AMALIE L. FRISCHKNECHT
Center for Integrated Nanotechnologies
Sandia National Laboratories
PO Box 5800 MS 1411
Albuquerque, NM 87185-1411

Phone 505-284-8585
Fax 505-844-9781
E-mail alfrisc@sandia.gov

Education

Ph.D. University of California, Santa Barbara, Physics, September 1998
B.A. Pomona College, Physics and Mathematics (summa cum laude), May 1992

Appointments

Principal Member of Technical Staff, Sandia National Laboratories, Oct. 2006 – present
Senior Member of Technical Staff, Sandia National Laboratories, May 2003 – Oct. 2006
Postdoctoral Appointee, Sandia National Laboratories, Oct. 2000 – May 2003
Postdoctoral Fellow, ExxonMobil Research and Engineering Co., Oct. 1998 – Oct. 2000
NSF Fellow, Graduate Student Researcher, Doctoral Scholar Fellow, and UC President's Dissertation Year Fellow, Department of Physics, University of California, Santa Barbara, Sept. 1992-Sept. 1998

Recent Publications

1. L. M. Hall, M. E. Seitz, K. I. Winey, K. L. Oper, K. B. Wagener, M. J. Stevens, and A. L. Frischknecht, *Ionic aggregate structure in ionomer melts: effect of molecular architecture on aggregates and the ionomer peak*, J. Am. Chem. Soc. (in press).
2. A. D. Price, S. M. Hur, G. H. Fredrickson, A. L. Frischknecht, and D. L. Huber, *Exploring lateral microphase separation in mixed polymer brushes by experiment and self consistent field theory simulations*, Macromolecules, doi:10.1021/ma202542u.
3. M. J. A. Hore, A. L. Frischknecht, and R. J. Composto, *Nanorod assemblies in polymer films and their dispersion-dependent optical properties*, ACS Macro Lett, doi:1021/mz200031g.
4. V. Padmanabhan, A. L. Frischknecht, and M. E. Mackay, *Effect of chain stiffness on nanoparticle segregation in polymer/nanoparticle blends near a substrate*, Macromol. Theory Simul., doi:10.1002/mats.201100048.
5. S. M. Hur, A. L. Frischknecht, D. L. Huber, and G. H. Fredrickson, *Self-consistent field simulations of self- and directed-assembly in a mixed polymer brush,* Soft Matter **7**, 8776 (2011).
6. A. L. Frischknecht and A. Yethiraj, *Two- and three-body interactions among nanoparticles in a polymer melt,* J. Chem. Phys. **134**, 174901 (2011).
7. L. M. Hall, M. J. Stevens, and A. L. Frischknecht, *Effect of polymer architecture and ionic aggregation on the scattering peak in model ionomers,* Phys. Rev. Lett., **106**, 127801 (2011).
8. V. Padmanabhan, A. L. Frischknecht, and M. E. Mackay, *Binary fluid with attractions near a planar wall,* Phys. Rev. E **82**, 021507 (2010).
9. A. L. Frischknecht, E. S. McGarrity, and M. E. Mackay, *Expanded chain dimensions in polymer melts with nanoparticle fillers*, J. Chem. Phys. **132**, 204901 (2010).
10. J. Z. Jin, J. Z. Wu, and A. L. Frischknecht, *Modeling microscopic morphology and mechanical properties of block copolymer/nanoparticle composites*, Macromolecules **42**, 7537 (2009).
11. E. S. McGarrity, A. L. Frischknecht, and M. E. Mackay, *Phase behavior of polymer-nanoparticle blends near a substrate*, J. Chem. Phys. **128**, 154904 (2008)

12. A. L. Frischknecht, *Forces between nanorods with end-adsorbed chains in a homopolymer melt*, J. Chem. Phys. **128** 224902 (2008).
13. E. S. McGarrity, A. L. Frischknecht, L. J. D. Frink, and M. E. Mackay, *Surface-induced first order transition in athermal polymer/nanoparticle blends*, Phys. Rev. Lett. **99**, 238302 (2007).
14. L.J.D. Frink and A.L. Frischknecht, *Computational investigations of pore forming peptide assemblies in lipid bilayers,* Phys. Rev. Lett. **97**, 208701 (2006).

Recent Invited Talks

- *Morphologies in Ion-Containing Polymers,* Graduate Research Seminar, Department of Physics, University of Texas at San Antonio, San Antonio, Texas, October 28, 2011.
- *Modeling Polymer Nanocomposites*, CMET Seminar, University of Delaware, Newark, Delaware, May 11, 2011.
- *Molecular Modeling of Nanoparticles in Lipid Bilayers*, INCBN IGERT Seminar, University of New Mexico, Albuquerque, New Mexico, November 15, 2010.
- *Engineering Nanoscale Assemblies in Soft Materials,* LASERION 2010, Schloss Ringberg, Tegernsee, Germany, July 10, 2010.
- *Molecular Modeling of Phase Behavior in Polymer Nanocomposites*, Gordon Research Conference on Polymer Physics, Mt. Holyoke College, Massachusetts, June 29, 2010.
- *Modeling Bulk and Interfacial Phase Behavior in Polymer Nanocomposites*, WE-Heraeus-Seminar on Polymer NanoParticles Interactions: Concepts, Observations, and Applications, Physikzentrum Bad Honnef, Germany, March 28-31, 2010.
- *Molecular Theory Applied to Lipid Bilayers and Lipid-Protein Interactions*, Biomembrane Frontiers, Workshop at the University of California, Davis, California, March 20-21, 2008.

Honors

UC President's Dissertation Year Fellowship (1997-1998)
UCSB Doctoral Scholar Fellowship (1996-1997)
NSF Fellowship (1992-1995)

Professional Service

Editorial Advisory Board, *Macromolecules* and *ACS Macro Letters*, 2012-2014.
Reviewer for: DOE-BES, NSF, Phys Rev E, Macromolecules, ACS Macro Lett, J Phys Chem
Nominating Committee, Division of Polymer Physics of the American Physical Society, March 2007-March 2008; March 2009-March 2010.
Co-chair, PMSE Symposium on "Polymer-Based Nanoparticles and Nanostructures," ACS Annual Meeting, Chicago, Illinois, March 25-30, 2007.

Postdocs and Students Supervised:

Dr. Erin S. McGarrity, postdoc, Jan 2006-Jan 2009
Dr. Venkat Padmanabhan, postdoc, March 2009-March 2011
Dr. Lisa M. Hall, postdoc, Dec 2009-present

Advisors:

James S. Langer and Glenn H. Fredrickson, UC Santa Barbara (Ph.D. advisors); Scott T. Milner, Penn State (postdoc advisor); John G. Curro, University of New Mexico (postdoc advisor).