

Mark Dadmun

Curriculum Vitae

Chemistry Department
University of Tennessee
Knoxville, TN 37996-1600

9905 Cedar Croft Circle
Knoxville, TN 37932

Phone: (865) 974-6582
Fax: (865) 974-3454

(865) 357-2600
Dad@utk.edu

Research Interests

Methods to improve the properties of multicomponent polymeric materials by modification on a molecular level are under examination. More specifically, control of blend and nanocomposite morphology by optimized interfacial modification or selective segregation of a surface-active additive are two areas of prime interest.

Education **Ph.D. – Polymer Science and Engineering**

University of Massachusetts September 1991
Thesis Advisor: Professor M. Muthukumar.

M.S. – Polymer Science and Engineering

University of Massachusetts February 1991

B.S. – Chemical Engineering

University of Massachusetts May, 1987
Graduated Cum Laude: GPA 3.84/4.00

Professional Experience

Professor - Chemistry Dept., University of Tennessee, Aug. 2005-Present
Joint Faculty - Oak Ridge National Laboratory, April 2005 - Present

- Correlating branched polymer structure to surface segregation dynamics and structure by surface techniques such as neutron reflectivity, ATR-FTIR, and SIMS.
- Forming reactive processing techniques to create optimum polymeric interfacial modifiers *in-situ* in multicomponent polymer systems. (Funding: 3M Corporation, National Science Foundation CRC Program)
- Developed guidelines by which optimizing hydrogen bonding between components induces miscibility and alters the ultimate properties of multicomponent polymer systems. (Funding: National Science Foundation)
- Understanding the Chemistry of Fingerprint Development by Superglue Fuming (Funding: Dept. of Justice)

Associate Professor - Chemistry Department
University of Tennessee
August 2000-August 2005

Assistant Professor - Chemistry Department
University of Tennessee
August 1994-July 2000

National Research Council Postdoctoral Associate
National Institute of Standards and Technology
Gaithersburg, Maryland - Polymers Division
September 1991 to August 1994

- Determined the response of lyotropic liquid crystalline polymers to shear flow using *in-situ* neutron scattering.
- Succeeded at inducing miscibility between rigid rod polymers and amorphous polymers with specific interactions.

Research Assistant - Polymer Science and Engineering Department
University of Massachusetts
January 1988 to September 1991

- Completed light and neutron scattering experiments to examine the phenomenon of gelation of rod-like polymers in solution.
- Resolved the response of a liquid crystal to quenched impurities using Monte Carlo and experimental methods.

Visiting Scientist - Kernforschungsanlage
Jülich, Germany
April 1990 to October 1990

Teaching Assistant - Mathematics Department
University of Massachusetts
January 1986 to May 1987

- Undergraduate mathematics courses. Responsibilities included recitations, tutoring students, weekly quizzes, and proctoring exams.

**Honors and
Awards**

Visiting Researcher, CNRS, *Institut Charles Sadron*, Strasbourg 2006
Chancellors Award for Research and Creative Achievement 2005
Junior Research/Creative Achievement Award 2001
National Science Foundation CAREER Award 1997-2002
Chancellor's Award for Professional Promise in
Research and Creative Achievement 1999
Phi Beta Kappa Research and Creative Achievement Award 1998
Science Alliance Research Award 1997-2000
National Research Council Postdoctoral Fellowship 1991-1993
General Electric Graduate Fellow 1987-1988
ACS Annual Scholastic Achievement Award 1987

Professional Societies and Activities

Editorial Advisory Board: *European Polymer Journal*

Member: American Chemical Society, American Physical Society, Materials Research Society, Neutron Scattering Society of America

Professional Society Service:

Secretary, East Tennessee Section of ACS, 1995-1997

Chair Elect, East Tennessee Section of ACS, 2002-2003

Chair, East Tennessee Section of ACS, 2003-2004

Past-Chair, East Tennessee Section of ACS, 2004-2005

Steering Committee for Soft Materials, First American Conference on Neutron Scattering, 2002

Organized Symposium:

Southeast Regional Meeting of the ACS, 1999,

National Meeting of Materials Research Society, Fall 2004.

Reviewer for *Macromolecules*, *Phys. Rev. Lett.*, *J. Poly. Sci.: Poly. Phys.*, *Polymer*, *Polym. Eng. And Sci.*, *J. Rheol.*, *Polymer Composites*, *NCNR Beamtime*, *NSF*, *ACS-PRF*, *Euro. Poly. J.*, *Nanoletters*, *Adv. Polymer Tech.*

External Funding

“Understanding the Polymer/Small Molecule Liquid Crystal Interface”, National Institute of Standards and Technology, 6/97-12/99, \$57,000

“CAREER: A Systematic Study of Miscible and Immiscible Polymer Blends Containing a Liquid Crystalline Polymer”, National Science Foundation CAREER Award, 7/97-1/03, \$325,965 (DMR-9702313)

“Understanding Polymeric Interfaces”, 3M Untenured Award, unrestricted support, 5/97- , \$30,000

“Chain Molecules Under Shear”, Department of Energy, 10/97-10/01, \$705,000 (P.T. Cumming, H.D. Cochran, co-PIs), \$147,000 to MDD

“Understanding the Mechanism of Unique Polymer Blend Compatibilizers”, BF Goodrich, 01/00-05/01, \$45,000

“Nano and Microdroplets of Polymer Blends”, Lockheed Martin Energy Systems, 01/01-01/03, \$30,000

“Light Scattering and Thermodynamics of Polymer/Small Molecule Liquid Crystal Mixtures”, Air Force Research Lab, 06/01-06/02, \$5,000

“Understanding the Mechanism of Cyanoacrylate Polymerization in Latent Fingerprint Fuming”, BWXT, 09/01-12/02, \$20,000

“Tennessee Neutron Sciences Consortium”, University of Tennessee, 06/01 – 06/05, \$150,000 (co-PI)

Mark Dadmun

“Self-Organized Copolymer and Nanoporous Oxide Thin-Film Templates for Controlled Synthesis and Periodic Replication of Nanoscale Materials”, Oak Ridge National Laboratory, 12/01-09/03, \$600,000, (Dadmun co-PI, \$60,000 to MDD)

“Synthesis and Properties of Polymer/Nanotube Composites”, UT-Battelle ORNL, 12/01-09/03, \$55,000

“Acquisition of a Small Angle X-ray Scattering Facility for Materials Research”, National Science Foundation, 08/02-01/4, \$282,101 (Dadmun, co-PI) (DMR-0216816)

“Acquisition of Chromatography Equipment for Polymeric Materials Research and Education”, National Science Foundation, 08/02-01/04, \$214,114, (Dadmun, PI)

“Optimization of Interactions and Dispersions in Multi-component Polymer Systems: Blends and Nanocomposites”, National Science Foundation, 02/03-02/06, \$288,000. (DMR-0241214)

“Confinement Effects in Polymer Nanodroplets”, Petroleum Research Fund, 03/03-08/06, \$80,000 (Dadmun, PI, M. Barnes, ORNL, co-PI),

“Multiply Bound Polymer Chains: Novel Chemistry for Improved Interfacial Properties”, National Science Foundation, 09/03-08/07, \$1,863,000 (CHE-0304807) (Dadmun, PI).

“Modeling of Hydrogen Getters”, Honeywell, 09/03-09/06, \$70,000

“Ordered Diblock Copolymers as Templates for Nanostructure Synthesis”, UT-Battelle ORNL, 09/03-08/05, \$100,000

“The Fact of the Matter Website: Outreach of the Materials Community”, Tennessee Advanced Materials Laboratory, 10/03-06/06, \$60,000

“Materials with Functional Surface Properties:”, Department of Energy, 09/05-01/07, \$83,316

“Cultivating Methods to Enhance the Quality of Aged Fingerprints Developed by Cyanoacrylate Fuming”, National Institutes of Justice, 09/06-08-08, \$126,505

Books, Journals, and Invited articles

1. *Multicomponent Polymer Systems—Phase Behavior, Dynamics and Applications*, M.D. Dadmun, K.I. Winey, C. Leibig, R. Oliver, Eds; Mater. Res. Soc. Symp. Proc. 856E, Materials Research Society, Warrendale, PA (2005)
2. *Guest Editor, Special Issue on Neutron Scattering, Journal of Polymer Science: Polymer Physics, 2004.*
3. “Small Angle Neutron Scattering as a Tool in Polymer Science,” in *Encyclopedia of Polymer Science and Engineering*, J. Kroschwitz, Ed.; Vol. 8; Wiley, New York, 2004
4. *Computational Studies, Nanotechnology, and Solution Thermodynamics of Polymer Systems*, M.D. Dadmun, A. Van Hook, Y. Melnichenko, D. Noid, R. Sumpter, Eds. Kluwer Academic (2000),
5. *Solutions Manual to General, Organic and Biochemistry*, M.D. Dadmun, W.H. Freeman, New York, NY (1999)
6. *Instructors Resource Manual for General, Organic and Biochemistry*, M.D. Dadmun, W.H Freeman, New York, NY (1999)
7. *Flow Induced Structure in Polymers*, A.I. Nakatani and M.D. Dadmun, Eds. ACS Symp. Ser. 597, ACS Books, Washington, D.C. (1995)

Peer-Reviewed Publications

1. J. Alonzo, Z. Huang, M. Liu, J. W. Mays, R. G. Toomey, M. D. Dadmun, S. M. Kilbey “Looped Polymer Brushes Formed by Self Assembly of Poly(2-vinylpyridine)-polystyrene-poly(2-vinylpyridine) Triblock Copolymers at the Solid-Fluid Interface. 1. Kinetics of Preferential Adsorption” *Macromolecules*, In Press
2. S.Y. Kamath, M.D. Dadmun “The Effect of Copolymer Composition on the Dynamics of Random Copolymers in a Homopolymer Matrix”, *J. Chem. Phys.*, **125**, 094902 (2006) [Chosen for joint publication in Virtual Journal of Biological Physics Research, Sept. 15, 2006 www.vjbio.org]
3. N. J. Crawford, M. D. Dadmun, T.J. Bunning, L.V. Natarajan “Time-Resolved Light Scattering of the Phase Separation in PDLC’s Formed by Photo-polymerization Induced Phase Separation” *Polymer*, **47**, 6311-6321 (2006).
4. A. Rasheed, M.D. Dadmun, P.F. Britt, “Polymer-Nanofiber Composites: Enhancing Composite Properties by Nanofiber Oxidation” *J. Poly. Sci.: Poly. Phys.*, in Press
5. R. Mehta, M.D. Dadmun “Small Angle Neutron Scattering Studies on Miscible Blends of Poly (Styrene-ran-Vinyl Phenol) with Liquid Crystalline Polyurethane” *Macromolecules*, In Press.
6. K.S. Mriziq, M.D. Dadmun, H.D. Cochran “Rheology and Birefringence of Fomblin YR at Very High Shear Rates”, *Rheol. Acta*, Submitted
7. S.Y. Kamath, M.J. Arlen, W.A. Hamilton, M.D. Dadmun “The Dynamics of Copolymers in Homopolymer Matrices” *Journ. de Phys.* In Press

8. S. Wargacki, M.D. Dadmun, L. A. Lewis, "Understanding the Polymerization of Cyanoacrylates by Monitoring Chain Growth of Cyanoacrylate Vapor from Surface Bound Initiators", *Chem. Comm*, Submitted.
9. A. Rasheed, M.D. Dadmun and P. F. Britt "The Efficiency of the Oxidation of Carbon Nanofibers with Various Oxidizing Agents", *Carbon*, Submitted
10. S.M. Fontana, M.D. Dadmun, D.H. Lowndes, "Growth of Vertically Aligned Carbon Nanofiber from Nickel Nanodot Arrays Produced Using Diblock Copolymer Thin Film Templates", *Journal of Nanoscience and Nanotechnology*, In Press.
11. S.M. Fontana, M.D. Dadmun, D.H. Lowndes, "Long Range Order of Cylinders in Diblock Copolymer Thin Films Using Graphoepitaxy." *Soft Matter*, Submitted
12. D. P. Kumar, M.D. Dadmun, "Optimization of Interfacial Interactions to Achieve Nanoscale Dispersion in Polymer/Clay Nanocomposites", *Macromolecules*, Submitted
13. A. Rasheed, M.D. Dadmun, P. F. Britt, D. Geohegan, I. Ivanov, "Improving the Dispersion of Single Walled Carbon Nanotube in a Polymer Matrix using Specific Interactions", *Chem. Mat*, **18**, 3513-3522 (2006).
14. A. Rasheed, M.D. Dadmun, H.-G. Chae, S. Kumar, "Polymer Nanotube Nanocomposites: Correlating Intermolecular Interaction to Ultimate Properties" *Polymer*, **47**, 4734-4741 (2006).
15. N Crawford, M.D. Dadmun, "The Impact of Polymer Chain length on the Thermodynamics of Acrylate/Cyanobiphenyl Mixtures" *Liquid Crystals*, **33**, 195-203 (2006).
16. G. D. Smith, Y. Zhang, F. Yin, D. Bedrov, Z. Huang, M.D. Dadmun "A Monte Carlo Simulation Study of the Kinetics of Irreversible Adsorption of Telechelic Polymers onto a Solid Substrate", *Langmuir*, **22**, 664-675 (2006).
17. H. Ji, W.K. Nonidez, R.C. Advincula, G.D. Smith, S.M. Kilbey, M.D. Dadmun, J.W. Mays, "MALDI-TOF MS Characterization of Carboxyl-End Capped Polystyrenes Synthesized Using Anionic Polymerization", *Macromolecules*, **38**, 9950-9956 (2005).
18. E. Eastwood, S. Viswanathan, C.P. O'Brien, D. Kumar, M.D. Dadmun, "Methods to Improve the Properties of Polymer Mixtures: Optimizing Intermolecular Interactions and Compatibilization" *Polymer*, **46**, 3957 (2005). [Feature Article].
19. S.Y. Kamath, M.D. Dadmun, "The Effect of Chain Architecture on the Dynamics of Copolymers in a Homopolymer Matrix: Lattice Monte Carlo Simulations using the Bond-Fluctuation Model" *Macromolecular Theory and Simulation*, **14**, 519-527 (2005)
20. G.S. Smith, M.D. Dadmun, "Editorial: Recent Developments in Polymer Science as Determined by Neutron Scattering," *J. Poly. Sci.: Poly. Phys.* **42**, 1 (2004)
21. P. Kumar, A. Mehta, M. D. Dadmun, S. Mahurin, S. Dai, B. G. Sumpter, and M. D. Barnes, "Role of solution-phase morphologies on the luminescence of single semiconducting polymer chains under 3-D confinement," *Macromolecules*, **37**, 6132-6140 (2004).
22. M.J. Arlen, M.D. Dadmun, W.A. Hamilton, "Using Neutron Reflectivity to Determine the Dynamic Properties of a Copolymer in a Homopolymer Matrix.", *J. Poly. Sci.: Poly. Phys.*, **42**, 3235-3247 (2004).

23. K.S. Mrziq, H. J. Dai, M.D. Dadmun, G.E. Jellison, H.D. Cochran, "A High Shear Rate Optical Rheometer", *Rev. Sci. Instr.* **75**, 2171-2176 (2004).
24. C. O'Brien, J.K. Rice, M.D. Dadmun, "Reactive Processing with Difunctional Oligomers to Increase Interfacial Adhesion in Polymer Blends", *Euro. Polym. Journ.* **40**, 115-1523 (2004).
25. S. Viswanathan, M.D. Dadmun, "Miscible Blends Containing a Liquid Crystalline Polymer via Optimized Hydrogen Bonding: Correlation to Theory", *J. Poly. Sci.: Poly. Phys.*, **42**, 1010-1022 (2004).
26. M.J. Arlen, M.D. Dadmun, "The Reinforcement of Polystyrene and Poly(Methyl Methacrylate) Interfaces using Alternating Copolymers", *Polymer* **44**, 6883-6889 (2003).
27. A. Mehta, P. Kumar, M. D. Dadmun, J. Zheng, R. M. Dickson, T. Thundat, B. G. Sumpter, and M. D. Barnes "Narrow-Bandwidth Spontaneous Luminescence from Oriented Semiconducting Polymer Nanostructures", *J. Phys. Chem. B*, **107**, 6252-6257 (2003) (Cover Article).
28. A. Mehta, P. Kumar, M. D. Dadmun, J. Zheng, R. M. Dickson, T. Thundat, B. G. Sumpter, and M. D. Barnes, "Oriented Nanostructures from Single-molecules of a Semiconducting Polymer: Polarization Evidence for Highly Aligned Intramolecular Geometries", *NanoLetters*, **3**, 603-607 (2003).
29. S. Viswanathan, M.D. Dadmun, "Optimizing Hydrogen Bonding in Creating Miscible Liquid Crystalline Polymer Blends by Structural Modification of the Blend Components", *Macromolecules*, **36**, 3196-3205 (2003).
30. E. Eastwood, M.D. Dadmun, "Compatibilization of Poly(vinyl chloride) and Polyolefin Elastomer Blends with Multiblock/Blocky Chlorinated Polyethylenes", *Polymer*, **43** 6707-6717 (2002)
31. G. Lynn, M.D. Dadmun, E. K. Lin, W. E. Wallace, W. Wu "Neutron Reflectivity Studies On a Small Molecule Liquid Crystal/Polymer Interface", *Liquid Crystals*, **29**, 551-557 (2002).
32. E. Eastwood, M.D. Dadmun, "Multi-Block Copolymers in the Compatibilization of Polystyrene and Poly(Methyl Methacrylate) Blends: Role of Polymer Architecture", *Macromolecules*, **35**, 5069-5077 (2002).
33. S. Viswanathan, M.D. Dadmun, "Guidelines to Creating a True Molecular Composite: Inducing Miscibility in Blends by Optimizing Intermolecular Hydrogen Bonding", *Macromolecules*, **35**, 5049-5060 (2002).
34. M.D. Dadmun, "Quantifying and Controlling the Composition and 'Randomness' Distributions of Random Copolymers", *Macromolecular Theory and Simulations*, **10**, 795-801 (2001).
35. S. Viswanathan, M.D. Dadmun, "The Formation of a True Molecular Composite using Optimal Hydrogen Bonding", *Macromolecular Rapid Communications*, **22**, 779-782 (2001).
36. B. Radmard, M.D. Dadmun, "Effect of Transesterification on the Morphology and Mechanical Properties of a Blend Containing a Liquid Crystalline Polymer", *J. Applied. Poly. Sci.*, **80**, 2583-2592 (2001).
37. E. Eastwood, M.D. Dadmun, "A Method to Synthesize Multiblock Copolymers of Methyl Methacrylate and Styrene Regardless of Monomer Sequence", *Macromolecules*, **34**, 740 (2001).

38. B. Radmard, M.D. Dadmun, "The Accessibility of Functional Groups to Intermolecular Hydrogen Bonding in Polymer Blends Containing a Liquid Crystalline Polymer", *Polymer* **42**, 1592 (2000).
39. M.D. Dadmun, "The Importance of a Broad Composition Distribution in Polymeric Interfacial Modifiers", *Macromolecules* **33**, 9122 (2000).
40. M.D. Dadmun, "The Compatibilization of Polymer Blends with Linear Copolymers: Comparison Between Simulation and Experiment", in *Computational Studies, Nanotechnology, and Solution Thermodynamics of Polymer Systems*, Kluwer Academic: New York (2000); p. 69.
41. S. Chidambaram, M.D. Dadmun, W.A. Hamilton, P.D. Butler, "What is a Model Liquid Crystalline Polymer Solution?: Solvent Effects on the Flow of LCP Solutions", in *Scattering From Polymers*, ACS Symp. Ser. 739, ACS Books, (2000)
42. D. Waldow, M.D. Dadmun, "The Effect of Added Copolymer on the Critical Properties of Polymer Mixtures", *Phys. Rev. E* **60**, 4545 (1999).
43. S. Chidambaram, M.D. Dadmun, "A Monte Carlo Study of the Effect of Polymer Rigidity on Adsorption Behavior", *Computational and Theoretical Polymer Science* **9**, 47 (1999).
44. M.D. Dadmun, S. Clingman, C.K. Ober, A.I. Nakatani, "The Flow Induced Structure in a Thermotropic Liquid Crystalline Polymer as Studied by SANS", *J. Poly. Sci.: Poly. Phys.* **36**, 3017 (1998).
45. W. Chen; M. Dadmun, G. Zhang, A. Boller, B. Wunderlich, "Isotropization of Nematic Liquid Crystals by TMDSC", *Therm. Acta* **324**, 87 (1998).
46. M.D. Dadmun, Review of "Handbook of Liquid Crystal Research", *J. Chem. Ed.* **75**, 1220 (1998).
47. J. Szydowski, L.P. Rebelo, H. Wilczura, M.D. Dadmun, Y. Melnichenko, G.D. Wignall, W.A. Van Hook, "Comparison of SANS and DLS Hydrodynamic Correlation Lengths for a Polystyrene/methyl-cyclohexane Solution in the Vicinity of Temperature- or Pressure-Induced Critical Demixing", *Physica B* **241-243**, 1035 (1998).
48. M.D. Dadmun, "The Role of Copolymer Architecture on the Interfacial Structure of a Ternary Polymer Blend.", *Mat. Res. Soc. Symp. Ser.* **461**, 123 (1997).
49. K. Hongladarom, V.M. Ugaz, D.K. Cinader, W.R. Burghardt, J.P. Quintana, B.S. Hsiao, M.D. Dadmun, W.A. Hamilton, and P.D. Butler, "Birefringence, X-Ray Scattering, and Neutron Scattering Measurements of Molecular Orientation in Sheared Liquid Crystal Polymer Solutions", *Macromolecules* **29**, 5346 (1996).
50. M.D. Dadmun, "The Effect of Copolymer Architecture on the Interfacial Structure and Miscibility of a Ternary Polymer Blend Containing a Copolymer and Two Homopolymers.", *Macromolecules* **29**, 3868 (1996).
51. M.D. Dadmun, M. Muthukumar, R. Hempelmann, D. Schwahn, and T. Springer "Proton Motion of Poly (γ -benzyl L-glutamate) in Benzyl Alcohol During Gelation as Measured by Quasi-elastic Neutron Scattering", *Journ. Pol. Sci.: Pol. Phys.* **34**, 649 (1996).
52. M.D. Dadmun, M. Muthukumar, D. Schwahn, and T. Springer "Small Angle Neutron Scattering of Poly (γ -benzyl L-glutamate) in Deuterated Benzyl Alcohol", *Macromolecules* **29**, 207 (1996).

53. M.D. Dadmun, "Shear-Induced Orientation of Liquid Crystalline Hydroxypropylcellulose in D2O as Measured by Neutron Scattering" in *Flow Induced Structure in Polymers*, ACS Symp. Ser. 597, ACS Books, (1995).
54. M.D. Dadmun, "Confinement Effects on the Phase Transitions and Orientation of a Liquid Crystal", *Mat. Res. Soc. Symp. Proc.* **371**, 477 (1995).
55. M.D. Dadmun and C.C. Han, "A Neutron Scattering Study of the Orientation of a Liquid Crystalline Polymer by Shear Flow", *Macromolecules* **27**, 7522 (1994).
56. M.D. Dadmun and M. Muthukumar, "The Effect of an Adsorbing Surface on the Phase Behavior of a Semiflexible Liquid Crystal.", *J. Chem. Phys.* **101**, 10038 (1994).
57. M.D. Dadmun and M. Muthukumar, "The Nematic to Isotropic Transition of a Liquid Crystal in Porous Media", *J. Chem. Phys.* **98**, 4850 (1993).
58. M.D. Dadmun and C.C. Han, "The Phase Behavior of a Hydrogen Bonding Molecular Composite", *Mat. Res. Soc. Symp. Proc.* **305**, 171 (1993).
59. M.D. Dadmun and M. Muthukumar, "The Response of Semiflexible Liquid Crystals to Quenched Random Disorder", *J. Chem. Phys.* **97**, 587 (1992).
60. M.D. Dadmun, "In-situ Characterization of Liquid Crystalline Polymer Flow Using Neutron Scattering", *ASM Proceedings*, **10**, 369 (1994).
61. M.D. Dadmun, "Phase Transitions of Lyotropic Liquid Crystalline Polymers: Effect of Fluctuation and Disorder", Ph.D. Dissertation, University of Massachusetts, 1991.

Invited Presentations

1. "Designing Better Plastics: Understanding and Improving Polymer Mixtures", Harding University, Searcy, AK, Oct. 2006.
2. "Improved Dispersion in Polymer Nanocomposites by Incorporating Specific interactions", Southwest Regional Meeting of the American Chemical Society, Houston, TX, Oct 2006.
3. "Designing Better Plastics: Understanding and Improving Polymer Mixtures", University of Central Florida, Orlando, FL, Oct. 2006.
4. "Improving and Controlling Interfaces in Multi-component Polymer Systems", Annual Meeting of the International Society for Polymer Analysis and Characterization, Oak Ridge, TN, June 2006.
5. "Impact of Polymer Architecture on the Properties of Multi-component Polymer Systems", University of Athens, Athens, Greece, May 2006.
6. "Dynamics of Copolymers in Homopolymer Matrices", 3rd International Workshop on Dynamics in Confinement, Grenoble, France, March 2006
7. "Dynamics and Dispersion in Multi-component Polymer Systems: Rational Design of Materials with Targeted Properties", Institut Charles Sadron, Strasbourg, France, Jan 2006

8. "Improving the Dispersion of Polymer Nanocomposites for Electro-Responsive Materials", Materials Research Society Meeting, Boston, MA, Nov 2005.
9. "Controlling Dispersion in Multi-Component Polymer Systems: Rational Design of Materials with Targeted Properties", Polymer Science Program, Massachusetts Institute of Technology, Nov 2005
10. "Controlling Dispersion in Multi-component Polymer Systems: Rational Design of Materials with Targeted Properties", Polymer, Fiber, and Textile Engineering, Georgia Institute of Technology, Atlanta, GA, Oct., 2005
11. "Controlling Dispersion in Multi-component Polymer Systems: Rational Design of Materials with Targeted Properties", Marshall Laboratory, DuPont, Philadelphia, PA, Aug. 2005
12. "Understanding the Mechanism of Cyanoacrylate Polymerization in the Fuming of Latent Prints", Meeting of the International Association of Identification, Dallas, TX, Aug. 2005.
13. "Controlling Dispersion in Multi-component Polymer Systems: Rational Design of Materials with Targeted Properties", Rohm & Haas, Spring Hill, PA, Aug. 2005
14. "Multi-Component Polymer Systems: New Materials with Targeted Properties", Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, May 2005.
15. "Dynamics and Dispersion in Multi-component Polymer Systems: Rational Design of Materials with Targeted Properties", Institute of Soldier Nanotechnologies, Massachusetts Institute of Technology, Cambridge, MA November, 2004.
16. "Dynamic Behavior of Branched Copolymers ", ACS Branched Polymers for Performance Workshop, Williamsburg, VA, May 2004.
17. "Designing Better Plastics: Understanding and Improving Polymer Mixtures", Chemistry Department, Smith College, Northampton, MA, April 2004.
18. "The Dynamics and Thermodynamics of Multicomponent Polymer Systems", Chemistry Department, University of Connecticut, Storrs, CT April, 2004.
19. "The Dynamics and Thermodynamics of Multicomponent Polymer Systems", Chemistry Department, Virginia Tech, Blacksburg, VA, Nov 2003.
20. "The Dynamics and Thermodynamics of Multicomponent Polymer Systems", Materials Science and Engineering Department, University of Tennessee, Knoxville, TN, Nov 2003
21. "Rational Design of Materials with Targeted Properties: Multi-Component Polymer Systems", 3M Corporate Center, St. Paul, MN, Aug. 2003
22. "Rational Design of Materials with Targeted Properties: Multi-Component Polymer Systems", Foster-Miller, Waltham, MA, Aug. 2002.
23. "How Theory can Help Us to Understand Neutron Scattering Data and Vice Versa", Second Workshop for the Center for Nanophase Materials Science, Oak Ridge, TN, June 2002.

24. "Using Neutron Scattering to Examine Polymer Structure and Dynamics", ASM 2002 Educational Forum, Oak Ridge, TN, April 2002
25. "Creation of Self-Healing Functional Materials by Nanoengineering of Surfaces", UT-Batelle Nanotechnology Forum, Atlanta, GA, March 2002.
26. "Polymer Structure and Dynamics on the Nanoscale", 57th Annual Meeting of the ORAU Council of Sponsoring Institutions, Oak Ridge, TN, February 2002.
27. "Rational Design of Materials with Targeted Properties: Multi-Component Polymer Systems", Teledyne Brown Engineering, Huntsville, AL, February 2002.
28. "Interfacial Modification by Copolymer: Importance of Copolymer Microstructure", IUPAC International Symposium on Ionic Polymerizations, Crete, Greece, October, 2001
29. "Improved Dispersion in Multicomponent Polymer Systems", University of Genoa, Genoa, Italy, October, 2001
30. "Improved Dispersion in Multicomponent Polymer Systems", Institut Charles Sadron, Strasbourg, France, October, 2001
31. "Improved Dispersion in Multicomponent Polymer Systems", Army Research Laboratory, Aberdeen, MD, July 2001
32. "Improving the Properties of Multi-component Polymer Systems with Additives", Additives Technology Conference, Clemson, SC, October 2001.
33. "Reactive Processing with Difunctional Oligomers to Increase Interfacial Adhesion in Polymer Blends", The National Meeting of the American Chemical Society, San Diego, April. 2001: See also *Polymer Preprints*, 42(1), 294 (2001).
34. "The Microscopic Chef: Recipes for Better Plastics" North Carolina A & T, Greensboro, NC, Nov. 2000.
35. "The Microscopic Chef: Recipes for Better Plastics" Student Affiliates of the American Chemical Society, Knoxville, TN, Nov. 2000.
36. "Characterization of Unique Copolymers as Compatibilizers", BF Goodrich Research Center, Brecksville, OH, Aug. 2000
37. "Improving Polymer Blends: Interfacial Modifiers and Optimizing Intermolecular Interactions" Chemical and Analytical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, June, 2000.
38. "Aspects of Interfacial Modification: Improving Polymer Mixtures", 20th Anniversary of CUMIRP, University of Massachusetts, Amherst, MA, May, 2000.
39. "Improving Polymer Blends: Interfacial Modifiers and Optimizing Intermolecular Interactions", 3M Center, St. Paul, MN, April, 2000

40. "Improving Polymer Blends: Interfacial Modifiers and Optimizing Intermolecular Interaction", Hampton, University, Hampton, VA, April, 2000.
41. "The Microscopic Chef: Recipes for New Plastics" The Science Forum, Knoxville, TN, Feb. 2000.
42. "Neutron Scattering at the University of Tennessee", UT-Battelle Core Universities' Workshop, North Carolina State University, Raleigh, NC, Dec. 1999.
43. "Improving the Properties of Polymer Mixtures: The Importance of Interfaces", Chemistry Dept., The University of Tennessee of Tennessee, Knoxville, Dec. 1999.
44. "Improving the Properties of Polymer Mixtures: The Importance of Interfaces", Physics Dept., The University of Tennessee of Tennessee, Knoxville, Dec. 1999.
45. "Polymeric Surfactants: Multi-Block Copolymers as Compatibilizers in Polymer Blends", BF Goodrich Research Center, Brecksville, OH, Nov. 1999.
46. "Monte Carlo Simulation of the Compatibilization of Polymer Blends with Linear Copolymers", Southeast Regional Meeting of the American Chemical Society, Knoxville, TN, Oct. 1999.
47. "The Synthesis and Use of MultiBlock Copolymers as Interfacial Modifiers", The National Meeting of the American Chemical Society, New Orleans, Aug. 1999: See also *Polymer Preprints*, 40(2), 996 (1999).
48. "Improving the Properties of Polymer Mixtures: Importance of Interfaces", The University of Alabama at Birmingham, Birmingham, AL, May 1999.
49. "Improving the Properties of Polymer Mixtures: Importance of Interfaces", Eastman Chemical Company, Kingsport, TN, April 1999.
50. "Liquid Crystal/Polymer Interactions: Effects on Phase Behavior, Alignment, and Optical Properties." Wright-Patterson Air Force Base, Dayton, OH, December, 1998.
51. "Understanding and Controlling Polymer Interfaces", Highland Chemistry Series, Blacksburg, VA, April 1998.
52. "Modification of Polymer Interfaces in Blends", Macromolecular Seminar Series, Louisiana State University, Baton Rouge, LA, March 1998.
53. "Improvement of Polymer Properties by Microscopic Manipulation", Centre College Seminar Series, Danville, KY, October, 1997
54. "The Role of Copolymer Sequence Distribution on the Interfacial Structure of Modified Polymer Blends", Southeast Regional Meeting of the American Chemical Society, Greenville, SC, November, 1996.
55. "The Role of Specific Interactions on the Interfacial Structure of Polymer Blends and Liquid Crystals", 3M Center, St. Paul, MN, May, 1996.

56. “Neutron Scattering Studies of Liquid Crystalline Polymers Under Shear Flow”, Dedication of the Silvio O. Conte National Center for Polymer Research, University of Massachusetts, Amherst, MA, April, 1996.
57. “Understanding Polymer Physics: Studies of Polymers Under Shear Flow and in Blends”, PICChS Program, Spelman College, October, 1995.
58. “The Orientation of Liquid Crystalline Polymers: Correlation of Rheology and Neutron Scattering”, National Meeting of the American Physical Society, San Jose, CA, March, 1995.
59. “In-situ Characterization of Liquid Crystalline Polymer Flow Using Neutron Scattering”, Advanced Composites Conference, Detroit, MI, November, 1994.
60. “Confinement and Surface Effects on the Physics of a Liquid Crystal”, AT & T Bell Labs, Murray Hill, NJ, July 1994.
61. “Liquid Crystalline Polymers as Advanced Materials Studied in Blends and under Shear Flow”, Spring Colloquia, The Polytechnic University, NY, Feb. 1994.
62. “Liquid Crystalline Polymers as Advanced Materials: I. Phase Behavior in Blends II. Structure Under Shear”, Virginia Polytechnic Institute Seminar Series, Virginia Polytechnic Institute and State University, Sept. 1993.

Presentations and Non-Refereed Publications [MDD presenter, unless otherwise noted]

1. “Polymer Nanotube Nanocomposites: A Recipe to Control Properties”, National Meeting of the American Chemical Society, Washington, D.C., August 2005 (Asif Rasheed, Graduate Student, Presenter)
2. “Density profiles of “looped” polymer brushes at the liquid-solid interfaces by neutron reflectivity measurements” National Meeting of the American Chemical Society, Atlanta, GA, March 2006 (Zhenyu Huang, Postdoctoral Associate, Presenter)
3. “Self Assembly of Poly (2-vinylpyridine)-polystyrene- poly (2-vinylpyridine) triblock copolymers at the solid-fluid interface” National Meeting of the American Chemical Society, Atlanta, GA, March 2006 (Zhenyu Huang, Postdoctoral Associate, Presenter)
4. “Polymer-nanotube Composites: Controlling Properties by Controlling Interaction” National Meeting of the American Chemical Society, Atlanta, GA, March 2006 (Asif Rasheed, Graduate Student, Presenter)
5. “Multiple Loop Formation by Polystyrene Telechelics on SAM of 11-mercaptoundecanoic acid” National Meeting of the American Chemical Society, Atlanta, GA, March 2006 (Rujul Mehta, Postdoctoral Associate, Presenter)
6. “Effect of Backbone Type and Branch Length on the Dynamics of Branched Copolymers in a Homopolymer Matrix” National Meeting of the American Chemical Society, Atlanta, GA, March 2006 (Sudesh Kamath, Postdoctoral Associate, Presenter)

7. “Enhanced Dispersion in Polymer Nanocomposites by Optimized Hydrogen Bonding”, National Meeting of the American Physical Society, Baltimore, MD, March 2006. (Asif Rasheed, Graduate Student, Presenter)
8. “The Kinetics of the Reaction of Telechelics at a Soft Polymeric Interface by Neutron Reflectivity” National Meeting of the American Physical Society, Baltimore, MD, March 2006.
9. “The Impact of Sample Preparation on Polymer Carbon Nanotube Nanocomposites” National Meeting of the American Physical Society, Baltimore, MD, March 2006. (Chang-Uk Lee, Graduate Student, Presenter)
10. “The Effect of Copolymer Composition on the Dynamics of Random Copolymers in a Homopolymer Matrix.” National Meeting of the American Physical Society, Baltimore, MD, March 2006. (Sudesh Kamath, Postdoctoral Associate, Presenter)
11. “Enhanced Dispersion in Polymer Nanocomposites by Optimized Hydrogen Bonding”, National Meeting of the American Physical Society, Baltimore, MD, March 2006. (Asif Rasheed, Graduate Student, Presenter)
12. “Density profiles of “looped” polymer brushes at the solid-liquid interface”, HFIR/SNS Users Meeting, Oak Ridge, TN, October 2005 (Zhenyu Huang, Postdoctoral Associate, Presenter)
13. “Monitoring the reaction of telechelics at a soft polymeric interface by neutron reflectivity”, National Meeting of the American Chemical Society, Washington, D.C., August, 2005 (J. Kevin Rice, Graduate Student, Presenter)
14. “Small Angle Neutron Scattering Studies of Blends Containing a Liquid Crystalline Polymer” National Meeting of the American Chemical Society, Washington, D.C., August, 2005 (Rujul Mehta, Postdoctoral Associate, Presenter)
15. “Polymer Nanotube Nanocomposites: A Recipe to Control Properties”, National Meeting of the American Chemical Society, Washington, D.C., August 2005 (Asif Rasheed, Graduate Student, Presenter)
16. “Dynamics of Multi-component Polymer Systems” X-rays and Neutrons: Essential Tools for Nanoscience Research; National Nanotechnology Initiative Conference, Washington, D.C. June 2005 (Sudesh Kamath, Postdoctoral Associate, Presenter)
17. “Effect of Clay Surfactant on the Ability of Intermolecular Interactions to Improve the Dispersion of Polymer/Clay Nanocomposites” 6th National Graduate Research Polymer Conference, Amherst, MA, June 2005 (Deepali Kumer, Graduate Student, presenter)
18. “Long-Range Order in Cylindrical Block Copolymer Thin Films using Graphoepitaxy”, National Meeting of the American Physical Society, Los Angeles, CA, March 2005
19. “Controlling the Dispersion and Properties of Single-Walled Carbon Nanotube-Polymer Nanocomposite”, National Meeting of the American Physical Society, Los Angeles, CA, March 2005 (Asif Rasheed, graduate Student, Presenter)

20. "Formation and Properties of Molecular Loops at Polymeric Interfaces", National Meeting of the American Physical Society, Los Angeles, CA, March 2005 (J. Kevin Rice, graduate Student, Presenter)
21. "Small Angle Neutron Scattering Studies on Blends of Poly (Styrene-ran-Vinyl Phenol) with Liquid Crystalline Polyurethane", National Meeting of the American Physical Society, Los Angeles, CA, March 2005 (Rujul Mehta, Postdoctoral Associate, Presenter)
22. "Grafting and Loop Formation of Telechelic Polymers at Interfaces Monitored by Fluorescence Labeling", National Meeting of the American Physical Society, Los Angeles, CA, March 2005 (Zhenyu Huang, Postdoctoral Associate, Presenter)
23. "Reactive modification of polymer interfaces: Formation of loops", National Meeting of the American Chemical Society, San Diego, CA, March 2005 See also *Polymer Preprints*, XX, 165 (2005).
24. "Using Neutron Reflectivity to Monitor the Dynamics of Copolymers: Effect of Sequence Distribution", National Meeting of the American Chemical Society, San Diego, CA, March 2005 See also *Polymer Preprints*, XX, 165 (2005).
25. "Investigating the chemistry and adsorption of multiply bound polymer chains (MBPC)", National Meeting of the American Chemical Society, San Diego, CA, March 2005 (Prof Rigoberto Advincula, Collaborator, Presenter) See also *Polymer Preprints*, XX, 165 (2005).
26. "Cyanoacrylate fuming from model fingerprint systems", National Meeting of the American Chemical Society, San Diego, CA, March 2005 (Steve Wargacki, Graduate Student, Presenter) See also *Polymer Preprints*, XX, 165 (2005).
27. "Multiple loop formation by epoxy-terminated polystyrene telechelics on self-assembled monolayers of 11-mercaptopundecanoic acid over gold", National Meeting of the American Chemical Society, San Diego, CA, March 2005 (Rujul Mehta, Postdoctoral Associate, Presenter) See also *Polymer Preprints*, XX, 165 (2005).
28. "Effect of copolymer sequence distribution on the dynamics of copolymers in a homopolymer matrix", National Meeting of the American Chemical Society, San Diego, CA, March 2005 (Sudesh Kamath, Postdoctoral Associate, Presenter) See also *Polymer Preprints*, XX, 165 (2005).
29. "Adsorption of P2VP-dPS-P2VP triblock copolymers onto reactive monolayers: Towards multiply bound polymer chains", National Meeting of the American Chemical Society, San Diego, CA, March 2005 (Jin Young Park, Collaborating Graduate Student, Presenter) See also *Polymer Preprints*. XX, 165 (2005).
30. "Long Range Order in Cylindrical Diblock Copolymer Thin Films using Graphoepitaxy", National Meeting of the Materials Research Society Meeting, Boston, MA Nov. 2004 (Scott Fontana, Graduate Student, Presenter)

31. “The Reaction of Telechelic Polymers At Multicomponent Interfaces: A Molecular Loop Study”, National Meeting of the Materials Research Society Meeting, Boston, MA Nov. 2004 (Kevin Rice, Graduate Student, Presenter)
32. “Enhanced Properties of Single-Walled Carbon Nanotube Nanocomposites by Hydrogen Bonding”, National Meeting of the Materials Research Society Meeting, Boston, MA Nov. 2004 (Asif Rasheed, Graduate Student, Presenter)
33. “The Effect of Chain Sequence Distribution on the Dynamics of Copolymers in a Homopolymer Matrix”, National Meeting of the Materials Research Society Meeting, Boston, MA Nov. 2004 (Sudesh Kamath, Postdoctoral Fellow, Presenter)
34. “Understanding the Role of Intermolecular Interactions in the Dispersion of Polymer Nanocomposites” National Meeting of the Materials Research Society Meeting, Boston, MA Nov. 2004
35. “Improving Dispersions of Polymer Nanocomposites: Intermolecular Interactions”, Polymer Physics Gordon Conference, New London, CT, August, 2004
36. “Correlation of Interfacial Structure to the Strength of Compatibilized Polymeric Interfaces”, American Conference on Neutron scattering, College Park, MD June 2004.
37. “Effect of Solvent on the Collapse and Orientation of Conjugated Polymer Chains”, National Meeting of the American Chemical Society, Anaheim, CA, March 2004 (Pradeep Kumar, graduate Student, Presenter) See also *Polymer Preprints*, 45, 165 (2004).
38. “Optimization of Interfacial Interactions to Achieve Nanoscale Dispersion of Clay in Polymer/Clay Nanocomposites” National Meeting of the American Chemical Society, Anaheim, CA, March 2004 (Deepali Kumar, graduate Student, Presenter) See also *Polymer Preprints*, 45, 740 (2004)
39. “Long range order of nickel nano-dots templated by self-assembled diblock copolymer thin films using graphoepitaxy” National Meeting of the American Chemical Society, Anaheim, CA, March 2004 (Scott Fontana, graduate Student, Presenter) See also *Proc. Div. Polym. Mater. Sci. Eng.*, 90, 258 (2004)
40. “Interfacial Modification in Multicomponent Polymer Systems: Formation of Molecular Loops” National Meeting of the American Chemical Society, Anaheim, CA, March 2004 (Kevin Rice, graduate Student, Presenter) See also *Proc. Div. Polym. Mater. Sci. Eng.*, 90, 710 (2004).
41. “Optimization of Hydrogen Bonding in a Polymer Carbon Nanotube Nanocomposite”, National Meeting of the American Physical Society, Montreal, March 2004 (Asif Rasheed, graduate Student, Presenter)
42. “Determining the Mechanism of the Polymerization of Ethylcyanoacrylate for Use in Latent Fingerprinting” National Meeting of the American Physical Society, Montreal, March 2004 (Steve Wargacki, graduate Student, Presenter),

43. "The Importance of Sequence Distribution on the Dynamics of a Copolymer" National Meeting of the American Physical Society, Montreal, March 2004
44. "Effect of Crosslinking Agent Functionality and Curing Beam Intensity on the Phase Separation Kinetics of a Photopolymerizing PDLC" National Meeting of the American Physical Society, Montreal, March 2004 (Nathan Crawford, graduate Student, Presenter)
45. "Neutron Scattering Studies of Blends Containing a Liquid Crystalline Polymer" National Meeting of the American Physical Society, Montreal, March 2004
46. "The Effect of Chain Architecture on the Dynamics of Copolymers in a Homopolymer Matrix" National Meeting of the American Physical Society, Montreal, March 2004 (Sudesh Kamath, Postdoctoral fellow, Presenter)
47. "Long Range Order of Nickel Nano-Dots Templated by Self-Assembled Diblock Copolymer Thin Films using Graphoepitaxy" Chemical Physics Workshop, Knoxville, TN, February 2004. (Scott Fontana, graduate Student, Presenter)
48. "Oriented Semiconducting Polymer Nanorods: New Insights Into Luminescence from Conjugated Polymer Nanostructures" Chemical Physics Workshop, Knoxville, TN, February 2004. (Pradeep Kumar, Graduate Student, Presenter)
49. "Multiply-bound Polymer Chains: Novel Chemistry for Improved Interfacial Properties" Collaborative Research in Chemistry Conference, Washington, D.C., November 2003.
50. "Ink-jet printed Single Molecules of MEH-PPV and CN-PPV and Their Chain Conformation" Southeast Regional Meeting of the American Chemical Society, Atlanta, GA, November, 2003 (Pradeep Kumar, Graduate Student, Presenter)
51. "Optimization of Interfacial Interactions to Achieve Nanoscale Dispersion of Clay in Polymer/clay Nanocomposites" Southeast Regional Meeting of the American Chemical Society, Atlanta, GA, November, 2003. (Deepali Kumar, Graduate Student, Presenter)
52. "Rheology and Birefringence at High Shear Rates" National Meeting of the Society fo Rheology, Pittsburgh, PA, October, 2003.
53. "Improving the Dispersion in Polymer Nanocomposites: Hydrogen Bonding" Polymers for Advanced Technologies Conference, Ft. Lauderdale, FL, Sept. 2003.
54. "Interfacial Modification In Multicomponent Polymer Systems: Formation of Molecular Loops" National Meeting of the American Chemical Society, New York, New York, Sept. 2003 (J. Kevin Rice, Graduate Student, Presenter) See also *Proc. Div. Polym. Mater. Sci. Eng.*, 89, 304 (2003).
55. "Optimizing Interfacial Modification in Multi-component Polymer Systems: the Importance of Loops" National Meeting of the American Chemical Society, New York, New York, Sept. 2003 See also *Proc. Div. Polym. Mater. Sci. Eng.*, 89, 113 (2003).

56. "Functionalization of Carbon Nanotube and their Dispersion in Polymer Nanocomposites" Polymer and Analytical Chemistry in Tennessee, Knoxville, TN, Aug. 2003. (Asif Rasheed, Graduate Student, Presenter)
57. "Optimization of Interfacial Interactions to Achieve Nanoscale Dispersion of Clay in Polymer/Clay Nanocomposites" Polymer and Analytical Chemistry in Tennessee, Knoxville, TN, Aug. 2003. (Deepali Kumar, Graduate Student, Presenter)
58. "The Effect of Chain Architecture on the Dynamics of Copolymers in a Homopolymer Matrix" Polymer and Analytical Chemistry in Tennessee, Knoxville, TN, Aug. 2003. (Sudesh Kamath, Postdoc, Presenter)
59. "Optimizing Interfacial Modification in Multi-component Polymer Systems: the Importance of Loops" Polymer Gordon Conference, South Hadley, MA, June 2003
60. "The Correlation of Carbon Nanotube Oxidation to the Properties and Dispersion of CNT/poly(styrene-co-vinylphenol) Nanocomposites" National Graduate Student Conference, Scranton, PA, June 2003 (Asif Rasheed, Graduate Student, Presenter)
61. "Ink-jet printed Single Molecules of MEH-PPV and CN-PPV and Their Chain Conformation" National Graduate Student Conference, Scranton, PA, June 2003 (Pradeep Kumar, Graduate Student, Presenter)
62. "Broadening Miscibility in Liquid Crystalline Polymer Blends by Optimizing Intermolecular Hydrogen Bonding" Annual Meeting of the American Physical Society, Austin, TX, March 2003.
63. "Long Range In-Plane Order of Oriented Diblock Copolymer Thin Films by Graphoepitaxy," Annual Meeting of the American Physical Society, Austin, TX, March 2003. (Scott Fontana, Graduate Student, Presenter)
64. "Kinetics of Telechelics Used in Reactive Compatibilization Monitored by Secondary Ion Mass Spectrometry" Annual Meeting of the American Physical Society, Austin, TX, March 2003. (Charles O'Brien, Graduate Student, Presenter)
65. "Measurements of Rheological and Structural Properties of Thin Lubricant Films at High Shear Rates" Annual Meeting of the American Physical Society, Austin, TX, March 2003. (Khaled Mrziq, Graduate Student, Presenter)
66. "Polarization Anisotropy Study of Z-oriented MEH-PPV Nanoparticles" Annual Meeting of the American Physical Society, Austin, TX, March 2003. (Pradeep Kumar, Graduate Student, Presenter)
67. "Polymer Molecular Weight and Fluorination Effects in PMMA/8CB Blends" Annual Meeting of the American Physical Society, Austin, TX, March 2003. (Nathan Crawford, Graduate Student, Presenter)

68. “Using Neutron Reflectivity to Determine the Diffusive Properties of Copolymers in a Homopolymer Matrix”, First American Conference on Neutron Scattering, Knoxville, TN, June 2002.
69. “Interfacial Modification by Copolymers: The Importance of Copolymer Microstructure”, Annual Meeting of the American Physical Society, Indianapolis, IN, March 2002.
70. “The Compatibilization Effect of Alternating Copolymers on an Immiscible Polymer Blend”, Annual Meeting of the American Physical Society, Indianapolis, IN, March 2002. (Michael Arlen, Graduate Student, presenter)
71. “Understanding the Mechanism of Cyanoacrylate Polymerization in Latent Fingerprinting”, Annual Meeting of the American Physical Society, Indianapolis, IN, March 2002. (Steve Wargacki, Graduate Student, presenter)
72. “Rod shaped MEH-PPV Nanoparticles that are Spatially Oriented” Annual Meeting of the American Physical Society, Indianapolis, IN, March 2002. (Pradeep Kumar, Graduate Student, presenter)
73. “Measurements of Rheological and Structural Properties of Lubricant Films”, Annual Meeting of the American Physical Society, Indianapolis, IN, March 2002. (Khaled Mrziq, Graduate Student, presenter)
74. “Molecular Weight Effect on the Phase Behavior of Polymer and Liquid Crystal Mixtures: Correlation of Theory and Experiment”, National Meeting of the Materials Research Society, Boston, MA November, 2001.
75. “High-Shear-Rate Optical Rheometer for Polymer Solutions and Melts”, Annual meeting of the American Institute of Chemical Engineers, Reno, NV, November, 2001 (H.D. Cochran, Collaborator, presenter).
76. “High-Shear-Rate Optical Rheometer for Polymer Solutions and Melts”, Society of Rheology National Meeting, Bethesda, MD, October, 2001 (K. Mrziq, Graduate Student, Presenter).
77. “Using Neutron Reflectivity to Determine the Diffusive Properties of Copolymers in a Homopolymer Matrix”, The National Meeting of the American Chemical Society, Chicago, IL, August. 2001: See also *Proc. Div. Polym. Mater. Sci. Eng.*, 85, 86 (2001).
78. “Compatibilization of Blends containing Poly(vinyl chloride) and a Polyolefin Elastomer by Blocky Chlorinated Polyethylenes”, The National Meeting of the American Chemical Society, Chicago, IL, August. 2001 (E. Eastwood, Graduate Student, Presenter): See also *Polymer Preprints*, 42(2), 850 (2001).
79. “Formation of Miscible Rod/coil Polymer Blends using Optimal Hydrogen Bonding” The National Meeting of the American Chemical Society, San Diego, April. 2001 (S. Viswanathan, Graduate Student, Presenter): See also *Proc. Div. Polym. Mater. Sci. Eng.*, 84, 670 (2001).

80. "Ability of Multi-block Copolymers to Compatibilize Polymer Blends." The National Meeting of the American Chemical Society, San Diego, April. 2001 (E. Eastwood, Graduate Student, Presenter): See also *Proc. Div. Polym. Mater. Sci. Eng.*, 84, 672 (2001).
81. "An Optical Rheometer for Simultaneous Study of Structures and Rheological Properties of Polymer Solutions under High Shear Rates" National Meeting of the American Physical Society, Seattle, WA March 2001 (K. Mrziq, Graduate Student, Presenter)
82. "FT-IR studies of Hydrogen Bonding in a Blend containing an N-methylated Liquid Crystalline Polyurethane", National Meeting of the American Physical Society, Seattle, WA March 2001 (S. Viswanathan, Graduate Student, Presenter)
83. "The Effect of Difunctional Oligomer Concentration and Processing Temperature on the Reactive Processing of Polymer Blends", National Meeting of the American Physical Society, Seattle, WA March 2001 (C. O'Brien, Graduate Student, Presenter)
84. "Monte Carlo Simulations of a Polymer Blend Modified by Copolymers of Varying Monomer Composition and Copolymer Structure", National Meeting of the American Physical Society, Seattle, WA March 2001 (D. Waldow, Collaborator, Presenter)
85. "Effect of Polymer Molecular Weight on the Phase Behavior of Polymer/Small Molecule Liquid Crystal Mixtures", National Meeting of the American Physical Society, Seattle, WA March 2001 (N. Crawford, Graduate Student, Presenter)
86. "The Diffusion of an Alternating Copolymer to the Biphasic Interface of an Immiscible Polymer Blend", National Meeting of the American Physical Society, Seattle, WA March 2001 (M. Arlen, Graduate Student, Presenter)
87. "Determining the Dynamics of Copolymer Interfacial Segregation" International Chemical Congress of Pacific Basin Societies, Honolulu, HI, Dec. 2000
88. "True Molecular Composites Formed by Optimal Hydrogen Bonding" International Chemical Congress of Pacific Basin Societies, Honolulu, HI, Dec. 2000
89. "Formation of a True Molecular Composite by Optimizing Intermolecular Hydrogen Bonding", Polymer Physics Gordon Conference, New London, CT, August, 2000
90. "Reactive Processing with Difunctional Oligomers to Increase Interfacial Adhesion in Polymer Blends" National Meeting of Graduate Students in Polymer Science, Hattiesburg, MS, June 2000. (C. O'Brien, Graduate Student, Presenter)
91. "Phase Behavior of 8CB/PMMA Blends" National Meeting of Graduate Students in Polymer Science, Hattiesburg, MS, June 2000. (N. Crawford, Graduate Student, Presenter)
92. "The Use of Poly(styrene-co-methyl methacrylate) Multi-Block Copolymers in the Compatibilization of Polymer Blends" National Meeting of Graduate Students in Polymer Science, Hattiesburg, MS, June 2000. (E. Eastwood, Graduate Student, Presenter)

93. "The Diffusion of an Alternating Copolymer to a Biphasic Interface" National Meeting of Graduate Students in Polymer Science, Hattiesburg, MS, June 2000. (M. Arlen, Graduate Student, Presenter)
94. "The Segregation of Alternating Copolymers to the Biphasic Interface of an Immiscible Polymer Blend" National Meeting of the American Physical Society, Minneapolis, MN, March 2000.
95. "Flow Induced Structure in Liquid Crystalline Polymers by Neutron Scattering" National Meeting of the American Physical Society, Minneapolis, MN, March 2000
96. "The Ability of Multi-block Copolymers to Compatibilize Polymer Blends", National Meeting of the American Physical Society, Minneapolis, MN, March 2000 (E. Eastwood, Graduate Student, Presenter)
97. "Reactive Processing with Difunctional Oligomers to Increase Interfacial Adhesion in Polymer Blends", National Meeting of the American Physical Society, Minneapolis, MN, March 2000 (C. O'Brien, Graduate Student, Presenter)
98. "On the Composition and Randomness Distributions of Random Copolymers Used in Compatibilizing Studies." National Meeting of the American Physical Society, Atlanta, GA, March 1999.
99. "The Effect of Polymer Rigidity on the Intermolecular Hydrogen Bonding in Polymer Blends", National Meeting of the American Physical Society, Atlanta, GA, March 1999. (S. Viswanathan, Graduate Student, Presenter)
100. "The Diffusion of an Alternating Copolymer to the Biphasic Interface of an Immiscible Polymer Blend", National Meeting of the American Physical Society, Atlanta, GA, March 1999. (M. Arlen, Graduate Student, Presenter)
101. "Preparation of Poly(styrene-co-methyl methacrylate) Multiblock Copolymers via Atom Transfer Radical Polymerization", National Meeting of the American Physical Society, Atlanta, GA, March 1999. (E. Eastwood, Graduate Student, Presenter)
102. "Investigation of a Polymer/Small Molecule Liquid Crystal Interface Using Reflectivity", National Meeting of the American Physical Society, Atlanta, GA, March 1999. (G. Lynn, Graduate Student, Presenter)
103. "A Course to Prepare Students to Work in the Chemical Industry", Southeast Regional Meeting of the American Chemical Society, Durham, NC, Nov. 1998
104. "Optimizing the Interfacial Modification of Immiscible Polymer Blends with Linear Copolymers", Polymer Physics Gordon Conference, Newport, RI, August, 1998.
105. "What is a Model Liquid Crystalline Polymer Solution?: Solvent Effects on the Flow Behavior of LCP Solutions", National Meeting of the American Chemical Society, Boston, MA, August, 1998: see also *Proc. Div. Polym. Mater. Sci. Eng.*, 79, 365 (1998).

106. "The Effect of Transesterification on the Properties of Polymer Blends containing a Liquid Crystalline Polymer", National Meeting of the American Chemical Society, Dallas, TX, April, 1998. (B. Radmard, Graduate Student, Presenter): see also *Proc. Div. Polym. Mater. Sci. Eng.*, 78, (1998).
107. "An Examination of the Polymer-Liquid Crystal Interface by Reflectivity Techniques" National Meeting of the American Physical Society, Los Angeles, CA, March 1998. (G. Lynn, Graduate Student, Presenter)
108. "Flow Induced Structure in Liquid Crystalline Polymers by Neutron Scattering" National Meeting of the American Physical Society, Los Angeles, CA, March 1998.
109. "Interfacial Modification by Copolymers: Effect Sequence Distribution" Southeast Regional Meeting of the American Chemical Society, Roanoke, VA, Nov. 1997.
110. "An Examination of the Polymer/Liquid Crystal Interface by Reflectivity Techniques" Southeast Regional Meeting of the American Chemical Society, Roanoke, VA, Nov. 1997. (G. Lynn, Graduate Student, Presenter)
111. "What is a Model Liquid Crystalline Polymer Solution?", National Meeting of the American Physical Society, Kansas City, MO, March 1997.
112. "Copolymer Sequence Distribution Effect in Polymer Blend Interfacial Modification", National Meeting of the American Physical Society, Kansas City, MO, March 1997.
113. "Effect of Stiffness on the Adsorption Behavior of a Polymer: A Monte Carlo Study", National Meeting of the American Physical Society, Kansas City, MO, March 1997. (S. Chidambaram, Graduate Student, Presenter)
114. "The Role of Copolymer Architecture on the Interfacial Structure of a Ternary Polymer Blend", National Meeting of the Materials Research Society, Boston, MA, November, 1996.
115. "Examination of the Flow Induced Structure in a Thermotropic Polyether by Neutron Scattering", National Meeting of the Materials Research Society, Boston, MA, November, 1996.
116. "The Effect of Copolymer Architecture on the Interfacial Structure of a Phase Separated Blend", Meeting of the East Tennessee Section of the Materials Research Society, Knoxville, TN, May, 1996.
117. "Modification of Polymeric Interfaces to Attain Improved Properties", HCC-UT Seminar Series, Knoxville, TN, October, 1996.
118. "The Role of Copolymer Sequence Distribution on the Interfacial Modification of a Polymer Blend.", National Meeting of the American Chemical Society, New Orleans, LA, March, 1996: see also *Polymer Preprints*, 37(1), 713 (1996).
119. "Response of Liquid Crystalline Polymers to an Applied Shear Flow: Steady State and Relaxation Behavior.", National Meeting of the American Chemical Society, New Orleans, LA, March, 1996: see also *Polymer Preprints*, 37(1), 785 (1996).

120. "Examining Interfacial Effects in Polymers and Liquid Crystals Using Monte Carlo Simulation", National Meeting of the American Physical Society, San Jose, CA, March 1995
121. "Determination of the Orientation of a Liquid Crystalline Polymer by Neutron Scattering", Materials Research Society, Boston, MA, November, 1994.
122. "The Shear Rate Dependence of the Orientation by Flow of Liquid Crystalline Polymers", Polymer Physics Gordon Conference, Newport, RI, August 1994.
123. "A Neutron Scattering Study of a Lyotropic Polymer under Shear near the Gel Point", National Meeting of the American Chemical Society, Chicago, IL, August, 1993: See also *Polymer Preprints*, 34(2), 733 (1993).
124. "The Phase Behavior of a Semi-flexible Liquid Crystal Near an Adsorbing Surface", National Meeting of the American Chemical Society, Chicago, IL, August, 1993: See also *Polymer Preprints*, 34(2), 306 (1993).
125. "The Phase Behavior of a Semiflexible Liquid Crystal Near an Adsorbing Surface", Liquid Crystals Gordon Conference, Brewster, NH, June 1993.
126. "The Phase Behavior of a Hydrogen Bonding Molecular Composite", Materials Research Society Spring Meeting, San Francisco, CA, April, 1993.
127. "Phase Transitions of Liquid Crystalline Polymers as Studied by Neutron Scattering", American Chemical Society Meeting, Washington, D.C., August 1992: see also *Proc. Div. Polym. Mater. Sci. Eng.*, 67, 380 (1992).
128. "The Effect of Molecular Anisotropy on Polymer Phase Behavior", Polymer Physics Gordon Conference, Newport, RI, August 1992. (poster)
129. "The Response of Semiflexible Liquid Crystals to Quenched Random Disorder", American Physical Society Meeting, Indianapolis, IN, March 1992.
130. "The Gelation of Poly(γ -benzyl L-glutamate)", American Physical Society Meeting, Indianapolis, IN, March 1992.

References

Prof. M. Muthukumar
Polymer Sci. and Eng. Dept.
University of Massachusetts
Amherst, MA 01003.

Prof. Jimmy Mays
Chemistry Dept.
University of Tennessee
Knoxville, TN 37996

Dr. Wen-Li Wu
Polymers Division
NIST
Gaithersburg, MD 20899.