

## Brad Lokitz

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### EDUCATION

Millsaps College, Jackson, MS Chemistry B.S., 2002

University of Southern Mississippi, Hattiesburg, MS Polymer Science & Engineering Ph.D. 2007

### PROFESSIONAL EXPERIENCE

4/2010–p Research Staff Member, Macromolecular Nanomaterials Group, Center for Nanophase Materials Sciences, ORNL

8/2007–3/2010 Postdoctoral Research Associate, Spallation Neutron Source and Center for Nanophase Materials Sciences, ORNL

### PROFESSIONAL ACTIVITIES

2007-p Reviewer: *Langmuir*, *Macromolecules*, *Polymer Chemistry* and *Australian Journal of Chemistry*

2002-p Member, American Chemical Society (ACS)

2007-p Member, Materials Research Society (MRS)

### HONORS AND AWARDS

8/2003-8/2007 Robert M. Hearin Fellow, University of Southern Mississippi

### RESEARCH INTERESTS

The global community faces significant challenges in energy, sustainability, and public health that must be addressed to maintain and improve our way of life. Nanotechnology, bio-related materials, and alternative energy sources are at the forefront of research for use in addressing these needs, and recent work shows that polymeric materials form the basis for promising solutions in all of these research areas. My principal research activities focus on understanding the assembly-structure-property relationships of well-defined polymers and ultrathin polymer films that can assemble into to new and useful structures. I am interested in studying polymeric materials and analyzing their nanoscale structure and responsiveness using a combination of characterization techniques including neutron scattering.

### PUBLICATIONS

1. Soto-Cantu, E.; Lokitz, B.S.; Hinestrosa, J.P.; Deodhar, C.; Messman, J.M.; Ankner, J.F.; Kilbey II, S.M. "Versatility of Alkyne-Modified Poly(Glycidyl Methacrylate) Layers for Click Reactions," *Langmuir*, **27**, 5986 (2011).
2. Lokitz, B. S.; Messman, J. M., Hinestrosa, J. P.; Alonzo, J.; Verduzco, R.; Brown, R. H.; Osa, M.; Ankner, J. F.; Kilbey II, S. M. "Controlled RAFT Polymerization of 2-Vinyl-4,4-Dimethylazlactone (VDMA): A Facile Route to Bio-Inspired Polymer Surfaces," *Macromolecules*, **42**, 9018 (2009).
3. Messman, J. M.; Lokitz, B. S.; Pickel, J. M.; Kilbey II, S. M., "Highly Tailorable Materials Based on 2-Vinyl-4,4-dimethyl azlactone: (Co)Polymerization, Synthetic Manipulation and Characterization," *Macromolecules*, **42**, 3933 (2009).
4. McCormick, C. L.; Sumerlin, B. S.; Lokitz, B. S.; Stempka, J. E. "RAFT-Synthesized Diblock and Triblock Copolymers: Thermally-Induced Supramolecular Assembly in Aqueous Media," *Soft Matter*, **4**, 1760, (2008).
5. Li, Y; Smith, A. E.; Lokitz, B. S.; McCormick, C. L. "Gold Nanoparticle-Containing Vesicles from a RAFT-Generated, Thermally Responsive Block Copolymer," *Macromolecules*, **40**, 8524, (2007).

6. Lokitz, B. S.; York, A.W.; Stempka, J. E.; Li, Y.; Jarrett, W. L.; McCormick, C. L. "Aqueous RAFT Synthesis of Micelle Forming Amphiphilic Block Copolymers Containing N-Acryloyl Valine. Dual Mode, Temperature/pH Responsiveness and 'Locking' of Micelle Structure Through Interpolyelectrolyte Complexation," *Macromolecules*, **40**, 6473, (2007).
7. Li, Y.; Lokitz, B. S.; McCormick, C. L. "Stimuli-Responsive Block Copolymers by RAFT and Their Micellization Behavior," Chapter 3 In Symposium Series No. 961 Cosmetic Nanotechnology: Polymers and Colloids in Cosmetics; Morgan, S. E., Havelka, K. O.m and Lochhead, R. Y. Eds.; ACS: Washington, DC, (2007).
8. Lokitz, B. S; Convertine, A. J; Ezell, R. G; Heidenreich, A; Li, Y; and McCormick, C. L. "Responsive Nano-Assemblies via Interpolyelectrolyte Complexation of Amphiphilic Block Copolymer Micelles," Lokitz, B. S; Convertine, A. J; Ezell, R. G; Heidenreich, A; Li, Y; and McCormick, C. L. *Macromolecules*, **39**, 8594, (2006).
9. Lokitz, B. S.; Stempka, J. E.; York, A.W.; Li, Y.; Goel, H. K.; Bishop, R. G.; McCormick, C. L. "Chiroptical Properties of Homopolymers and Block Copolymers Synthesized from the Enantiomeric Monomers N-Acryloyl L-Alanine and N-Acryloyl D-Alanine via Aqueous RAFT Polymerization," *Australian Journal of Chemistry*, **59**, 749, (2006).
10. Li, Y; Lokitz, B. S; McCormick, C. L. "Thermally Responsive Vesicles and their Structural 'Locking' via Polyelectrolyte Complex Formation," *Angewandte Chemie International Edition*, **45**, 5792, (2006).
11. Li, Y.; Lokitz, B. S.; Armes, S. P.; McCormick, C. L. "Synthesis of Novel Reversible Shell Cross-Linked Micelles for Controlled Release of Bioactive Agents," *Macromolecules*, **39**, 2726, (2006).
12. Li, Y.; Lokitz, B. S.; McCormick, C. L. "RAFT Synthesis of a Thermally-Responsive ABC Triblock Copolymer Incorporating N-Acryloxysuccinimide for Facile In Situ Formation of Shell Cross-Linked Micelles in Aqueous Media," *Macromolecules*, **39**, 81, (2006).
13. Convertine, A. J.; Lokitz, B. S.; Vasileva, Y.; Myrick, L. J.; Scales, C. W.; Lowe, A. B.; McCormick, C. L. "Direct Synthesis of Thermally-Responsive DMA/NIPAM Diblock and DMA/NIPAM/DMA Triblock Copolymers via Aqueous, Room Temperature RAFT Polymerization," *Macromolecules*, **5**, 1724, (2006).
14. Lokitz, B. S; Lowe, A. B; McCormick, C. L. "Reversible Addition Chain Fragmentation Chain Transfer Polymerization of Water-Soluble, Ion-Containing Monomers," Chapter 6 In Symposium Series No. 937 Polyelectrolytes and Polyzwitterions: Synthesis, Properties, and Applications; Lowe, A. B., and McCormick, C. L., Eds.; ACS: Washington, DC, (2006).
15. Ezell, R. G.; Goreman, I.; Lokitz, B.; Treat, N.; McConaughy, S. D.; McCormick, C. L., "Polyampholyte Terpolymers of Amphoteric, Amino Acid-Based Monomers with Acrylamide and (3-acrylamidopropyl)trimethyl Ammonium Chloride," *Journal of Polymer Science, Part A: Polymer Chemistry*, **44**, 4479 (2006).
16. Ezell, R. G; Goreman, I; Lokitz, B; Ayres, N; McCormick, C. L. "Stimuli-Responsive Ampholytic Terpolymers of N-Acryloyl-Valine, Acrylamide, and (3-Acrylamidopropyl) trimethylammonium chloride: Synthesis, Characterization, and Solution Properties," *Journal of Polymer Science, Part A: Polymer Chemistry*, **44**, 3125 (2006).
17. Convertine, A. J; Lokitz, B. S; Lowe, A. B; Scales, C. W; Myrick, L, J; and McCormick, C. L. "Aqueous Room Temperature RAFT Polymerization of Acrylamide and N,N-Dimethylacrylamide," Convertine, A. J; Lokitz, B. S; Lowe, A. B; Scales, C. W; Myrick, L, J; and McCormick, C. L. *Macromolecular Rapid Communications*, **26**, 791, (2005).