Polymer* **204**, 122698 (2020).
- 78 L. C. Merrill, X. C. Chen, Y. Zhang, H. O. Ford, K. Lou, Y. Zhang, G. Yang, **Y. Wang**, Y. Wang, J. L. Schaefer, and N. Dudney, "Polymer-Ceramic Composite Electrolytes for Lithium Batteries: A Comparison between Single Ion Conducting Polymer Matrix and Its Counterpart," *ACS Applied Energy Materials*, **3** 8871-8881 (2020).

- 77 G.-R. Huang, **Y. Wang**, C. Do, and W.-R. Chen, "Spatial correlation functions of paracrystals with radial symmetry," *Physical Review E*, **102**, 032110 (2020).
- 76 I. Liepuoniute, C. M. Huynh, S. Perez-Estrada, **Y. Wang**, S. Khan, K. N. Houk, M. A. Garcia-Garibay, "Enhanced Rotation by Ground State Destabilization in Amphidynamic Crystals of a Dipolar 2,3-Difluorophenylene Rotator as Established by Solid State ^2H NMR and Dielectric Spectroscopy," *The Journal of Physical Chemistry C* **124**, 15391 (2020).
- 75 V. Bocharova, A.-C. Genix, J.-M. Y Carrillo, R. Kumar, B. Carroll, A. Erwin, D. Voylov, A. Kisliuk, **Y. Wang**, B. G. Sumpter, A. P. Sokolov, "Addition of Short Polymer Chains Mechanically Reinforces Glassy Poly (2-vinylpyridine)-Silica Nanoparticle Nanocomposites," *ACS Applied Nano Materials* **3**, 3427 (2020).
- 74 R. Yuan, J. Liu, **Y. Wang**, S.-Q. Wang, "Uncommon nonlinear rheological phenomenology in uniaxial extension of polystyrene solutions and melts," *Soft Matter* **16**, 3705 (2020).
- 73 T. Kinsey, E. Mapesa, T. Cosby, Y. He, K. Hong, **Y. Wang**, C. Jacob, J. Sangoro, "Elucidating the impact of extreme nanoscale confinement on segmental and chain dynamics of unentangled poly (cis-1, 4-isoprene)," *The European Physical Journal E* **42**, 137 (2019).
- 72 W.-S. Xu, C. N. Lam, J.-M. Y. Carrillo, B. G. Sumpter, and **Y. Wang**,* "Comment on 'Relating Chain Conformations to Extensional Stress in Entangled Polymer Melts'," *Phys Rev Lett* **122**, 059803 (2019).
- 71 J.-M. Y. Carrillo, W.-R. Chen, Z. Wang, B. G. Sumpter, and **Y. Wang**,* "Chain conformation of polymer melts with associating groups," *Journal of Physics Communications* **3**, 035007 (2019).
- 70 Z. Wang, T. Iwashita, L. Porcar, **Y. Wang**, Y. Liu, L. E. Sánchez-Díaz, B. Wu, G.-R. Huang, T. Egami, and W.-R. Chen, "Local elasticity in nonlinear rheology of interacting colloidal glasses revealed by neutron scattering and rheometry," *Physical Chemistry Chemical Physics* **21**, 38 (2019).
- 69 E. U. Mapesa, M. Chen, M. F. Heres, M. A. Harris, T. Kinsey, **Y. Wang**, T. E. Long, B. S. Lokitz, and J. R. Sangoro, "Charge Transport in Imidazolium-Based Homo-and Triblock Poly(ionic liquid)s," *Macromolecules* **52**, 620 (2019).
- 68 G.-R. Huang, **Y. Wang**, C. Do, Y. Shinohara, T. Egami, L. Porcar, Y. Liu, and W.-R. Chen, "Orientational Distribution Function of Aligned Elongated Molecules and Particulates Determined from Their Scattering Signature," *ACS Macro Lett* **8**, 1257 (2019).
- 67 P. Li, H. Chen, J. A. Schott, B. Li, Y. Zheng, S. M. Mahurin, D.-e. Jiang, G. Cui, X. Hu, **Y. Wang**, L. Li, and S. Dai, "Porous liquid zeolites: hydrogen bonding-stabilized H-ZSM-5 in branched ionic liquids," *Nanoscale* **11**, 1515 (2019).
- 66 C. N. Lam, C. Do, **Y. Wang**, G.-R. Huang, and W.-R. Chen, "Structural properties of the evolution of CTAB/NaSal micelles investigated by SANS and rheometry," *Physical Chemistry Chemical Physics* **21**, 18346 (2019).
- 65 G.-R. Huang, **Y. Wang**, C. Do, L. Porcar, Y. Shinohara, T. Egami, and W.-R. Chen, "Determining Gyration Tensor of Orienting Macromolecules through Their Scattering Signature," *Journal of Physical Chemistry Letters* **10**, 3978 (2019).
- 64 W. D. Hong, C. N. Lam, **Y. Wang**, Y. He, L. E. Sánchez-Díaz, C. Do, and W.-R. Chen, "Influence of side chain isomerism on the rigidity of poly (3-alkylthiophenes) in solutions revealed by neutron scattering," *Physical Chemistry Chemical Physics* **21**, 7745 (2019).
- 63 L. Earl, C. Do, **Y. Wang**, and C. Abney, "Polyamidoxime chain length drives emergent metal-binding phenomena," *Physical Chemistry Chemical Physics* **21**, 554 (2019).

- 62 X. C. Chen, R. L. Sacci, N. C. Osti, M. Tyagi, **Y. Wang**, M. J. Palmer, and N. J. Dudney, "Study of segmental dynamics and ion transport in polymer–ceramic composite electrolytes by quasi-elastic neutron scattering," *Molecular Systems Design & Engineering* **4**, 379 (2019).
- 61 C. N. Lam, W.-S. Xu, W.-R. Chen, Z. Wang, C. B. Stanley, J.-M. Y. Carrillo, D. Uhrig, W. Wang, K. Hong, Y. Liu, L. Porcar, C. Do, G. S. Smith, B. G. Sumpter, and **Y. Wang**,* "Scaling behavior of anisotropy relaxation in deformed polymers," *Phys. Rev. Lett.* **121**, 117801 (2018).
- 60 W.-S. Xu, J.-M. Y. Carrillo, C. N. Lam, B. G. Sumpter, and **Y. Wang**,* "Molecular Dynamics Investigation of the Relaxation Mechanism of Entangled Polymers after a Large Step Deformation," *ACS Macro Lett* **7**, 190 (2018). (**Highlighted by the Oak Ridge Leadership Computing Facility; CNMS Distinguished Scientific Paper Award**)
- 59 G.-R. Huang, B. Wu, **Y. Wang**,* and W.-R. Chen,* "Characterization of microscopic deformation through two-point spatial correlation functions," *Phys. Rev. E* **97**, 012605 (2018).
- 58 K. Chen, B. Wu, L. He, G. S. Smith, C. Do, G.-R. Huang, G. Zhang, and **Y. Wang**,* "Strain heterogeneity in sheared colloids revealed by neutron scattering," *Physical Chemistry Chemical Physics* **20**, 6050 (2018).
- 57 K. Misichronis, W. Wang, S. Cheng, **Y. Wang**, U. Shrestha, M. Dadmun, J. Mays, and T. Saito, "Design, synthesis, and characterization of lightly sulfonated multigraft acrylate-based copolymer superelastomers," *RSC Advances* **8**, 5090 (2018).
- 56 M. Chen, J. W. Dugger, X. Li, **Y. Wang**, R. Kumar, K. M. Meek, D. W. Uhrig, J. F. Browning, L. A. Madsen, T. E. Long, B. S. Lokitz, "Polymerized ionic liquids: Effects of counter-anions on ion conduction and polymerization kinetics," *Journal of Polymer Science Part A: Polymer Chemistry* **56**, 1346 (2018).
- 55 P. F. Cao, B. Li, T. Hong, J. Townsend, Z. Qiang, K. Xing, K. D. Vogiatzis, **Y. Wang**, J. W. Mays, and A. P. Sokolov, "Superstretchable, Self-Healing Polymeric Elastomers with Tunable Properties," *Advanced Functional Materials* **28**, 1800741 (2018).
- 54 W. Lu, A. Goodwin, **Y. Wang**, P. Yin, W. Wang, J. Zhu, T. Wu, X. Lu, B. Hu, and K. Hong, "All-acrylic superelastomers: facile synthesis and exceptional mechanical behavior," *Polymer Chemistry* **9**, 160 (2018).
- 53 G.-R. Huang, **Y. Wang**,* B. Wu, Z. Wang, C. Do, G. S. Smith, W. Bras, L. Porcar, P. Falus, and W.-R. Chen,* "Reconstruction of three-dimensional anisotropic structure from small-angle scattering experiments," *Phys. Rev. E* **96**, 022612 (2017).
- 52 T. Cosby, Z. Vicars, **Y. Wang**, and J. Sangoro, "Dynamic-Mechanical and Dielectric Evidence of Long-Lived Mesoscale Organization in Ionic Liquids," *J. Phys. Chem. Lett.* **8**, 3544 (2017).
- 51 Z. Wang, C. N. Lam, W.-R. Chen, W. Wang, J. Liu, Y. Liu, L. Porcar, C. B. Stanley, Z. Zhao, K. Hong, and **Y. Wang**,* "Fingerprinting Molecular Relaxation in Deformed Polymers," *Phys. Rev. X* **7**, 031003 (2017). (**Highlighted in *Physics* by the American Physical Society and in FY2017 NCNR annual report; CNMS Distinguished Scientific Paper Award**)
- 50 V. R. Cooper, C. N. Lam, **Y. Wang**, and B. G. Sumpter, "Noncovalent Interactions in Nanotechnology," in *Non-covalent Interactions in Quantum Chemistry and Physics*, edited by A. O. de la Roza, and G. DiLabio (Elsevier, 2017).
- 49 M. Adams, V. Richmond, D. Smith, **Y. Wang**, F. Fan, A. P. Sokolov, and D. A. Waldow, "Decoupling of ion conductivity from segmental dynamics in oligomeric ethylene oxide functionalized oxanorbornene dicarboximide homopolymers," *Polymer* **116**, 218 (2017).
- 48 **Y. Wang**,* "Ionic Transport and Dielectric Relaxation in Polymer Electrolytes," in *Dielectric Properties of Ionic Liquids*, edited by M. Paluch (Springer International Publishing, Cham, 2016), pp. 131-156.

- 47 M. Heres, **Y. Wang**, P. J. Griffin, C. Gainaru, and A. P. Sokolov, "Anomalously large isotope effect displayed by conductivity of phosphoric acid," *Phys. Rev. Lett.* **117**, 156001 (2016).
- 46 F. Fan, W. Wang, A. P. Holt, H. Feng, D. Uhrig, X. Lu, T. Hong, **Y. Wang**, N.-G. Kang, J. Mays, and A. P. Sokolov, "Effect of molecular weight on the ion transport mechanism in polymerized ionic liquids," *Macromolecules* **49**, 4557 (2016).
- 45 P. J. Griffin, **Y. Wang**, A. P. Holt, and A. P. Sokolov, "Communication: Influence of nanophase segregation on ion transport in room temperature ionic liquids," *J. Chem. Phys.* **144**, 151104 (2016).
- 44 D. Voylov, T. Saito, B. Lokitz, D. Uhrig, **Y. Wang**, A. Agapov, A. Holt, V. Bocharova, A. Kisliuk, and A. P. Sokolov, "Graphene oxide as a radical initiator: Free radical and controlled radical polymerization of sodium 4-vinylbenzenesulfonate with graphene oxide," *ACS Macro Lett* **5**, 199 (2016).
- 43 Y. Xu, W. Wang, **Y. Wang**, J. Zhu, D. Uhrig, X. Lu, J. K. Keum, J. W. Mays, and K. Hong, "Fluorinated bottlebrush polymers based on poly(trifluoroethyl methacrylate): Synthesis and characterization," *Polymer Chemistry* **7**, 680 (2016).
- 42 H.-H. Zhang, C. Ma, P. V. Bonnesen, J. Zhu, B. G. Sumpter, J.-M. Y. Carrillo, P. Yin, **Y. Wang**, A.-P. Li, and K. Hong, "Helical poly(5-alkyl-2,3-thiophene)s: Controlled synthesis and structure characterization," *Macromolecules* **49**, 4691 (2016).
- 41 Y. Li, M. P. Paranthamana, L. W. Gilla, E. W. Hagamana, **Y. Wang**, A. P. Sokolov, S. Dai, C. Ma, M. Chi, G. M. Veith, A. Manthiram, and J. B. Goodenough, "Conduction below 100°C in Nominal $\text{Li}_6\text{ZnNb}_4\text{O}_{14}$," *J Mater Sci* **51**, 854 (2016).
- 40 A. Goodwin, W. Wang, N.-G. Kang, **Y. Wang**, K. Hong, and J. Mays, "All-Acrylic Multigraft Copolymer Synthesis and Characterization," *Ind. Eng. Chem. Res.* **54**, 9566 (2015).
- 39 T. Cosby, A. Holt, P. J. Griffin, **Y. Wang**, and J. Sangoro, "Proton transport in imidazoles: unraveling the role of supramolecular structure," *J. Phys. Chem. Lett.* **6**, 3961 (2015).
- 38 S. Hensel-Bielowka, Z. Wojnarowska, M. Dzida, E. Zorębski, M. Zorębski, M. Geppert-Rybczyńska, T. Peppel, K. Grzybowska, **Y. Wang**, A. P. Sokolov, and M. Paluch, "Heterogeneous Nature of Relaxation Dynamics of Room-Temperature Ionic Liquids $(\text{EMIm})_2[\text{Co}(\text{NCS})_4]$ and $(\text{BMIm})_2[\text{Co}(\text{NCS})_4]$," *J. Phys. Chem. C* **119**, 20363 (2015).
- 37 F. Fan, **Y. Wang**, T. Hong, M. F. Heres, T. Saito, A. P. Sokolov, "Ion conduction in polymerized ionic liquids with different pendant groups," *Macromolecules* **48**, 4461–4470, (2015).
- 36 V. Bocharova, D. Sharp, A. Jones, S. Cheng, P. J. Griffin, A. L. Agapov, D. Voylov, **Y. Wang**, A. Kisliuk, A. Melman, and A. P. Sokolov, "Enzyme induced formation of monodisperse hydrogel nanoparticles tunable in size," *Chem. of Mater.* **27**, 2557 (2015).
- 35 **Y. Wang*** and A. P. Sokolov*, "Design of superionic polymer electrolytes," *Curr. Opin. Chem. Eng.*, **invited review**, **7**, 113-119 (2015).
- 34 Y. Matsuda, A. Fukatsu, **Y. Wang**, K. Miyamoto, J. W. Mays, and S. Tasaka, "Fabrication and characterization of poly(L-lactic acid) gels induced by complex crystallization with solvents," *Polymer* **55** 4369-4378 (2014).
- 33 **Y. Wang***, F. Fan, A. L. Agapov, T. Saito, J. Yang, X. Yu, K. Hong, J. Mays, and A. P. Sokolov, "Examination of the fundamental relation between ionic transport and segmental relaxation in polymer electrolytes," *Polymer* **55**, 4067-4076 (2014).
- 32 S. Bobade, **Y. Wang**, J. Mays, and D. Baskaran, "Synthesis and characterization of ureidopyrimidone telechelics by CuAAC 'click' reaction: Effect of T_g and polarity," *Macromolecules* **47**, 5040-5050 (2014).

- 31 S.-Q. Wang, G. Liu, S. Cheng, P. E. Boukany, **Y. Wang**, X. Li, and S. Ravindranath, "Letter to the Editor: Sufficiently entangled polymers do show shear strain localization at high enough Weissenberg numbers," *J. Rheol.* **58**, 1059 (2014).
- 30 **Y. Wang**,* F. Fan, A. L. Agapov, X. Yu, K. Hong, J. Mays, and A. P. Sokolov, "Design of superionic polymers—new insights from Walden plot analysis," *Solid State Ionics* **262**, 782 (2014).
- 29 Z. Wojnarowska, **Y. Wang**, K. J. Paluch, A. P. Sokolov, and M. Paluch, "Observation of highly decoupled conductivity in protic ionic conductors," *Phys. Chem. Chem. Phys.* **16**, 9123 (2014).
- 28 J. R. Sangoro, C. Iacob, A. L. Agapov, **Y. Wang**, S. Berdzinski, H. Rexhausen, V. Strehmel, C. Friedrich, A. P. Sokolov and F. Kremer, "Decoupling of ionic conductivity from structural dynamics in polymerized ionic liquids," *Soft Matter* **10**, 3536 (2014).
- 27 **Y. Wang**,* P. J. Griffin, A. Holt, F. Fan, and A. P. Sokolov, "Observation of the slow, Debye-like relaxation in hydrogen-bonded liquids by dynamic light scattering," *J. Chem. Phys.* **140**, 104510 (2014).
- 26 P. J. Griffin, A. P. Holt, **Y. Wang**, V. N. Novikov, J. R. Sangoro, F. Kremer, and A. P. Sokolov, "Interplay between hydrophobic aggregation and charge transport in the ionic liquid methyltrioctylammonium bis(trifluoromethylsulfonyl)imide," *J. Phys. Chem. B* **118**, 783 (2014).
- 25 W. E. Tenhaeff, E. Rangasamy, **Y. Wang**, A. P. Sokolov, J. Wolfenstine, J. Sakamoto, and N. J. Dudney, "Resolving the grain boundary and lattice impedance of hot-pressed $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ garnet electrolytes," *ChemElectroChem* **1**, 375-378 (2014).
- 24 Z. Wojnarowska, **Y. Wang**, J. Pionteck, K. Grzybowska, A. P. Sokolov, and M. Paluch, "High pressure as a key factor to identify the conductivity mechanism in protic ionic liquids," *Phys. Rev. Lett.* **111**, 225703 (2013).
- 23 F. Fan, **Y. Wang**,* and A. P. Sokolov, "Ionic transport, microphase separation, and polymer relaxation in poly(propylene glycol) and lithium perchlorate mixtures," *Macromolecules* **46**, 9380 (2013).
- 22 P. J. Griffin, J. R. Sangoro, **Y. Wang**, A. P. Holt, V. N. Novikov, A. P. Sokolov, Z. Wojnarowska, M. Paluch, and F. Kremer, "Dynamic crossover and the Debye-Stokes-Einstein relation in liquid N,N-diethyl-3-methylbenzamide (DEET)," *Soft Matter* **9**, 10373 (2013).
- 21 **Y. Wang**,* C.-N. Sun, F. Fan, J. R. Sangoro, M. B. Berman, S. G. Greenbaum, T. A. Zawodzinski, and A. P. Sokolov, "Examination of methods to determine free-ion diffusivity and number density from analysis of electrode polarization," *Phys. Rev. E* **87**, 042308 (2013).
- 20 **Y. Wang**,* N. A. Lane, C.-N. Sun, F. Fan, T. A. Zawodzinski, and A. P. Sokolov, "Ionic conductivity and glass transition of phosphoric acids," *J. Phys. Chem. B* **117**, 8003 (2013).
- 19 **Y. Wang**, P. Wlodarczyk, A. P. Sokolov, and M. Paluch, "Rheological study of mutarotation of fructose in anhydrous state," *J. Phys. Chem. B* **117**, 1475 (2013).
- 18 S.-Q. Wang, **Y. Wang**, S. Cheng, X. Li, X. Zhu, and H. Sun, "New experiments for improved theoretical description of nonlinear rheology of entangled polymers," *Macromolecules* **46**, 3147 (2013).
- 17 N. Lou, **Y. Wang**, X. Li, H. Li, P. Wang, C. Wesdemiotis, A. P. Sokolov, and H. Xiong, "Dielectric relaxation and rheological behavior of supramolecular polymeric liquid," *Macromolecules* **46**, 3160 (2013).
- 16 A. P. Holt, J. R. Sangoro, **Y. Wang**, A. L. Agapov, and A. P. Sokolov, "Chain and segmental dynamics of poly(2-vinylpyridine) nanocomposites," *Macromolecules* **46**, 4168-4173 (2013).
- 15 **Y. Wang**, A. L. Agapov, F. Fan, K. Hong, X. Yu, J. Mays, and A. P. Sokolov, "Decoupling of ionic transport from segmental relaxation in polymer electrolytes," *Phys. Rev. Lett.* **108**, 088303 (2012).
- 14 Z. Wojnarowska, **Y. Wang**, A. P. Sokolov, and M. Paluch, "Rheological study of tautomerization kinetics in supercooled glibenclamide drug," *Phys. Rev. E* **86**, 067104 (2012).

- 13 A. L. Agapov, **Y. Wang**, K. Kunal, C. G. Robertson, and A. P. Sokolov, "Effect of polar interactions on polymer dynamics," *Macromolecules* **45**, 8430-8437 (2012).
- 12 N. Lou, **Y. Wang**, H. Li, A. P. Sokolov, and H. Xiong, "Glassy dynamics of hydrogen-bonded heteroditopic molecules," *Polymer* **53**, 4455-4460 (2012).
- 11 S. Ravindranath, **Y. Wang**,* P. E. Boukany, and X. Li, "Letter to the editor: cone partitioned plate (CPP) vs circular Couette," *J. Rheol.* **56**, 675-681 (2012).
- 10 **Y. Wang**, X. Li, X. Z. Zhu and S. Q. Wang, "Characterizing state of chain entanglement in entangled polymer solutions during and after large shear deformation," *Macromolecules* **45**, 2514-2521 (2012).
- 9 G. H. Ling, **Y. Wang**, and R. A. Weiss, "Linear viscoelastic and uniaxial extensional rheology of alkali metal neutralized sulfonated oligostyrene ionomer melts," *Macromolecules* **45**, 481-490 (2012).
- 8 **Y. Wang**, S. Cheng, and S. Q. Wang, "Basic characteristics of uniaxial extension rheology: comparing monodisperse and bidisperse polymer melts," *J. Rheol.* **55**, 1247-1270 (2011).
- 7 **Y. Wang**, and S. Q. Wang, "Salient features in uniaxial extension of polymer melts and solutions: progressive loss of entanglements, yielding, non-Gaussian stretching, and rupture," *Macromolecules* **44**, 5427-5435 (2011).
- 6 **Y. Wang**, and S. Q. Wang, "Rupture in rapid uniaxial extension of linear entangled melts," *Rheol. Acta* **49**, 1179-1185 (2010).
- 5 **Y. Wang**, and S. Q. Wang, "Exploring stress overshoot phenomenon upon startup deformation of entangled linear polymeric liquids," *J. Rheol.* **53**, 1389-1401 (2009).
- 4 **Y. Wang**, and S. Q. Wang, "From elastic deformation to terminal flow of a monodisperse entangled melt in uniaxial extension," *J. Rheol.* **52**, 1275-1290 (2008).
- 3 S. Q. Wang, P. E. Boukany, S. Ravindranath, **Y. Wang**, and X. Li, "Elastic yielding in entangled polymeric liquids: Exploring origin of flow inhomogeneity", *AIP Conference Proceedings* **1027**, 397-399 (2008).
- 2 **Y. Wang**, P. E. Boukany, S. Q. Wang, and X. Wang, "Elastic breakup in uniaxial extension of entangled polymers," *Phys. Rev. Lett.* **99**, 237801 (2007).
- 1 S. Q. Wang, S. Ravindranath, **Y. Wang**, and P. E. Boukany, "New theoretical consideration in polymer rheology: Elastic breakdown of chain entanglement network liquid state," *J. Chem. Phys.* **127**, 064903 (2007).

List of Presentations and Conferences

Podium Presentations

- "Low-frequency dynamics in ionic materials: going beyond dc conductivity," **invited talk**, Understanding Structure and Dynamics of Charged Polymers Workshop, CNMS User Meeting, August 10, 2023.
- "Spatial Correlations of Polymer Dynamics," **invited talk**, VT-ORNL Soft Matter and Biological Physics Symposium, Blacksburg (VA), May 17-18, 2023.
- "Spatial Correlations of Polymer Dynamics: Going beyond the Paradigm of Time Correlation Analysis," **invited talk**, American Chemical Society Spring Meeting, Indianapolis (IN), March 26-30, 2023.
- "Collective Dynamics of Glass-Forming Liquids in Three Dimensions," American Physical Society March Meeting, Las Vegas (NV), March 5-10, 2023.
- "Understanding molecular deformation and relaxation of ionomers by complementary small-angle scattering techniques," American Physical Society March Meeting, Las Vegas (NV), March 5-10, 2023.
- "Relaxation dynamics of deformed polymer nanocomposites as revealed by small-angle scattering and rheology," Society of Rheology 93rd Annual Meeting, Chicago (IL) Oct. 9-13, 2022.
- "Some open problems in dynamics and rheology of polymers: a personal take based on recent studies," **invited talk**, ORNL Soft Matter Symposium, Oct 27-28, 2022.

- “Molecular deformation and relaxation dynamics of ionomers as revealed by complementary small-angle scattering techniques,” American Conference on Neutron Scattering, Boulder (CO), June 2022.
- “Spatial correlations of polymers dynamics,” **invited talk**, *Recent Advances in Neutron Spin Echo Science and Technology* Workshop, American Conference on Neutron Scattering, Boulder (CO), June 2022.
- “A Quantitative Approach to Brownian Motions of Polymers under Flow,” American Physical Society March Meeting, Chicago (IL), March 2022.
- “Fingerprinting macromolecular flow and deformation with neutrons,” **invited talk**, Neutron Scattering Principal Investigators’ Meeting (virtual), December 15-17, 2021.
- “Molecular view of macromolecular flow and deformation with neutrons,” **invited talk**, Joint Nanoscience and Neutron Scattering User Meeting, Online, August 9-12, 2021.
- “Searching new ways to understand macromolecular flow with neutrons and computer simulation,” **invited talk**, ORNL Energy and Soft Matter over Tea Seminar, May 12, 2021.
- “Quantification of deformation-induced concentration fluctuations in polymer blends by small-angle neutron scattering,” American Physical Society March Meeting, Online, March 2021.
- “Quantification of deformation-induced concentration fluctuations in polymer blends by small-angle neutron scattering,” 18th International Congress on Rheology, December 2020.
- “Capturing the Elusive Butterfly: Quantification of Large Concentration Fluctuations of Polymeric Liquids under Deformation,” American Conference on Neutron Scattering, July 2020.
- “Universality in microstructural evolution of deformed polymer melts as revealed by SANS and MD simulation,” American Physical Society March Meeting, Denver (CO), March 2020.
- “Spatially anisotropic relaxation dynamics in deformed polymer melts,” Society of Rheology 91st Annual Meeting, Raleigh (NC), October 2019.
- “Fingerprinting Macromolecular Flow and Deformation with Neutrons,” **invited talk**, American Physical Society March Meeting, Boston (MA), March 2019.
- “Fingerprinting Macromolecular Flow and Deformation with Neutrons,” **invited talk**, Southeast Polymer Forum, Oak Ridge (TN), Jul 2019.
- “Spatially anisotropic relaxation dynamics in deformed polymer melts,” Society of Rheology 91st Annual Meeting, Raleigh (NC), October 2019.
- “Revealing the fine features of charge transport mechanism in ionic glass forming liquids by dielectric spectroscopy,” American Physical Society March Meeting, Boston (MA), March 2019.
- “What is the microscopic origin of stress in entangled polymer melts?” Society of Rheology 90th Annual Meeting, Houston (TX), October 2018.
- “Molecular Understanding of Polymer Flow and Deformation with Neutrons and Computer Simulation,” **invited talk**, Department of Chemical Engineering and Materials Science, Michigan State University, East Lansing (MI), September 2018.
- “Molecular Understanding of Polymer Flow and Deformation with Neutrons and Computer Simulation,” **invited talk**, PSD Materials & Chemistry Seminar, April 2018.
- “Challenging the Chain Retraction Hypothesis of the Tube Model: Small-Angle Neutron Scattering Experiments,” APS March Meeting, Los Angeles (CA), March 2018.
- “Spatial Dependence of Molecular Relaxation in Deformed Polymers,” APS March Meeting, Los Angeles (CA), March 2018
- “Fingerprinting Molecular Relaxation of Deformed Polymers,” American Conference on Neutron Scattering, College Park (MD), June 2018.

- “Modeling Anisotropic Scattering,” **invited talk**, American Conference on Neutron Scattering, College Park (MD), June 2018.
- “Fingerprinting Molecular Relaxation of Deformed Polymers,” **invited talk**, CNMS Seminar, December 2017.
- “A new approach to polymer rheology via two-point spatial correlation functions,” Society of Rheology 89th Annual Meeting, Denver (CO), October 2017.
- “Fingerprinting molecular deformation of entangled polymers by small-angle neutron scattering,” APS March Meeting, New Orleans (LA), 2017.
- “Affine vs. Non-Affine Deformation in Fast Flow of Entangled Polymers: New Insight from Small-Angle Neutron Scattering,” Society of Rheology 88th Annual Meeting, Tampa (FL), 2017.
- “Unearthing the Power of Small-Angle Neutron Scattering for Molecular Rheology of Polymers,” Society of Rheology 88th Annual Meeting, Tampa (FL), 2017.
- “Unearthing the Power of Small-Angle Neutron Scattering for Molecular Rheology of Polymers,” **invited talk**, Center for Neutron Research Seminar, National Institute of Standards and Technology, Gaithersburg (MD), Jan 2017.
- “Molecular Deformation Mechanism of Entangled Polymers in Fast Flow,” American Conference on Neutron Scattering, Long Beach (CA), July 2016.
- “Elucidating the Molecular Deformation Mechanism of Entangled Polymers in Fast Flow by Small Angle Neutron Scattering,” APS March Meeting, Baltimore (MD), March 2016.
- “Application of Polymer Concepts to Dynamics of Short-Chain Hydrogen-Bonded Liquids: Tests of the Minimal Model of Associating Polymers,” Society of Rheology 87th Annual Meeting, Baltimore (MD), October 2015.
- “Small-angle neutron scattering study of the molecular deformation mechanism of entangled polymer melts in rapid uniaxial extension,” Society of Rheology 87th Annual Meeting, Baltimore (MD), October 2015.
- “Viscoelastic properties of polymer electrolytes: Mechanical and light scattering studies,” Society of Rheology 86th Annual Meeting, Philadelphia (PA), October 2014.
- “Relationship between Ionic Transport and Segmental Relaxation in Polymer Electrolytes,” 248th ACS National Meeting, San Francisco (CA), August 2014.
- “Design of superionic polymers for energy storage applications,” APS March Meeting, Denver (CO), March 2014.
- “Design of superionic polymer electrolytes,” invited talk, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge (TN), July 2013.
- “When does a molecule become a polymer?” Society of Rheology 84th Annual Meeting, Pasadena (CA), February 2013.
- “Decoupling of ionic transport from segmental relaxation in polymer electrolytes,” APS Meeting, Boston (MA), March 2012.
- “Non-Gaussian stretching of entangled polymers,” Society of Rheology 83rd Annual Meeting, Cleveland (OH), October 2011.
- “Brittle failure of entangled melts in rapid uniaxial extension,” Society of Rheology 81st Annual Meeting, Madison (WI), October 2009.
- “How can polymer rheology be useful to guide processing?” ANTEC, Chicago (IL), June 2009.
- “What are universal features in uniaxial extension of entangled polymer melts?” Society of Rheology 80th Annual Meeting, Monterey (CA), August 2008.

- “The latest development of nonlinear rheology of polymers: from shear to extension of rubber,” ACS Rubber Division 172nd Technical Meeting, Cleveland (OH), October 2007.
- “Yielding in uniaxial extension of entangled polymer melts, solutions and blends,” Society of Rheology 79th Annual Meeting, Salt Lake City (UT), October 2007.
- “Elastic breakup in extensional flow of entangled melts,” APS March Meeting, Denver (CO), March 2007.

Poster Presentations

- “Molecular view on mechanical reinforcement in polymer nanocomposites,” Neutron Scattering Principal Investigators’ Meeting (virtual), December 15-17, 2021.
- “Examination of the chain retraction hypothesis of the tube model: Small-angle neutron scattering experiments and large-scale molecular dynamics simulations”, Gordon Research Conference on Polymer Physics, Mount Holyoke College, South Hadley (MA), July 2018.
- “Dynamics of associating polymers and the sticky Rouse model: a study by combined dielectric and dynamic mechanical techniques,” APS March Meeting, Baltimore (MD), March 2016.
- “Observation of the slow, Debye-like relaxation in hydrogen-bonded liquids”, APS March Meeting, Denver (CO), March 2014.
- “Ionic conductivity in solid polymer electrolytes,” TN-SCORE, Thrust II Meeting, Cookeville (TN), June 2011.
- “Disentanglement and reentanglement of polymer solutions after large step shearing deformation,” APS Meeting, Pittsburgh (PA), March 2009.
- “Elastic breakup of entangled polymers in uniaxial extension: is there a steady state at high Weissenberg numbers?” Society of Rheology 79th Annual Meeting, Salt Lake City (UT), October 2007.
- “New understanding on polymer wall slip,” Society of Rheology 78th Annual Meeting, Portland (ME), October 2006.

Internal Impact and Activities

- Member of the ORNL Laboratory-Directed Research and Development Initial Review Committee for Neutron Scattering (2018, 2019)
- Member of the ORNL Technical Team of the Wide-Angle Neutron Spin Echo Spectrometer (EXPANSE) proposal for the Second Target Station
- Member of the ORNL Technical Team of the Small- and Wide-Angle Spectrometer (Centaur) proposal for the Second Target Station

External and Society Activities

- Professional affiliations: Society of Rheology, American Physical Society, American Chemical Society
- Journal reviewer: *J. Am. Chem. Soc.*, *Macromolecules*, *Polymer*, *Polymers*, *J. Phys. Chem. B*, *J. Mater. Chem. A*, *J. Rheol.*, *AIP Adv.*, *J. Phys. Chem. Lett.*, *J. Electroanalytical Chem.*, *Soft Matter*, *J. Chem. Phys.*, *Phys. Chem. Chem. Phys.*, *IONICS*, *J. Polym. Sci.*, *Frontiers in Chemistry*, *Thermochimica Acta*, *Chem. Phys.*
- Research grant reviewer: National Science Foundation (USA), National Science Center (Poland), ACS Petroleum Research Fund (USA), DOE Basic Energy Sciences
- Co-organizer of the *Recent Advances in Neutron Spin Echo Science and Technology* Workshop, American Conference on Neutron Scattering, Boulder (CO), June 2022
- Served on the 2022 Neutron Scattering Society of America Student Prize Committee
- Co-organizer for American Physical Society March Meeting focus session on nonequilibrium structures of polymeric materials (2022, 2023)

- Co-organizer for American Physical Society March Meeting invited session “Out-of-equilibrium: structure and dynamics of polymers” (2023)
- Co-organizer for American Physical Society March Meeting focus sessions on electric polarization and polymer physics (2020, 2021)
- Co-organizer for the *Analysis of Small-Angle Scattering Data from Soft Materials Workshop* at the Joint Nanoscience and Neutron Scattering User Meeting (2021)
- Co-organizer and lecturer for *SANS Data Analysis Winter School* at Spallation Neutron Source (2023)
- Co-organizer for American Physical Society March Meeting invited session “Physics in Polymer Processing” (2024)
- Co-organizer for American Physical Society March Meeting focus session “Additive Manufacturing of Soft Materials” (2024)
- Co-organizer for American Physical Society March Meeting focus session “Physics Concepts in Polymer Engineering” (2024)

Teaching Experience

University of Tennessee, Knoxville/Oak Ridge National Laboratory

High School students mentored: Kevin Chen (2016)

Undergraduate students mentored: Nathan A. Lane (2012-2013)

Graduate students mentored: Fei Fan (2011-2014), Max Heres (2013-2014)

Postdocs mentored: Zhe Wang (2015-2017), Christopher N. Lam (2016-2018), Wensheng Xu (2016-2018), Jihong Ma (2019-2020), Zhiqiang Shen (2020-2022), Michael Jacobs (2022-present)

- Taught viscoelasticity of polymers in Polymer Chemistry course at the Chemistry Department of the University of Tennessee, Knoxville (Spring 2012, 2013, and 2014)
- Served as manager of rheometers in soft materials group and routinely trained internal/external users

The University of Akron, Akron, OH

- Judge for Western Reserve District Science Day (2007)
- Teaching assistant for graduate polymer science laboratory course (2007)
- Instructor for Upward Bound Math Science Program (Summer 2007)