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### **Education**

**Ph.D.** Polymer Science & Engineering, University of Massachusetts,  
Amherst, MA February 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**

7/2015 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

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

10/1985 to 1/1992 **Research Scientist** in the Institute for Materials Science &  
Engineering, Polymers Division, National Institute of Standards and  
Technology, Gaithersburg, MD

1/1984 to 10/1985 **National Research Council Postdoctoral Fellow** tenured at the  
National Bureau of Standards, Gaithersburg, MD

9/1979 to 1/1984 **Graduate Research Assistant**, Department of Polymer Science &  
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 10/2015 from the *Web of Science*: Total Number of Citations: 2514 h-index: 30

## 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<sup>‡</sup>, 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. Fournay, 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; †: 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.

96. Hui-Ting Lee, Duncan Kilburn<sup>‡</sup>, Reza Behrouzi<sup>†</sup>, 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<sup>\*</sup>, R.M. Briber, S. Raghavan, "Superabsorbent Hydrogels that are Robust and Highly Stretchable", *Macromolecules*, **2014**, (47)13, 4445-4452, DOI 10.1021/ma500882n

94. Ruiliang Bai<sup>\*</sup>, Peter J. Basser, R.M. Briber and Ferenc Horkay, "NMR Water Self-Diffusion and Relaxation Studies on Sodium Polyacrylate Solutions and Gels in Physiologic Ionic Solutions", *J. of Applied Polymer Science* **2014**, 131(6), DOI: 10.1002/app.40001
93. Bergstrom<sup>†</sup>, R., Jr.; Wuttig, M.; Cullen, J.; Zavalij, P.; Briber, R.; Dennis, C.; Garlea, V. O.; Laver, M., "Morphotropic Phase Boundaries in Ferromagnets: Tb<sub>1-x</sub>Dy<sub>x</sub> Fe<sub>2</sub> Alloys", *Physical Review Letters* **2013**, 111, (1), 017203 DOI: 10.1103
92. J. Duncan Kilburn<sup>‡</sup>, Joon Ho Roh<sup>‡</sup>, 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<sup>†</sup>, 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<sup>\*</sup>, Seung Yong Lee, X. Zhang<sup>‡</sup>, R.M. Briber and Oded Rabin "Hexagonally ordered nanoparticles templated using a block copolymer film", *Nanotechnology*, **2013**, 24, 045305
89. B.J. Watson<sup>†</sup>, B. Hammouda, R.M. Briber, and S.W. Hutcheson; "Influence of Organic Liquids on the Nanostructure of Precipitated Cellulose", *J. of Applied Polym. Sci.* **2013**, 127(4), 2620-2627 DOI: 10.1002/app.37540
88. Wonjoo Lee<sup>\*</sup>, 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
87. Xin Zhang<sup>‡</sup>, Andrei B. Sushkov, Christopher J. Metting<sup>\*</sup>, Sean Fackler, H. Dennis Drew, R. M. Briber; "Silicon patterning using self-assembled PS-b-PAA diblock copolymer masks for black silicon fabrication via plasma etching" *Plasma Processes and Polymers*, **2012**, 9(10), 968-974, Doi 10.1002/Ppap.201100198
86. Reza Behrouzi<sup>†</sup>, Joon Ho Roh<sup>‡</sup>, Duncan Kilburn<sup>‡</sup>, R. M. Briber, Sarah A. Woodson, "Native architecture encodes cooperativity and specificity in RNA folding intermediates", *Cell* **2012**, 149, 348-357
85. Joon Ho Roh<sup>‡</sup>, Madhu Tyagi, R. M. Briber, Sarah A. Woodson, Alexei P. Sokolov, "The dynamics of unfolded versus folded tRNA: The role of electrostatic interactions", *JACS*, 2011, 133, 16406-16409 dx.doi.org/10.1021/ja207667u
84. Sangcheol Kim<sup>‡</sup>, Jack F. Douglas, Christopher L. Soles, Alamgir Karim, and R. M. Briber; "Using Block Copolymer Self-Assembly to Imprint the Crystallization of Polymer Dendrites", *Soft Matter*, 2011, 7, 8969-8976. DOI: 10.1039/C1SM05768E

83. Omar Ayyub<sup>†</sup>, Jennifer W. Sekowski, Ta-I Yang, Xin Zhang<sup>‡</sup>, R. M. Briber, Peter Kofinas; “Color Changing Block Copolymer Films for Chemical Sensing of Simple Sugars”, *Biosensors and Bioelectronics*, **2011**, 28, 349–354 doi:10.1016/j.bios.2011.07.043
82. K. L. Krycka, A. J. Jackson, J. A. Borchers, J. Shih<sup>\*</sup>, R.M. Briber, R. Ivkov, C. Gruttner, and C. L. Dennis; “Internal magnetic structure of dextran coated magnetite nanoparticles in solution using small angle neutron scattering with polarization analysis”, *J. of Applied Physics* 109, 07B513 (2011)
81. Xin Zhang<sup>‡</sup>, Christopher Metting<sup>\*</sup>, R. M. Briber, Florian Weilnboeck, Sang Hak Shin<sup>\*</sup>, Benjamin Jones<sup>\*</sup> and Gottlieb Oehrlein, Poly(2-vinyl naphthalene-b-acrylic acid) block copolymer self-assembled pattern formation, alignment and transfer” *Macromolecular Chemistry & Physics* 2011, 212(16), 1735–1741 DOI: 10.1002/macp.201100232
80. Wonjoo Lee<sup>\*</sup>, Seung Yong Lee, R. M. Briber and Oded Rabin, “Fully Self-Assembled SERS Substrate with Tunable Surface Plasmon Resonances”, *Advanced Functional Materials*, 2011, 21, 3424–3429 DOI: 10.1002/adfm.201101218
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75. Wonjoo Lee<sup>\*</sup>, Xin Zhang<sup>\*</sup>, and R.M. Briber, “A Simple Method for Creating Nanoporous Block-Copolymer Thin Films”, *Polymer* 51(11), 2376-2382, (2010), 10.1016 / j.polymer.2010.03.023
74. S. Khodadadi, J.H. Roh<sup>‡</sup> Biological Macromolecules: Not a Simple “Slaving” by Hydration Water”, *Biophysical Journal* **98**, (2010) 1321–1326, doi:10.1016/j.bpj.2009.12.4284
73. Sarvin Moghaddam<sup>‡</sup>, Gokhan Caliskan<sup>‡</sup>, Seema Chauhan, Changbong Hyeon, R.M. Briber, D. Thirumalai, Sarah A. Woodson; “Metal Ion Dependence of Cooperative Collapse Transitions in RNA”, *Journal of Molecular Biology*, 393(3), 753-7648 (2009) doi:10.1016/j.jmb.2009.08.044
72. Shenqiang Ren<sup>†</sup>, R.M. Briber, and Manfred Wuttig, “Self-Organized Two-Dimensional

Onions” *Applied Physics Letters*, 94(11), 113507 (2009) DOI: 10.1063/1.3101373

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69. Ramesh Dandu, Arthur Von Cresce<sup>‡</sup>, R.M. Briber, Paul Dowell, Joseph Cappello, Hamidreza Ghandehari; “Silk-Elastinlike Hydrogels: Influence of Monomer Sequence on Physicochemical Properties”, *Polymer*, 50(2), 366-374 (2009)

68. Shenqiang Ren<sup>†</sup>, R.M. Briber, and Manfred Wuttig, “Diblock copolymer based self-assembled nanomagnetoelectric”, *Applied Physics Letters*, 93(17), 173507 (2008) DOI:10.1063/1.3005558

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66. Sangcheol Kim<sup>‡</sup>, R.M. Briber, Alamgir Karim, Ronald L. Jones, and Ho-Cheol Kim; “Environment-Controlled Spin Coating to Orient Microdomains in Thin Block Copolymer Films”, *Macromolecules*, 40(12), 4102-4105 (2007)

65. P. Akcora<sup>†</sup>, R.M. Briber, P. Kofinas; “TEM characterization of diblock copolymer templated iron oxide nanoparticles: Bulk solution and thin film surface doping approach”; *Polymer*, 47(6), 2018-2022 (2006)

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57. T. Kashiwagi, R.H. Harris Jr., X. Zhang<sup>\*</sup>, R.M. Briber, B.H. Cipriano, S.R. Raghavan, W.H. Awada, J.R. Shields, "Flame retardant mechanism of polyamide 6–clay nanocomposites", *Polymer* 45, 881–891 (2004)
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55. M. K. McDermott<sup>\*</sup>, LeRoy W. Schroeder, Shay L. Balsis, N. A. Paradiso, M. L. Byrne, R.M. Briber; "Mechanical Properties of Polyurethane Film Exposed to Solutions of Nonoxynol-9 Surfactant and Poly(ethylene glycol)", *J. of Applied Polymer Science* , 91(2), 1086-1096 (2004)
54. U.A. Perez-Salas<sup>‡</sup>, P. Rangan, S. Krueger, R.M. Briber, D. Thirumalai, S.A. Woodson, "Compaction of a Bacterial Group I Ribozyme Coincides with the Assembly of Core Helices", *Biochemistry*, 43, 1746–1753 (2004)
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51. M.P. Nieh, S. Kumar, D. L. Ho, R.M. Briber, "Neutron Scattering Study of Chain Conformations in the Energetically Neutral Pores of Vycor Glass", *Macromolecules*, 35, 6384-6391(2002)
50. U. Perez-Salas<sup>\*</sup>, R.M. Briber, M.H. Rafailovich, J.Sokolov, "Interfacial Fracture Toughness Between Glassy Polymer Networks", *J. Polymer Sci –Polymer Physics Ed.*, 41(16), 1902-1908(2003)
49. U. Perez-Salas, L. Nasser, R.M. Briber, W.A. Hamilton, M.H. Rafailovich, J.Sokolov, "Polystyrene Network-Network Interdiffusion", *Macromolecules* 35, 6638-6644(2002)

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47. D.L. Ho<sup>‡</sup>, R.M. Briber, C.J. Glinka; "Characterization of Modified Clays using Scattering and Microscopy Techniques", *Chemistry of Materials*; 13(5); 1923-1931(2001)
46. R.L. Jones<sup>†</sup>, S.K. Kumar, D.L. Ho<sup>\*</sup>, R.M. Briber, T.P. Russell; "Chain Conformation in Ultrathin Films using Small Angle Neutron Scattering", *Macromolecules*, 34(3), 559-567(2001)
45. S. Choi<sup>\*</sup>, R.M. Briber, B.J. Bauer, D.-W. Liu, M. Gauthier; "Small Angle Neutron Scattering of Blends of Arborescent Polystyrenes", *Macromolecules*, 33(17), 6495-6501(2000)
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39. J.S. Fodor<sup>‡</sup>, R.M. Briber, T.P. Russell, K.R. Carter, J.L. Hedrick, R.D. Miller, "Non-Uniform Composition Profiles in Thin Film Polymeric Nanofoams", *Polymer*, 40:10, (2547)1999
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37. S. Choi<sup>\*</sup>, X. Liu, R.M. Briber; "Small Angle Scattering of Polymer Blends of Polyvinylmethylether at Dilute Concentration in Deuterated Polystyrene", *J. of Polymer Science, Polymer Physics Edition*, 36, 1(1998)
36. J.Y. Cheng<sup>‡</sup>, Y. Xie, D.I. Bigio, R.M. Briber; "Slip Flow in a Partially Filled Screw Channel" *Journal of Reinforced Plastics and Composites*, 17(8), 712(1998)
35. J.Y. Cheng<sup>‡</sup>, D.I. Bigio, R.M. Briber; "Shear Effect on the Devolatilization of Filled Polymers", *J. of Vinyl & Additive Technology*, 4(1), 45(1998)

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33. X. Liu<sup>\*</sup>, B.J. Bauer, R.M. Briber; "The Conformation of Free Linear Polymer Chains in a Polymer Network", *Macromolecules*, 30(16), 4704(1997)
32. M. Benmouna, R.M. Briber, B. Hammouda; "Polymer Blends, Copolymers and Networks. Scattering Properties and Phase Behavior", *Macromolecular Theory and Simulations*, 6, 197(1997)
31. N.C. Beck-Tan<sup>\*</sup>, S.K. Tai, R.M. Briber; "Morphology Control and Interfacial Reinforcement in Reactive Polystyrene/Amorphous Polyamide Blends", *Polymer*, 37(16), 3509(1996)
30. N.C. Beck-Tan<sup>\*</sup>, D.G. Peiffer, R.M. Briber; "Reactive Reinforcement of Polystyrene/Poly(2-vinyl pyridine) Interfaces", *Macromolecules*, 29(14), 4969-4975(1996)
29. R.M. Briber, X. Liu<sup>\*</sup>, B.J. Bauer; "The Collapse of Free Polymer Chains in a Network", *Science*, 268, 395-399(1995)
28. E.A. Di Marzio, R.M. Briber; "Collapse of a Polymer in a Polymeric Solvent", *Macromolecules* 28, 4020-4023(1995)
27. N.C. Beck Tan<sup>\*</sup>, X. Liu, D.G. Peiffer, R.M. Briber; "A Study of Compatibility In the System Polystyrene/Sulfonated Polystyrene", *Polymer*, 36(10), 1969(1995)
26. R.M. Briber, B.J. Bauer, B. Hammouda, "Small Angle Neutron Scattering from Dilute Blends of Deuterated Polystyrene in Polyvinylmethylether and Protonated Polystyrene)", *J. Chem. Phys.*, 101(3), 2592(1994)
25. X. Liu<sup>\*</sup>, R.M. Briber, B.J. Bauer, "Electron Beam Crosslinking of Polyvinylmethylether, *J. Polymer Science: Polymer Physics Edition*, 32, 811(1994)
24. N.C. Beck Tan<sup>\*</sup>, R.M. Aiken, R.M. Briber; "Fracture Toughness of Discontinuously Reinforced Al-4Cu-1.5Mg/TiB<sub>2</sub> Composites", *Metall. and Materials Trans. A*, 25A, 2461(1994)
23. X. Zheng, Z. Zhao, M.H. Rafailovich, J. Sokolov, R.M. Briber, S.A. Schwarz, "Diffusion of Linear Deuterated Polystyrene Chains In Crosslinked Polystyrene Networks", *Macromolecules*, 26, 6431(1993)
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13. R.M. Briber, P. Sung, J.D. Barnes, "Small Angle X-Ray Study of the Deformation of MDI/BDO Based Polyurethanes", *National Institute of Standards and Technology Internal Report (NISTIR 88-3873)*, October 1988
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11. R.M. Briber, F. Khoury, "The Phase Diagram and Morphology of PVF<sub>2</sub>/PEA Blends", *Polymer*, 28, 38(1987)
10. R.M. Briber, F. Khoury, "Applications of Electron Energy Loss Spectroscopy to Polymers", *J. Polym. Sci., Polym. Phys. Ed.*, 26, 621(1986)
9. R.M. Briber, P. Sung, "WAXS Study of the Deformation MDI/BDO Based Polyurethanes", *Polymer Communications*, 28(6), 161(1987)
8. C.K. Chiang, B.J. Bauer, R.M. Briber, G.T. Davis, "Synthesis of Ionic Conducting Interpenetrating Polymer Networks", *Polymer Communications*, 28, 34(1987)

7. R.M. Briber, E.L. Thomas, "The Crystal Habit and Morphology of Polybutylene Terephthalate and Related Copolymers", *Polymer*, 27, 66(1986)
6. R.M. Briber, E.L. Thomas, "The Structure of MDI/BDO Based Polyurethanes: Diffraction Studies on Model Compounds and Oriented Thin Films", *J. Polym. Sci., Polym. Phys. Ed.* 23, 1915(1985)
5. R.M. Briber, E.L. Thomas, "The Crystallization Behavior of Random Block Copolymers of Polybutylene Terephthalate and Polytetramethylene Ether Glycol", *Polymer*, 26, 8(1985)
4. W.W. Adams, R.M. Briber, E.S. Sherman, R.S. Porter, E.L. Thomas, J.S. Lin, "Microstructure of High Modulus Solid State Extruded Polyethylene II: X-ray Scattering Studies", *Polymer*, 26, 17(1985)
3. R.M. Briber, E.L. Thomas, "The Investigation of Two Crystal Forms in MDI/BDO Based Polyurethanes", *J. Macromol. Sci.-Physics*, 22(4), 509(1983)
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1. A.L. Chang, R.M. Briber, E.L. Thomas, R.J. Zdrahala, F.E. Critchfield, "A Morphological Study of the Structure Developed During the Polymerization of a Series of Segmented Polyurethanes", *Polymer*, 23, 1060(1982)

## Reports and other Articles

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. Joon Ho Roh<sup>‡</sup>, Madhu Tyagi, R. M. Briber, Sarah A. Woodson, Alexei P. Sokolov, "The role of electrostatic interactions in the local dynamics of biological and synthetic polyelectrolytes", *2012 NIST Center for Neutron Research Annual Report: Accomplishments and Opportunities*, 14-15; based on the publication: "The dynamics of unfolded versus folded tRNA: The role of electrostatic interactions", *JACS*, 2011, 133, 16406–16409 x.doi.org/10.1021/ja207667u
4. Parag Banerjee and R. M. Briber, "Survey reveals interdisciplinarity of MSE faculty", *MRS Bulletin*, 37(6) June 541-542(2012) doi:10.1557/mrs.2012.128
3. Joon Ho Roh<sup>‡</sup>, Liang Guo, J. Duncan Kilburn<sup>†</sup>, R.M. Briber, Thomas Irving, Sarah A. Woodson, APS Science 2010 Annual Report, "It's Magic: Folding in Ribozymes" based on the publication: "Multistage collapse of a bacterial ribozyme observed by time-resolved SAXS", *JACS*, 132(29), 10148–10154, (2010)

2. APS Committee on International Scientific Affairs report on “Access to Major International X-Ray & Neutron Facilities” by Henry Glyde (Chair), University of Delaware; R.M. Briber, University of Maryland; Sunil Sinha, University of California, San Diego; Approved by the APS Executive Board, 30 April 2009

<http://www.aps.org/programs/international/resources/facilities.cfm>

1. G. Caliskan<sup>‡</sup>, R.M. Briber, D. Thirumalai, V. Garcia-Sakai, S.A. Woodson, A.P. Sokolov, “Dynamic Transition in tRNA is Solvent Induced”, *2006 NIST Center for Neutron Research Annual Report: Accomplishments and Opportunities*, 34-35; based on the publication: G. Caliskan, R.M. Briber, D. Thirumalai, V. Garcia-Sakai, S.A. Woodson, A.P. Sokolov, “Dynamic Transition in tRNA is Solvent Induced”, *JACS Communications*, 128, 32-33 (2006)

## Conference Proceedings and Talks

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.

## Refereed Conference Proceedings

11. Seung Yong Lee, Wonjoo Lee<sup>\*</sup>, R.M. Briber, Oded Rabin; “High-throughput nanostructured SERS substrates by self-assembly”, in *Proceedings of the SPIE Defense, Security, and Sensing Conference*, Baltimore, MD, **2012**.

10. Sangcheol Kim<sup>†</sup>, R.M. Briber, Alamgir Karim, Ronald L. Jones, and Ho-Cheol Kim; “Fabrication of Thin Block Copolymer Films under Controlled Atmosphere”, MRS Symposium Proceedings Series, volume XXX, Fall 2006 Meeting, Boston, MA

9. R.M. Briber, J.S. Fodor<sup>‡</sup>, T.P. Russell, R.D. Miller, K.R. Carter and J.L. Hedrick; “Characterization of Thin Polymeric Nanofoam Films by Transmission Electron Microscopy and Small Angle Neutron Scattering” in “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

8. R.M. Briber, D.I. Bigio, J. Lochary; “Integration of Manufacturing into the Undergraduate Polymer Engineering Curriculum”, *Proceedings of the 1996 ABET Annual Conference on Innovation in Engineering Education*

7. J. Cheng<sup>†</sup>, D.I. Bigio, R.M. Briber; "Devolatilization of Filled Polymeric Materials: I- Batch Study" *Proceedings of SPE ANTEC 1996*, page 365-369.

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5. J.G. Barker, A.M. Mayes, R.M. Briber, B. Orts<sup>†</sup>; “Scaling of The Radius of Gyration with Concentration”, *Proceedings of the Materials Research Society*, Vol. 376, Neutron Scattering in Materials Science, 1994

4. X. Liu<sup>\*</sup>, B.J. Bauer, R.M. Briber, "Collapse of Isolated Chains in a Network", *Proceedings of the Materials Research Society*, 1994
3. P. Sung, R.M. Briber, Characterization of the Morphology of MDI/BDO Based Polyurethanes, *Proceedings of the Fourth World Biomaterials Congress*, Berlin, Germany, 4/92
2. B.J. Bauer, R.M. Briber, S. Malone, C. Cohen, "Small Angle Neutron Scattering Studies of Single Phase IPNS", *Proceedings of the Materials Research Society, Symposium on Submicron Multiphase Materials*, 1992
1. X. Zhao, W. Zhao, J. Sokolov, M.H. Rafailovich, H.D. Gafney, R.M. Briber, B.J. Wilkins, "Diffusion of Polymers in Crosslinked Networks", *Proceeding of the Materials Research Society, Symposium on the Dynamics of Small Confining Systems*, 1990

#### Unrefereed Conference Proceedings

41. Karim, A.; Berry, B.; Zhang, X.; Yager, K.; Kim, S.; Bosse, A.; Douglas, J. F.; Jones, R. L.; Briber, R.M.; Kim, H. C., "Directed Assembly of Block Copolymer Films", *PMSE Prepr.* 2009, 100, 733-734.
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39. Lee, W.; Kofinas, P.; Briber, R.M., "Growth of Anionic Micelles in Polymer Solutions and Hydrogels", *PMSE Prepr.* 2009, 101, 1413-1414.
38. Shin, S. H.; Briber, R.M., "Small Angle Neutron Scattering of Poly(Ethylene Oxide) in Ethyl Alcohol/Water Mixtures: Clustering and Solvation", *PMSE Prepr.* 2009, 101, 802-803.
37. Karim, A.; Berry, B.; Kim, S.; Bosse, A.; Douglas, J. F.; Jones, R. L.; Briber, R.M.; Kim, H. C., "Guided Self-Assembly of Block-Copolymer Nanostructures", *NSTI Nanotech, Nanotechnol. Conf. Trade Show, Tech. Proc.* 2008, 1, 875-876.
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35. Kim, S.; Berry, B. C.; Jones, R. L.; Karim, A.; Briber, R.M.; Kim, H. C., "Unconventional Processing for Defect Control in Block-Copolymer Thin Films", *Polym. Prepr. (Am. Chem. Soc., Div. Polym. Chem.)* 2007, 48, (1), 939.
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33. Zhang, X.; Briber, R.M.; Kashiwagi, T., "Experimental Observations of Pmma/Layered Silicate Nanocomposite Flammability", SAMPE Conf. Proc. 2007, 52, 215/211-215/215.
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27. Xin Zhang, R.M. Briber, Richard H. Harris Jr. and Takashi Kashiwagi, "Characterization of Changes in the Clay Platelet Distribution in Polyamide 6/Clay Nanocomposites During Combustion by TEM and X-Ray Diffraction", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, (2003), New York Meeting
26. Hongxia Feng, R.M. Briber, Victor Y. Lee, Robert D. Miller, Ho-Cheol Kim, "Suppression of Dewetting in Polystyrene Thin Films by Using Nanoparticles" *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, (2003), New York Meeting
25. P. Lazzeri, L. Vanzetti, E. Iacob, M. Bersani, M. Anderle, J.J. Park, Z. Lin, R.M. Briber, G.W. Rubloff, R.D. Miller, "Material Characterization and the Formation of Nanoporous PMSSQ Low-K Dielectric", 2003 International Conference on Characterization and Metrology for ULSI Technology, March 24-28, 2003, Austin, TX, USA
24. G.Y. Yang<sup>‡</sup>, R.M. Briber, E.Huang, P.M. Rice, W. Volksen, R.D. Miller, "Formation and Characterization of Ultra-low Dielectric Materials Using TEM and SANS", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, 85, 18-19 (2001)

23. S.I.Yun<sup>\*</sup>, R.M. Briber, R.A. Kee, M. Gauthier, "Small Angle Neutron Scattering of Arborescent Graft Poly(styrene)-Poly(2-vinylpyridine) Polymers", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, 85, 224-225 (2001)
22. D.L. Ho<sup>‡</sup>, R.M. Briber, C.J. Glinka, "Studies on Organically Modified Clays using Scattering Techniques", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, Spring 2000, San Francisco, 82, 268-9 (2000)
21. Kumar S.K., Jones R.L.<sup>†</sup>, Ho D.L.<sup>\*</sup>, Briber R.M., Russell T.P., "Phase Behavior of Thin Film Polymer Blends", *Abstracts of Papers of the American Chemical Society*, 216, 213 (1998)
20. J. Cheng<sup>‡</sup>, D.I. Bigio and R.M. Briber, "Devolatilization of Solid Filled Polymeric Materials: Batch Experiments with Newtonian and Viscoelastic Matrices," *24th Soc. of ABM Conference*, Philadelphia, PA, Oct, 1-2 (1995)
19. J. Cheng<sup>‡</sup>, D.I. Bigio and R.M. Briber, "Devolatilization of Filled Polymeric Materials," *Polymer Processing Society Conference*, Akron, Ohio, Nov. 14-16 (1995)
18. B.J. Bauer, B. Hammouda, J.D. Barnes, R.M. Briber, D.A. Tomalia, "SANS and SAXS from Solutions of Large Dendrimer Molecules", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, 74, 706(1994)
17. X. Liu<sup>\*</sup>, B.J. Bauer, R.M. Briber, "Conformation of Linear Chains Trapped in a Network", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, 74, 576(1994)
16. B.J. Bauer, B. Hammouda, R.M. Briber, D.A. Tomalia, "Small Angle Neutron Scattering from Solutions of Large Dendrimer Molecules", *Proceedings of the American Chemical Society, Polymeric Materials: Science and Engineering*, 69, (1993)
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13. R.M. Briber, E. Gholz, S. Wu, "Image Analysis of the Late Stages of Phase Separation in Polymer Blends", *Proceedings of the American Chemical Society, Polymer Preprints*, 33(1), 775(1992)
12. R.M. Briber, B.J. Bauer, "Thermodynamics and Small Angle Scattering of Crosslinked Polymer Mixtures", *Proceedings of the American Chemical Society, Polymer Preprints*, 33(1), 344(1992)

11. R.M. Briber, B.J. Bauer, "Thermodynamics of Complex Polymer Systems", *Physics News* 1991, published by the American Institute of Physics
10. B.J. Bauer, R.M. Briber, B. Dickens, "Studies of Grafted Interpenetrating Polymer Networks", *Proceedings of the American Chemical Society, Polymer Preprints*, Sept. 1991
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 PVF<sub>2</sub> 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

- 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.

### **Fellowships, Prizes and Awards**

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**

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 journals for publication of high quality research results. The editorial office at The University of Maryland run by R.M. Briber processes about 150 manuscripts per year. There are 3 other editorial offices for the journal. This involves receiving the initial manuscripts, sending the manuscripts out for review (generally 2 independent reviews), evaluating the reviews, requesting and evaluating author responses to the review, re-review if necessary, acceptance of the articles and forwarding on to the publisher (Wiley Interscience).

Reviewer for the archival journals: *Macromolecules*, *Physical Review Letters*, *Science*, *Journal of Chemical Physics*, *Polymer*, *Polymer Engineering and Science*. Typically I review 10-12 papers per year for these journals.

### **Conferences Organized**

Mid-Atlantic Soft Matter Workshop 9 at the University of Maryland July 2012. One day workshop with 100 participants. Co-Organized with Professor S. Raghavan, Department of Chemical and Biomolecular Engineering.

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

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

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

General Chair, *First American Conference on Neutron Scattering*, Knoxville, TN, June 2002. This is an international conference which had ~400 participants. It was the first time the conference was run 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**

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

### **Professional Committee Memberships**

- Oak Ridge National Lab Neutron Scattering Science Review Committee Member 2007 to 2013

- 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