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Education

Ph.D. Polymer Science & Engineering, University of Massachusetts, Amherst, MA
June 1984

M.S. Polymer Science & Engineering, University of Massachusetts, Amherst, MA
September 1981

B.S. Materials Science & Engineering, Cornell University, Ithaca, NY
May 1979

Employment Experience

10/2021 to present **Associate Dean for Research**, A. James Clark School of Engineering
Professor, Dept. of Materials Science and Engineering
University of Maryland, College Park, MD

4/2020 to 9/2021 **Interim Dean**, A. James Clark School of Engineering
Professor, Dept. of Materials Science and Engineering
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7/2015 to 4/2020 **Associate Dean for Research**, A. James Clark School of Engineering
Professor, Dept. of Materials Science and Engineering
University of Maryland, College Park, MD

7/2003 to 6/2015 **Professor and Chair**, Department of Materials Science and Eng.
University of Maryland, College Park, MD

7/1997 to 7/2003 **Associate Professor**, Department of Materials and Nuclear Eng.,
University of Maryland, College Park, MD

1/1992 to 6/1997 **Assistant Professor**, Department of Materials and Nuclear Eng.,
University of Maryland, College Park, MD

6/1986 to 1/1992 **Research Scientist** in the Institute for Materials Science &
Engineering, Polymers Division, National Institute of Standards and Technology,
Gaithersburg, MD

6/1984 to **National Research Council Postdoctoral Fellow** at the National Bureau

6/1986 of Standards, Gaithersburg, MD

9/1979 to **Graduate Research Assistant**, Department of Polymer Science &
6/1984 Engineering, University of Massachusetts, Amherst, MA

Summer 1979 **Summer Research Associate**, B.F. Goodrich Co., Brecksville, OH.

Summer 1978 **Materials Research Laboratory Summer Fellowship**, University of
Massachusetts, Amherst, MA.

Publications

As of 04/2024

Web of Science: Total Number of Citations: ~5050 h-index: 40

[Google Scholar](#): Total Number of Citations: ~7100 h-index: 44

Web of Science ResearcherID: [A-3588-2012](#)

Books Edited

1. “Morphological Control of Multiphase Polymer Mixtures”, edited by R.M. Briber, C.C. Han and D.G. Peiffer, MRS Symposium Proceedings Series, volume 461, Fall 1996 meeting, Boston, MA ISBN: 1-55899-365-7

Book Chapters

superscript key: *: students under my direction; †: students not under my direction but with whom I worked closely; ‡: post-docs under my direction or with whom I worked closely; all other authors: collaborators.

5. R.M. Briber, “Linear Chains in Networks”, article for the *Encyclopedia of Materials: Science and Technology*, Edited by K.H. Jergen, R.W. Cahn, M.C. Flemings, B. Ilschner, E.J. Kramer and S. Mahajan, 2001, p. 7227-7231 published by Elsevier Science Ltd., ISBN: 0-08-0431526

4. D. L. Ho[†], R.M. Briber, and C. J. Glinka; “Studies of Organically Modified Clays by Scattering Techniques”, “ACS Symposium Series 804: Polymer Nanocomposites: Synthesis, Characterization and Modeling” edited by R. Krishnamoorti and R. Vaia, 2001, p 127-140, published by the American Chemical Society, ISBN 0-8412-3768-9

3. “Introduction to Engineering Design” Text for ENES 100, T.M. Regan, R.M. Briber, J.W. Dally, W.W. Destler, J.M. Fines, W.L. Fournery, L.L. Gasner, W.G. Lawson, P.A. Minderman, Jr., F.W. Mowrer, C.C. Stevens, C.D. Striffler, R. Windblade, McGraw-Hill, NY, 1996, 1995, 1994, ISBN: 0-07-052198-0

2. B.J. Bauer, R.M. Briber, B. Dickens, "Studies of Grafted Interpenetrating Polymer Networks", Interpenetrating Polymer Networks, Advances in Chemistry Series 239, D. Klemperer, L.H. Sperling, L.A. Utracki, editors, American Chemical Society, 179-204, 1995

1. B.J. Bauer, R.M. Briber, "The Effect of Crosslink Density on Phase Separation in Interpenetrating Polymer Networks", Advances in Interpenetrating Polymer Networks, volume 4, edited by H. Frisch and D. Klemperer, Technomic Publishing, Lancaster, PA, 1994

Articles in Refereed Journals

superscript key: *: students under my direction or co-direction; †: students not under my direction but with whom I worked closely; ‡: post-docs or researchers under my direction or with whom I worked closely; all other authors: collaborators.

127. Peihua Ma, Xiaoxue Jia, Xin Zhang[‡], Yue Li, Yiyang He, Tangyuan Li, Christine Wu, Yong Hoon Joo, Seong-Ho Lee, Taotao Meng, Alexandra H. Brozena, Stephanie Li, Qin Wang, Cheng-I Wei, Robert M. Briber, Yimin Mao[‡], Liangbing Hu, “Ion-chelated porous chitosan nanocrystal for highly efficient postharvest preservation”, *Matter*, Available online 24 June 2024, DOI: 10.1016/j.matt.2024.06.004

126. Yimin Mao[‡], Peihua Ma, Tangyuan Li, He Liu, Xinpeng Zhao, Shufeng Liu, Xiaoxue Jia, Shaik O. Rahaman, Xizheng Wang, Minhua Zhao, Gang Chen, Hua Xie, Alexandra H. Brozena, Bin Zhou, Yaguang Luo, Rodrigo Tarté, Cheng-I Wei, Qin Wang, Robert M. Briber, Liangbing Hu, “Flash Heating Process for Efficient Meat Preservation”, *Nature Communications*, **2024**, 15, 3893, DOI: 10.1038/s41467-024-47967-1

125. Shuaishuai Chena, Jiajun Feng, Feng Jiang[‡], Robert M. Briber, Howard Wang, Facile preparation of near-monodisperse oligocellulose and its elastomeric derivatives with tunable mechanical properties, *Carbohydrate Polymers*, **2023**, DOI: 10.1016/j.carbpol.2023.121493

124. Yuanchao Li, Natalie L. Schwab*, Robert M. Briber, Joseph A. Dura, Trung Van Nguyen, “Modification of Nafion's Nanostructure for the Water Management of PEM Fuel Cells”, *Journal of Polymer Science*, **2023**, 61, 709-722, DOI: 10.1002/pol.20220774

123. Ji Qian, Qi Dong, Kayla Chun, Dongyang Zhu, Xin Zhang[‡], Yimin Mao[‡], James Culver, Sheldon Tai, Jennifer R. German, David P. Dean, Jeffrey T. Miller, Liguang Wang, Tianpin Wu, Tian Li, Alexandra Brozena, Robert M. Briber, Donald K. Milton, William E. Bentley, Liangbing Hu, “Highly Stable, Antiviral, Antibacterial Cotton Textiles via Molecular Engineering”, *Nature Nanotechnology*, **2023**, DOI: 10.1038/s41565-022-01278-y

122. Qi Dong, Xin Zhang[‡], Ji Qian, Shuaiming He, Yimin Mao[‡], Alexandra H. Brozena, Ye Zhang, Travis P. Pollard, Oleg A. Borodin, Yanbin Wang, Bhargav Sai Chava, Siddhartha Das, Peter Zavalij, Carlo U. Segre, Dongyang Zhu, Lin Xu, Yanliang Liang, Yan Yao, Robert M. Briber, Tian Li, Liangbing Hu, “A Cellulose-Derived Supramolecule for Fast Ion Transport”, *Science Advances*, **2022**, 8(49), eadd2031, DOI: 10.1038/d41586-022-04391-z

121. Feng Jiang[‡], Zhiqiang Wang, Xin Zhang[‡], Doug Henderson*, Wonseok Hwang[‡], Robert Briber, Howard Wang, “Synergistically Tailoring Mechanical and Optical Properties of Di-Block Copolymer Thermoplastic Elastomers via Lanthanide Coordination”, *Chemistry of Materials*, **2022**, 34(4), 1578-1589, DOI: 10.1021/acs.chemmater.1c03264

120. Meiling Wu, Xin Zhang[‡], Yun Zhao, Chunpeng Yang, Shuangshuang Jing, Qisheng Wu, Alexandra Brozena, Jeffrey T. Miller, Nicole LiBretto, Tianpin Wu, Sahana Bhattacharyya, Mounesha Garaga, Yue Qi, Steven G. Greenbaum, Robert M. Briber, Yushan Yan, Liangbing

Hu, “A high-performance hydroxide exchange membrane enabled by Cu²⁺-crosslinked chitosan”, *Nature Nanotechnology*, **2022** 17, 6, 629 DOI 10.1038/s41565-022-01112-5

119. Xin Zhang[‡], Kunyi Zhang, Hasso von Bredow, Christopher Metting, George Atanasoff, Robert M. Briber, Oded Rabin, “Remote Chemical Sensing by SERS with Self-Assembly Plasmonic Nanoparticle Arrays on a Fiber”, *Frontiers in Physics*, **2022**, 9, 752943, DOI: 10.3389/fphy.2021.752943

118. Xin Zhang[‡], Yimin Mao[‡], R.M. Briber “Efficient Production of Oligomeric Chitin with Narrow Distributions of Degree of Polymerization Using Sonication-Assisted Phosphoric Acid Hydrolysis”, *Carbohydrate Polymers*, **2022**, 276, 118736, DOI: 10.1016/j.carbpol.2021.118736

117. Zhihan Li, Chaoji Chen, Yuan Yao, Hua Xie, Xin Zhang[‡], Alexandra Brozena, Jianguo Li, Jiaqi Dai, Min Hong, Haiyu Qiao, Yu Ding, Robert Briber, Sheldon Q. Shi, Liangbing Hu, “Sustainable High-Strength Macrofibers Extracted from Natural Bamboo”, *Nature Sustainability*, **2021**, DOI: 10.1038/s41893-021-00831-2

116. Chunpeng Yang, Qisheng Wu, Weiqi Xie, Xin Zhang[‡], Alexandra Brozena, Jin Zheng, Mounesha N. Garaga, Byung Hee Ko, Yimin Mao[‡], Shuaiming He, Yue Gao, Pengbo Wang, Madhusudan Tyagi, Feng Jiao, Robert M. Briber, Paul Albertus, Chunsheng Wang, Steven Greenbaum, Yan-Yan Hu, Akira Isogai, Martin Winter, Kang Xu, Yue Qi, Liangbing Hu, “Copper-Coordinated Cellulose Ion Conductors for Solid-State Batteries”, *Nature*, **2021**, 598, 590–596, DOI: 10.1038/s41586-021-03885-6

115. Xin Zhang[‡], Feng Jiang[‡], Cesar Torres-Luna^{*}, Yoshiharu Nishiyama, Robert M. Briber, and Howard Wang, “Solvent-Assisted Fractionation of Oligomeric Cellulose and Reversible Transformation of Cellulose II and IV”, *ACS Biomaterials Sci. & Eng.*, **2021**, 7, 4792–4797 DOI: 10.1021/acsbiomaterials.1c00885

114. Doug Henderson^{*}, Xin Zhang[‡], Yimin Mao[‡], Liangbing Hu, Robert M. Briber, and Howard Wang, “Cellulose Nanocomposites of Cellulose Nanofibers and Molecular Coils”, *Journal of Composites Science*, **2021**, 5, 200, DOI: 10.3390/jcs5080200

113. Cesar Torres-Luna^{*}, Naiping Hu, Roman Domszy, Xin Fan, Jeff Yang, Robert M. Briber, Nam Sun Wang, Arthur Yang, “Effect of Carbon Chain Length, Ionic Strength, and pH on the in Vitro Release Kinetics of Cationic Drugs from Fatty Acid Loaded Contact Lenses”, *Pharmaceutics*, **2021**, 13, 1060, DOI: 10.3390/pharmaceutics13071060

112. Feng Jiang[‡], Xin Zhang[‡], Yimin Mao[‡], Yoshiharu Nishiyama, R. M. Briber, Howard Wang, “Oligocellulose from acid hydrolysis: A revisit”, *Applied Surface Science*, **2021**, 537(147783), DOI: 10.1016/j.apsusc.2020.147783

111. Torres-Luna, C.^{*}; Hu, N. P.; Fan, X.; Domszy, R.; Yang, J.; Briber, R. M.; Yang, A., “Extended Delivery of Cationic Drugs from Contact Lenses Loaded with Unsaturated Fatty Acids”, *European Journal of Pharmaceutics and Biopharmaceutics*, **2020**, 155, 1-11, DOI: 10.1016/j.ejpb.2020.07.033

110. Hakeem K. Henrya, Junkai Hu, Xiyuan Chenga, Wonseok Hwang[‡], R.M. Briber, YuHuang Wang, Sang Bok Lee, “A Flexible Mesofiber-Based Fast Current Collector”, *Journal of Materials Science*, **2020**, 55(25), 11391-11402, DOI:10.1007/s10853-020-04764-7
109. Lu, R^{*}; Zhang, X[‡]; Fu, L.; Wang, H. F.; Briber, R. M.; Wang, H. W., "Amorphous Cellulose Thin Films", *Cellulose*, **2020**, 27, 6, 2959-2965, DOI:10.1007/s10570-020-03043-7
108. Yubing Zhou, Chaoji Chen, Xin Zhang[‡], Dapeng Liu, Lisha Xu, Jiaqi Dai, Sz-Chian Liou, Yilin Wang, Claire Li, Hua Xie, Qingyun Wu, Bob Foster, Teng Li, R. M. Briber, Liangbing Hu, “Decoupling Ionic and Electronic Pathways in Low-Dimensional Hybrid Conductors”, *J. Am. Chem. Soc.* **2019**, 141, 17830–17837, DOI: 10.1021/jacs.9b09009
107. Cesar Torres-Luna^{*}, Abdollah Koolivand, Xin Fan, Niti R. Agrawal, Naiping Hu, Yuli Zhu, Roman Domszy, R. M. Briber, Nam Sun Wang, Arthur Yang, “Formation of drug-participating catanionic aggregates for extended delivery of non-steroidal anti-inflammatory drugs from contact lenses”, *Biomolecules*, **2019**, 9, 593; DOI:10.3390/biom9100593
106. Feng Jiang[‡], Xin Zhang[‡], Wonseok Hwang[‡], R. M. Briber, Yanxiong Fang, Howard Wang, “Supramolecular luminescent triblock copolymer thermoplastic elastomer via metal-ligand coordination”, *Polymer Testing*, **2019**, 78, 105956, DOI: 10.1016/j.polymertesting.2019.105956
105. Xin Zhang[‡], Yimin Mao[‡], Madhusudan Tyagi, Feng Jiang[‡], Doug Henderson^{*}, Bo Jiang, Zhiwei Lina, Ronald L. Jones, Liangbing Hu, R. M. Briber, Howard Wang, “Molecular partitioning in ternary solutions of cellulose”, *Carbohydrate Polymers*, **2019**, 220, 157–162 DOI: 10.1016/j.carbpol.2019.05.054
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103. Li, T.; Zhang, X.[‡]; Lacey, S. D.; Mi, R. Y.; Zhao, X. P.; Jiang, F.; Song, J. W.; Liu, Z. Q.; Chen, G.; Dai, J. Q.; Yao, Y. G.; Das, S.; Yang, R. G.; Briber, R. M.; Hu, L. B., "Cellulose Ionic Conductors with High Differential Thermal Voltage for Low-Grade Heat Harvesting", *Nature Materials*, **2019**, 18, 608-613, DOI: 10.1038/s41563-019-0315-6
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100. Yimin Mao[‡], Markus Bleuel, Yadong Lyu, Xin Zhang[‡], Doug Henderson^{*}, Howard Wang, R.M. Briber, "Phase Separation and Stack Alignment in Aqueous Cellulose Nanocrystal Suspension under Weak Magnetic Field", *Langmuir*, **2018**, 34, 8042–8051, DOI: 10.1021/acs.langmuir.8b01452
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98. Duncan Kilburn[‡], Reza Behrouzi, Hui-Ting Lee, Krishnarjun Sarkar, R.M. Briber, Sarah A. Woodson; "Entropic stabilization of folded RNA in crowded solutions measured by SAXS", *Nucleic Acids Research*, **2016**, DOI: 10.1093/nar/gkw597
97. Joon Ho Roh[‡]; Madhu Tyagi; Pulakesh Aich; Kimoon Kim; R.M. Briber; Sarah A. Woodson, "Charge screening in RNA: an integral route for dynamical enhancements", *Soft Matter*, **2015**, 11(45), 8741-8745, DOI: 10.1039/C5SM02084K
96. Hui-Ting Lee, Duncan Kilburn[‡], Reza Behrouzi[†], Robert M. Briber, Sarah A. Woodson "Molecular crowding overcomes the destabilizing effects of mutations in a bacterial ribozyme", *Nucleic Acids Research*, **2015**, 43(2) 1170-1176, DOI: 10.1093/nar/gku1335
95. B. Cipriano, S. Banik, R. Sharma, D. Rumore, W. Hwang^{*}, R.M. Briber, S. Raghavan, "Superabsorbent Hydrogels that are Robust and Highly Stretchable", *Macromolecules*, **2014**, (47)13, 4445-4452, DOI: 10.1021/ma500882n
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92. J. Duncan Kilburn[‡], Joon Ho Roh[‡], Behrouzi, Reza, R.M. Briber, Sarah A. Woodson, "Crowders perturb the entropy of RNA energy landscapes to favor folding", *JACS* **2013**, 135, 10055
91. Omar Ayyub[†], M. B. Ibrahim, R.M. Briber, P. Kofinas, "Self-Assembled Block Copolymer Photonic Crystal for Selective Fructose Detection", *Biosens Bioelectron* **2013**, 46, 124-129, DOI: 10.1016/J.Bios.2013.02.025.

90. Wonjoo Lee^{*}, Seung Yong Lee, X. Zhang[‡], R.M. Briber and Oded Rabin “Hexagonally ordered nanoparticles templated using a block copolymer film”, *Nanotechnology*, **2013**, *24*, 045305
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88. Wonjoo Lee^{*}, Peter Kofinas, R.M. Briber; “Structure investigation of poly((2-dimethylamino)ethyl methacrylate)/sodium dodecylsulfate complexes in concentrated poly((2-dimethylamino)ethyl methacrylate) solutions using small angle neutron scattering”, *Polymer*, **2012**, *53*(14), 2942-2948 DOI: 10.1016/j.polymer.2012.04.052
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77. Wonjoo Lee*, P. Kofinas, R.M. Briber, “Small angle neutron scattering study of deuterated sodium dodecylsulfate micellization in dilute poly((2-dimethylamino)ethyl methacrylate) solutions” *Polymer* 51(13), 2872-2878, (2010) DOI: 10.1016/j.polymer.2010.04.018

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9. R.M. Briber, "Small Angle Neutron Scattering Studies of Crosslinked Polymer Blends", *Proceedings of the Polymer Science Society of Japan*, Fall meeting 1990

8. B.J. Bauer, R.M. Briber, "Small Angle Neutron Scattering of Studies of Grafted Interpenetrating Polymer Networks", *Proceedings of the American Chemical Society, Polymer Preprints*, 31, 578(1990)
7. M.A. Schen, R.M. Briber, J. Cline, "X-ray Analysis of a Liquid Crystal Phase Diacetylene Polymerization", *Proceedings of the American Chemical Society, Polymer Preprints*, 32, 290(1990)
6. R.M. Briber, "Microanalysis and Electron Energy Loss Spectroscopy of Polymers", *Proceedings of the Annual Meeting of the Electron Microscope Society of America*, 1987
5. R.M. Briber, "Electron Microscopy of Polymer Blends", *Proceedings of the Annual Meeting of the Electron Microscope Society of America*, 1987
4. B.J. Bauer, R.M. Briber, C.C. Han, "Small Angle Neutron Scattering Studies of Single Phase Interpenetrating Polymer Networks", *Proceedings of the American Chemical Society, Polymer Preprints*, 28(2), 169(1987)
3. R.M. Briber, F. Khoury, "The Phase Diagram and Morphology of Blends of PVF₂ and PEA", *Proceedings of the American Chemical Society, Polymer Preprints*, 26(2), 310(1985)
2. R.M. Briber, "The Identification and Characterization of Two Crystal Forms in MDI/BDO Based Polyurethanes by STEM, TEM and Microdiffraction", *Proceedings of the Electron Microscope Society of America*, 1982, p. 674, Presidential Scholarship Award Winning Paper
1. A.L. Chang, R.M. Briber, E.L. Thomas, "Morphological Studies of PPO-EO/MDI/BDO Based Segmented Urethanes", *Proceedings of the American Chemical Society, Polymer Preprints*, 22(2), 301(1980)

Invited Talks

- NIST, SURF Seminar, June 2018
- University of Massachusetts, Department of Polymer Science and Engineering, February 2016
- University of Delaware, Department of Materials Science and Engineering, October 2014
- Montgomery County CC, Germantown, MD November 2013
- 2013 NIST SURF Seminar Series, NIST, Gaithersburg, MD June 2013
- University of Connecticut, Department of Materials Science and Engineering February 2013
- Carnegie Mellon University, Institute of Materials Science and Engineering March 2013
- University of Maryland Distinguished Scholar-Teacher Lecture November 2012
- ACS National Meeting, San Diego, CA March 2012
- Naval Research Lab, Washington, DC October 2011
- 2011 NIST SURF Seminar Series, NIST, Gaithersburg, MD June 2011
- Joint Institute for Neutron Scattering Workshop, Oak Ridge National Lab, ORNL, May 2011
- GaTech MSE Department Seminar, Atlanta, GA November 2010
- Symposium Honoring Dr. F. Khoury, Univ. Akron, Akron, OH September 2010

- 2010 NIST SURF Seminar Series, NIST, Gaithersburg, MD June 2010
- Annual Meeting of the American Crystallographic Association, Knoxville, TN June 2008
- Plenary Talk, American Conference on Neutron Scattering, Santa Fe, NM May 2008
- NIST/Japan Workshop, NIST, Gaithersburg, MD, December 2007
- Materials Research Society, Boston, MA, November 2007
- National Institutes of Health, NICHD/NIH, Bethesda, MD, October 2006
- International Conference on Small Angle Scattering, Kyoto, Japan, July 2006
- International Conference on Neutron Scattering, Sydney, Australia, November 2005
- Advanced Photon Source Colloquium, Argonne National Lab, October 2005
- Small Angle Scattering Workshop, Army Research Lab, Aberdeen, MD, July 2005
- The Alan Lawley Seminar, Department of Materials Science and Engineering, Drexel University, January 2005
- NIST/University of Maryland Joint Symposium on Biotechnology, College Park, MD October 2004
- American Conference on Neutron Scattering, College Park, MD June 2004
- Princeton University, Department of Chemical Engineering, Princeton, NJ November 2003
- Naval Research Laboratory, Workshop on National User Facilities, Washington, DC October 2003
- NC State University, Department of Chemical Engineering, Raleigh, NC, January 2002
- American Chemical Society Local Chapter, North Carolina Polymer Group Raleigh, NC, January 2002
- Materials Research Society, Boston, Massachusetts, November 2001
- American Chemical Society, Chicago, IL, August 2002
- Advanced Metallization Conference Workshop, Montreal, Canada, September 2001
- IUPAC Macro2000, Warsaw, Poland, July 2000
- Virginia Tech, Dept. of Materials Science and Eng., Blacksburg, VA, March 2000
- Army Research Lab, Aberdeen, MD April 1999
- Institute for Physical Sciences, University of Maryland, December 1998
- National Academy of Sciences/National Research Council Committee on Developing a Federal Materials Facilities Strategy, Irvine CA, November 1998
- Howard University, Department of Chemistry, Washington, DC October 1998
- American Chemical Society Meeting in Nashville, TN September 1998
- NIST Center for Neutron Research Gaithersburg, MD, Short Course on Applications of Cold Neutrons, June 1998
- Materials Research Society Meeting, San Francisco, CA, March 1997
- Department of Chemical Engineering, Columbia University, New York, NY, September 1996
- Cold Neutron Research Facility, NIST, Gaithersburg, MD, Short Course on Applications of Cold Neutrons, June 1996
- University of Delaware, Department of Chemical Engineering, Newark, DE April 1996
- IBM Almaden Research Center, San Jose, CA February 1996
- Cold Neutron Research Facility, NIST, Gaithersburg, MD, Short Course on Applications of Cold Neutrons, August 1995
- American Physical Society, San Jose, CA March 1995
- Army Office of Research, Dendrimer Technology Workshop Research Triangle, North Carolina March 1995

- Materials Research Society, Boston, MA, November 1994
- Intense Pulsed Neutron Source, Argonne National Lab, Argonne, IL September 1994
- Exxon Research and Engineering, Annadale, NJ May 1994
- Reactor Radiation Division, National Institute of Standards and Technology, Gaithersburg, MD April 1994
- Chemical Physics Program, University of Maryland, College Park, MD January 1994
- Chemical Engineering Department, University of Maryland, College Park, MD February 1994
- Sandia National Laboratory, Albuquerque, NM September 1993
- Du Pont, Central Research, Wilmington, DE, October 1992
- American Chemical Society, Washington, D.C., August 1992
- NSF/CNRS U.S. France Workshop on High Performance Polymers, Annecy, France, June 1992
- American Chemical Society, San Francisco, CA, April 1992
- Queens College, Department of Physics, Flushing, NY, February 1992
- North Carolina State University, Department of Materials Science and Engineering, Raleigh, NC, April 1991
- American Physical Society, Cincinnati, OH, March 1991
- Polymer Science Society of Japan, Nagoya, Japan, October 1990
- Cornell University, Department of Materials Science and Engineering, October 1990.
- Materials Research Society Meeting, Boston, MA, December 1989
- University of Chicago, James Franck Institute Colloquium, Chicago, IL, October 1989
- The Goodyear Tire and Rubber Company, Akron, OH, May 1989 Polymers West Gordon Research Conference, Ventura, CA, January 1989
- University of Illinois, Department of Materials Science and Engineering, Urbana Champaign, IL, September 1988
- Northwestern University, Department of Materials Science and Engineering, Evanston, IL, May 1988
- Electron Microscope Society of America, Annual Meeting, Baltimore, MD, August 1987
- Polymers West Gordon Research Conference, Santa Barbara, CA, January 1986
- American Chemical Society, Chicago, IL, September 1985
- Eastman Kodak Company, Rochester, NY, May 1985
- Electron Microscopy Workshop on Polymers, Sponsored by the Univ. of Mass. and JEOL USA, Boston, MA, June 1985
- Case Western Reserve University, Department of Macromolecular Science, Cleveland OH, May 1985
- Brown University, Department of Engineering, Providence RI, April 1985
- University of Minnesota, Department of Chemical Engineering and Materials Science, Minneapolis, MN, February 1985
- The Johns Hopkins University, Department of Materials Science, Baltimore, MD, February 1985
- Du Pont, Central Research, Wilmington, DE, November 1984
- Princeton University, Department of Chemical Engineering, Princeton, NJ, November 1984
- Rutgers University, Department of Mechanics and Materials Engineering, New Brunswick, NJ, October 1984

Contributed Talks

Approximately 2-3 contributed talks per year at national and international meetings.

Patents and Patent Applications

superscript key: *: students under my direction; †: students not under my direction but with whom I worked closely; ‡: postdocs or researchers under my direction or with whom I worked closely; all other authors: collaborators.

“Ion-Conducting Structures, Devices including Ion-Conducting Structures, and Methods for use and Fabrication Thereof”

Inventors: Liangbing Hu, Tian Li, Chunpeng Yang, Xin Zhang[†], Robert M. Briber, Meiling Wu,
Assignee University of Maryland

Patent No.: US 11901505B2

Date of Patent: Feb. 13, 2024

“High-Performance Hydroxide Exchange Membrane”

Inventors: Liangbing Hu, Meiling Wu, Xin Zhang[‡], Robert M. Briber

Assignee University of Maryland

United States Patent Application Publication Pub. No.: US20230317997A1

Pub Date: Oct. 5, 2023

Patent Pending

“Antimicrobial Materials, and Systems and Methods for Fabrication and Use Thereof”

Inventors: Liangbing Hu, Qian Ji, William Bentley, Kayla Chun, Yimin Mao[†], Robert M. Briber, Jiaqi Dai

Assignee University of Maryland

United States Patent Application Publication Pub. No. WO2024107790A1

Pub Date: May 23, 2024

“Nanoparticle Array with Tunable Nanoparticle Size and Separation”

Inventors: Woonjoo Lee^{*}, Seung Yong Lee, Oded Rabin, Robert M. Briber, Xin Zhang[†]

Assignee University of Maryland

Patent No.: US 9279759 B2

Date of Patent: March 8, 2016

Entrepreneurial Activities

Co-founded with Professors Chunsheng Wang and Liangbing Hu the start-up company WH-Power (wh-power.com) to develop advanced batteries

Fellowships, Prizes and Awards

Neutron Scattering Society of America, Award for Exceptional Service Award, 2006, 2018

Neutron Scattering Society of America, Fellow (elected 2014)

University of Maryland Distinguished Scholar-Teacher AY2012-13

American Physical Society, Fellow (elected 1995)

Department of Commerce Bronze Medal for “Contributions to the Understanding of Crosslinked Polymer Blends”, December 1990

Electron Microscope Society of America Presidential Student Scholarship, 1982

Editorships, Editorial Boards, and Reviewing Activities for Journals

Editorial Board Member, *Emergent Materials* (10/2018 to present)

The journal *Emergent Materials* is a multidisciplinary peer-reviewed journal published by Springer, which publishes reviews, mini reviews, communications, progress reports, research news and original research articles at the forefront of physics, chemistry, biology, and engineering of advanced materials.

Editor, *Journal of Polymer Science –Polymer Physics Edition* (1/99-01/07)

The *Journal of Polymer Science –Polymer Physics Edition* is one of the top 3 archival polymer The Journal of Polymer Science –Polymer Physics Edition published by Wiley-Interscience is one of the top refereed journals for publication of research results in polymer science.

Reviewer for the archival journals: *Macromolecules*, *Nature*, *Carbohydrate Polymers*, *Cellulose*, *Physical Review Letters*, *Science*, *Journal of Chemical Physics*, *Polymer*, *Polymer Engineering and Science*. Typically I review about 10 papers per year for these journals.

Conferences Organized

Co-Organizer, *Neutrons for the Future*, October 2023, Rockville MD. This was a 3-day workshop with about 200 participants

Co-Organizer, *13th international Polarized Neutrons for Condensed-Matter Investigations (PNCMI)*, July 2022, Annapolis, MD. This is a 4-day workshop with about 100 participants

Co-Organizer, *8th Design and Engineering of Neutron Instruments Meeting (DENIM VIII)* Bethesda, Maryland, September 2019. This is a 4-day workshop with about 100 participants

Co-Organizer, ASEE Engineering Research Council Annual Meeting, 2017, 2018, 2019, 2023, 2024 in Washington DC, March each year. This is an annual workshop organized by the Board of Directors of the ASEE Engineering Research Council with about 100 participants

Co-Organizer, *American Conference on Neutron Scattering*, College Park, MD, June 2018. This is an international conference with about 400 participants

Co-Organizer, *19th Mid-Atlantic Soft Matter Workshop* at the University of Maryland, February 2018. This is 1-day workshop with about 100 participants

Co-Organizer, *ASEE Engineering Research Council Annual Meeting*, Arlington, VA, March 2018. This is a 3-day meeting for Engineering Research Deans with about 100 participants

Co-Organizer, *International Workshop on Sample Environment at Scattering Facilities* in Gettysburg, PA, September 2016, Organizing Committee, This is a 4-day workshop with about 80 participants

15th Mid-Atlantic Soft Matter Workshop at the University of Maryland, July 2015. 1-day workshop with about 100 participants

University of Maryland / NIST Center for Neutron Research *Workshop on Neutron Measurements for Materials Design and Characterization* in Potomac, MD, August 2014. This is 2-day workshop with 100 participants

University of Maryland / NIST Center for Neutron Research *Neutron Day* at the University of Maryland, October 2014. This is ½-day workshop with about 100 participants held

9th Mid-Atlantic Soft Matter Workshop at the University of Maryland, July 2012. This is a 1-day workshop with about 100 participants

International Organizing Committee, *9th meeting of the Ionizing Radiation and Polymers Symposium*, (IRaP 2010) at the University of Maryland, October 2010

International Advisory Committee, *International Conference on Neutron Scattering*, Knoxville, TN May 2009

General Chair, *American Conference on Neutron Scattering*, College Park, MD June 2004. This is an international conference with about 500 participants.

First American Conference on Neutron Scattering, Knoxville, TN, June 2002. This is an international conference which had ~400 participants. It was the inaugural conference and it is now run every two years.

Soft Materials and Structural Biology Breakout Session at the SNS Users Meeting, May 2000, Washington, DC

SNS LWTS Polymers, Colloids & Biology Workshop, April 2000 at University of Maryland, College Park, MD

Morphological Control of Multiphase Polymer Mixtures, MRS Fall 1996 meeting, Boston, MA

Session Chair at 2-3 conferences per year, typically APS, ACS, MRS and Gordon Conferences

Professional Elected Offices

Member of the ASEE Engineering Research Council Board of Directors 2017-2020 & 2022-2024

Neutron Scattering Society of America, President 2002-2005

Neutron Scattering Society of America, Vice President 1999-2002

Member-at-Large to the Executive Committee of the Division of Polymer Physics, American Physical Society, 1999-2002

Professional Memberships

American Physical Society (Fellow of the APS)

Neutron Scattering Society of America (Fellow of the NSSA)

Materials Research Society

American Chemical Society

Biophysical Society

American Society for Engineering Education

Professional Committee Memberships

- ASEE Engineering Research Council Board of Directors
- Review of the Instrument Suite for SANS/Reflectometry at the Spallation Neutron Source (SNS) and High Flux Isotope Reactor (HFIR) January 2017
- DOE BESAC Subcommittee on Facility Upgrades April 2016
- NIST Center for Neutron Research Program Advisory Committee, member 2014-2017
- DOE-BES Review Panel at the LBNL Materials Science Division 2014
- Oak Ridge National Lab Neutron Scattering Science Review Committee Member 2007 to 2014
- DOE UTenn/ORNL EPSCoR Review Committee 11/2009
- NIST Center for Neutron Research Program Advisory Committee, member 1999 to 2004
- University of Chicago Review Committee for the Intense Pulsed Neutron Source at Argonne National Laboratory 1997, 1999, 2001
- Large Length Scales Working Group, Spallation Neutron Source, Oak Ridge National Lab, Dept. of Energy, November 1998
- Basic Energy Science Advisory Committee Review of the High Flux Isotope Reactor at Oak Ridge National Lab, October 1998
- Scheduling Committee, American Physical Society, Division of High Polymer Physics March Meeting, 1994-1998
- Los Alamos -Argonne National Laboratory Pulsed Neutron Source Program Advisory Committee 1993-1997 (Chair 1996-97)
- Society of Plastics Engineers (SPE) Research Award Committee, 1994-1997
- American Physical Society Division of High Polymer Physics Nominations Committee
- NASA Microgravity Research Review Panel for Polymers, 1995, 1997