

LEI ZHU, Ph.D.

Associate Professor

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EDUCATION

Ph.D., Department of Polymer Science, University of Akron, Akron, Ohio, 2000

Thesis title: "Phase and Crystallization Behaviors Determined by Self-Organization, Crystallization, and Vitrification in Crystalline-Amorphous Diblock Copolymers"

Advisor: Stephen Z. D. Cheng

M.S., Department of Macromolecular Science, Fudan University, Shanghai, China, 1996

Thesis title: "Miscibility and Intermacromolecular Complexation in Polymer Blends due to Specific Interactions"

Advisor: Ming Jiang

B.S., Materials Chemistry, Fudan University, Shanghai, China, 1993

Thesis title: "Melt Rheology of Compatibilized Polystyrene/Low Density Polyethylene Blends"

Advisor: Ming Jiang

PROFESSIONAL EXPERIENCE

01/2009 – present, *Associate Professor*

Department of Macromolecular Science and Engineering, Case Western Reserve University

08/2007 – 01/2009, *Associate Professor*

Polymer Program of Institute of Materials Science and Department of Chemical, Materials and Biomolecular Engineering, University of Connecticut

08/2002 – 08/2007, *Assistant Professor*

Polymer Program of Institute of Materials Science and Department of Chemical, Materials and Biomolecular Engineering, University of Connecticut

09/2000 – 07/2002, *Postdoctoral Fellow*

Maurice Morton Institute and Department of Polymer Science, University of Akron

RESEARCH INTERESTS

- Ordered polymer structure, morphology, and their phase transitions at nanoscales
- Crystalline polymer and organic/inorganic nanocomposites for novel electric energy storage
- Noncentrosymmetric supramolecular self-assembly in crystals and liquid crystals
- Biodegradable polylactide based block copolymers and star-like polymers as nanomedicines
- Novel polyelectrolyte membranes for hydrogen and direct methanol microfluidic fuel cells

TEACHING EXPERIENCE

- 03,05 fall CHEG355 *Polymer Structure and Morphology*
- 03, 04, 05, 07 springs CHEG256 *Polymeric Materials*
- 04 spring and fall CHEG393 *Chemical Engineering Seminar*
- 05 spring CHEG239W *Chemical Engineering Laboratory (II)*

- 05, 06, 07 fall CHEG237W *Chemical Engineering Laboratory (I)*
- 06, 07, 08 spring (with Asandei) CHEM384 *Polymer Characterization II*
- 05 spring & fall, 06 spring ENGR100 *Orientation to Engineering*
- 09 spring EMAC404 *Polymer Engineering*
- 04-08, lectures and experimental demonstrations in Somers Middle and High Schools and E. O. Smith High School

Course	Title	Co-instructor	# of students	Student evaluations	
				Teacher	Dept.
CHEG256 Spring 2003	Polymeric Materials		21	8.3	8.4
CHEG355 Fall 2003	Polymer Structure and Morphology		11	8.9	8.7
CHEG256 Spring 2004	Polymeric Materials		19	8.9	8.2
CHEG256 Spring 2005	Polymeric Materials		15	8.4	8.2
CHEG239W Spring 2005	Chemical Engineering Laboratory II *	Montgomery Shaw	16	-	-
CHEG355 Fall 2005	Polymer Structure and Morphology		8	9.0	8.9
CHEG237W Fall 2005	Chemical Engineering Laboratory I	Eric Anderson	17	8.1	7.9
CHEM384 Spring 2006	Polymer Characterization II *	Alex Asandei	15	-	-
CHEG237W Fall 2006	Chemical Engineering Laboratory I	Eric Anderson	32	7.4	7.9
CHEG256 Spring 2007	Polymeric Materials		26	8.1	8.1
CHEM384 Spring 2007	Polymer Characterization II *	Alex Asandei	16	-	-
CHEG237W Fall 2007	Chemical Engineering Laboratory I	Eric Anderson	36	7.9	8.3
CHEM384 Spring 2008	Polymer Characterization II *	Alex Asandei	15	-	-

* Evaluation was not given individually and the overall evaluation was not available to Zhu.

UNIVERSITY SERVICES

- CHEG Program Graduate admission committee chair, 09/06 - present
Space, facilities and safety, 8/04-present
Undergraduate education committee, 08/04-08/06
Faculty search committee, 04, 05, 06, 07
- Polymer Program & IMS Graduate admission committee, 08/04 - present
Curriculum review committee, 05
Faculty search committee, 05
- School of Engineering Scholarship committee, 04-06
Curriculum committee, 08/07 – present
E-Course committee, 04/08 – present

PROFESSIONAL SYNERGISTIC ACTIVITIES

Professional Society Membership

American Chemical Society (ACS), American Physical Society (APS), Materials Research Society (MRS), North American Thermal Analysis Society (NATAS, 01-05), and North American Membrane Society (NAMS, 2006)

Reviewer Service (total 250 proposals/manuscripts)

NSF Panel Reviews (30), NSF proposal (14), ACS Petroleum Research Fund (PRF) (5), NSF-China proposal (11), National Synchrotron Light Source Soft Matter Scattering Review Panel (36), Hong Kong CERG proposal (7), Singapore Research Council proposal (1), U.S. Civilian Research and Development Foundation (CRDF) proposal (1), External thesis reviewer/committee (2)

Macromolecules (36), Polymer (41), Journal of Polymer Science, Part B: Polymer Physics (10), Nanotechnology (6), Biomacromolecules (8), Journal of Physical Chemistry B (6), Journal of Applied Polymer Science (5), Polymer Engineering and Science (4), Chemistry of Materials (4), Langmuir (3), Crystal Growth and Design (2), Macromolecular Rapid Communications (2), Journal of the American Chemical Society (1), Advanced Materials (1), Chemistry – An European Journal (1), Soft Matter (1), Journal of Chemical Physics (1), Journal of Nanoscience and Nanotechnology (1), Small (1), European Physics Journal E (1), Journal of Materials Science (1), Journal of Physics – Condensed Matter (1), Macromolecular Theory and Simulation (1), European Physics Letters (1), Journal of Micromechanics and Microengineering (1), Journal of Physics, Condensed Matter (1), European Polymer Journal (1), ACS Symposium Series (1), Proceeding of Materials Research Society (1)

Conference Session Chair/Significant Committee Membership

- Session chair, Thin Films, APS national meeting, Austin, TX, March 6, 2003
- Session chair, Nanotechnology (II), Emerging Information Technology Conference (IETC-2003), Princeton, NJ, November 1, 2003
- Session chair, Crystallization of Polymers, APS national meeting, Montreal, QC, Canada, 2004
- Session organizer/chair, Nanotechnology, Emerging Information Technology Conference (IETC-2004), Princeton, NJ, October 29, 2004
- Co-chair a session with Patrick Mather, Liquid Crystalline Polymers, APS national meeting, Los Angeles, CA, March 22, 2005
- Session chair, Semicrystalline Polymers in Scattering from Polymers Symposium, ACS national meeting, Washington, DC, August 30, 2005
- North American Thermal Analysis Society (NATAS) membership chair, 11/2003-03/2005
- NSF CAREER proposal review committee member, October 17-18, 2005
- NSF CMMI Nanomanufacturing review panel member, May 2, 2007
- Session chair, Nanotechnology (II), Emerging Information Technology Conference (IETC-2007), Princeton, NJ, August 9, 2007
- Session chair, 50 Years after the Discovery of Polymer Single Crystals Symposium, ACS national meeting, Boston, MA, August 21, 2007

AWARDS AND HONORS

- United Technologies Corporation (UTC) Professorship, 2008
- Polymer Program Director's Award for Faculty Excellence, 2008
- Rogers Teaching Excellence Award, 2005
- DuPont Young Professor Award, 2005
- 3M Non-tenured Faculty Award, 2004
- NSF CAREER Award, 2004

- Gencorp University Signature Award for Outstanding Academic and Research Work, University of Akron, 1999
- Guanghua Graduate Student Award, Fudan University, China, 1995
- Baogang Award, Fudan University, China, 1992

AWARDED AND PENDING RESEARCH GRANTS (total \$1.7M of \$2.8M in U.S. dollars)

1. *A New Bicontinuous Cubic Morphology in Diblock Copolymers as Photonic Bandgap Materials*
University of Connecticut Research Foundation
Sole PI, \$17,992, 01/01/03-01/07/03
2. *Development, Characterization, and Optimization of CO Tolerant Microscale Proton-Exchange Membrane Fuel Cells*
U.S. Army Phase II Micro/Miniature/Portable Fuel Cells
Co-PI with J.M. Fenton, \$75,000 (total \$150,000), 01/22/03-10/21/04
3. *CAREER: Tailoring the Nanostructure and Morphology of Hydrogen-bonded Supramolecular Liquid Crystals using Immiscible Polymer Side Chains*
National Science Foundation
CURRENT, Sole PI, \$430,000, 01/01/04-12/31/08
4. *Tailoring Centrosymmetric and Noncentrosymmetric Morphologies using Poly(L-lactide)/Poly(D-lactide) Stereocomplex*
ACS Petroleum Research Fund, Type G
Sole PI, \$35,000, 09/01/04-08/31/06
5. *Development of a Planarized Microfluidic Fuel Cell*
U.S. Army Phase III/Connecticut Global Fuel Cell Center
Sole PI, \$90,000, 10/15/04-08/15/06
6. *Functional Soft Materials at Nanoscales*
3M University Nontenured Faculty Grant
Sole PI, \$45,000, 12/01/04-11/30/07
7. *Molecular and Nano Composite Dielectrics for High Energy Density Capacitors for Pulsed Power and Power Conditioning Applications*
Office of Naval Research
Leading PI (with co-PIs A. Asandei, S. Boggs, and R. Ramprasad), \$300,000 (total \$710,000), 02/01/05-04/05/08
8. *Supramolecular Lipid/DNA/Carbon Nanotube Self-Assembly for Advanced Organic Electronics*
DuPont Young Professor Grant
Sole PI, \$75,000, 07/01/05-06/30/08
9. *RET Supplement: CAREER: Tailoring the Nanostructure and Morphology of Hydrogen-Bonded Supramolecular Liquid Crystals Using Immiscible Polymer Side Chains*
National Science Foundation
Sole PI, \$6,000, 07/12/06-08/11/06
10. *RET Supplement: CAREER: Tailoring the Nanostructure and Morphology of Hydrogen-Bonded Supramolecular Liquid Crystals Using Immiscible Polymer Side Chains*
National Science Foundation
Sole PI, \$8,000, 06/25/07-08/18/07
11. *Phase I: Nanodielectrics for High Power Capacitors and Passive Applications*
Air Force Office of Scientific Research, STTR subcontract from Agiltrong, Inc.

- Sole PI, \$30,000, 09/01/06-05/31/07
12. *Overseas Outstanding Researcher Award: Study on Complexes Based on Biomacromolecules and Small Molecules*
NSF-China
Leading PI (with Daoyong Chen), ¥400,000, 01/01/2006-12/31/2009
 13. *Proposal for Undergraduate Lab Education*
School of Engineering, University of Connecticut
Co-PI with Eric Anderson, and Montgomery Shaw, \$14,800, 01/01/06 – 02/28/06
 14. *Multivalent “Artificial Antibody” Based on RNA/Dendrimer-Like Star Polymer Hybrid Nanomaterials*
National Science Foundation
CURRENT, Co-PI (with PI, Yong Wang), \$225,000 (total \$450,000), 07/15/07-06/14/10
 15. *AFRL Research Project: Coatings Technology Development for Active Spectral Response (ASR) of Surfaces*
Subcontract from South Dakota School of Mines and Technology
Sole PI, \$25,000, 05/15/07-08/07/08
 16. *Phase II: Nanodielectrics for High Power Capacitors and Passive Applications*
Air Force Office of Scientific Research, STTR subcontract from Agiltron, Inc.
CURRENT, PI (co-PI, A. Dobrynin), \$180,000 (total \$225,000), 08/15/07-08/14/09
 17. *Acquisition of a Scanning Transmission Electron Microscope for Research, Education and Outreach in Materials Science*
University of Connecticut Provost Research Equipment Competition
CURRENT, co-PI (with PI: Mark Aindow and co-PI: Barry Carter), \$160,000 (total \$500,000), 12/01/07 – 06/30/08
 18. *Unimolecular polymeric Janus nanoparticles: Synthesis, self-assembly and applications*
ACS Petroleum Research Fund
CURRENT, PI, \$100,000, 01/01/09 – 08/31/10
 19. *Acquisition of a 500 MHz Solid State NMR Spectrometer*
National Science Foundation
DECLINED, co-PI (with PI: Steven Suib and co-PIs: Rajeswari Kasi, Michael Pikal, Leon Shaw), \$500,000, 02/01/09 – 01/31/12
 20. *Interfacial Self-Assembly Behavior of Binary Mixed Polymer Brushes on Silica Particles*
National Science Foundation
PENDING, PI (with co-PI: Bin Zhao at Univ. of Tennessee), \$200,000 (total \$400,000), 06/01/09 – 05/31/12
 21. *Large-Scale Nanomanufacturing of Well-Positioned and Highly Aligned DNA Wires from a Capillary Bridge*
National Science Foundation
PENDING, co-PI (with PI: Zhiqun Lin and co-PI: Qingze Zou at Iowa State Univ.), \$100,787 (total \$438,679), 08/01/09 – 07/31/12
 22. *Travel Support for an ACS PMSE Symposium “Functional Polymer Nanocomposites for Energy Storage and Conversion”, March 22-26, 2009, Salt Lake City, UT*
National Science Foundation
CURRENT, PI, \$4,000, 03/01/09 – 02/28/10
 23. *Polymer Ferroelectricity Confined in Nanospaces*

National Science Foundation
PENDING, PI, \$300,000, 07/01/09 – 06/31/12

POST DOCTORAL FELLOWS/VISITING SCIENTISTS

Prof. Qiaolong Yuan, Wheat Gluten/Natural Clay Nanocomposites, 03/04 - 8/04
Prof. Xiuling Zhu, 1) Organic/Inorganic Composite PEM Fuel Cells and 2) Planarized Micro Fuel Cells, 08/05-08/06
Dr. Li Cui, 1) Synthesis of Novel Asymmetric Discotic Liquid Crystals and 2) Molecular and Nanocomposite for High Energy Density Capacitors, 06/04-09/06
Dr. Zhongzhe Yuan, Molecular and Nanocomposites for High Energy Density Capacitors, 09/06-11/07
Dr. Dunliang Jian, Molecular and Nanocomposites for High Energy Density Capacitors, 03/07-12/07
Dr. Jing Wang, Polymer-Ceramic Nanocomposites for High power Capacitors, 09/07-present
Mr. Ganji Zhong (from Sichuan University), PET-Inorganic Nanocomposites for Better Barrier Properties, 10/08-present

GRADUATE STUDENTS

Ph.D. Students

Lu Sun, Structure and Morphology of Lactide Block Copolymers and Their Stereocomplexes, 08/02 – 05/07 (now in Praxair, Indianapolis, IN)
Jianjun Miao, Supramolecular Self-Assembly from Janus Discotic Liquid Crystals, 08/03 - present
Weiqiang Cao, Biodegradable Polylactide Block Copolymers, 09/06 – present
Fangxiao Guan, Dielectric Properties of Polymers, 09/06 – present

M.S. Students

Yuxiu Liu, Organic/Inorganic Composite Materials for High Temperature PEM Fuel Cells, 08/02 – 08/05.
Brian Elolampi, Design, Fabrication and Analysis of a Planarized Micro Polymer Electrolyte Membrane Fuel Cell, 08/04 – 03/06.

UNDERGRADUATE STUDENTS

NSF REU Students and RET Teachers

Alyssa Wiley, Lafayette College, Block Copolymer/Clay Nanocomposites, 06/03 - 08/03
Adam Mayernick, University of Rochester, Synthesis of Biodegradable ABC Triblock Copolymers, 06/04 - 08/04
Henry Lau, Columbia University, Synthesis and Characterization of Coil-Coil-Sphere Triblock Copolymers, 06/04 - 08/04.
Steven Viel, Bucknell University, “Mechanical Property of Wheat Gluten/Clay Nanocomposites,” (co-advise with Richard Parnas), 06/04 - 08/04.
Jorge E. Ginorio, Universidad de Puerto Rico, Recinto Universitario Mayagüez, “Synthesis and Characterization of Well-defined Polylactide Block Copolymers and Their Stereocomplexes,” 06/05 - 08/05.
Amanda Feldman, Western New England College, Dielectric Breakdown Properties of P(VDF-HFP)/SiO₂ Nanocomposites, 06/06-08/06
Christine Ricci, Smith College, Synthesis and Characterization of Asymmetric Heme Discotic Molecules, 06/06-07/06 and 06/08-08/08
Dr. Richard Wilson, science teacher, Somers High School, Synthesis of Amphiphilic Heme Discotic Molecules, 07/05-08/05
Mr. Robert Pirrie, chemistry teacher, E. O. Smith High School, Synthesis and Characterization of Asymmetric Heme Discotic Molecules, 07/06-08/06

Rhiannon McCarthy, Tantasqua Regional High School, MA, Polymer-ceramic Nanocomposites for High power Capacitors, 07/07/07-07/27/07

Mrs. Jeannette Martus, biology teacher, E. O. Smith High School, Synthesis and Characterization of Asymmetric Heme Discotic Molecules, 07/23/07-08/22/07

UCONN Chemical Engineering Students (via CHEG299 Independent Study for 2-3 credits)

Ethan Ertel, Morphology of PEO/Organoclay Nanocomposites, 08/03-12/03

Phillip Baker, Single-walled Carbon Nanotube/RNA Interactions, 01/04-05/04

Jeffrey P. Collet, Synthesis of Mixed Discotic Star Molecules, 09/04-12/04

Masarath Ghiasuddin, RNA Degradation in Single-walled Carbon Nanotube/RNA Complex, 09/04-12/04

Janet Grezlik, Synthesis of Discotic Phthalocyanine Supermolecules, 01/05-05/05

Brian R. Fuller, Construction of a Preparative Scale GPC, 08/05-12/05

Josh Sherwood, Synthesis of Triphenylene-C₆₀ Dyad Molecules, 08/05-12/05

Michael J. Heinzer, Jr, Silica-based High Temperature PEM Fuel Cells, 08/05-12/05

Jennifer Cileli, 1) Single Crystals from Biodegradable Polylactide Stereocomplexes, 08/05-05/06; 2) Synthesis of C₆₀-Triphenylene Dyad Molecules, 01/06-05/06

Matthew Morin, Micro Fuel Cells, 01/07-05/07

James Steffes, Asymmetric Heme molecules, 01/07-05/07

Jason White and Alison Chen, Grafting PET from Magdiite Nanoclays, 01/07-05/07

Jennifer Lucatino, Miscibility study of PEO, PLLA and PDLA Blends, 08/07-05/08

Nathan Barlow, DNA-POSS Bionanomaterials for Gene Delivery, 01/08-08/08

Other Undergraduate Students

Michaël Prévost, University of Rouen, French trainee student, Synthesis and Characterization of Triphenylene Lipids and Triphenylene- C₆₀ Dyad Molecules, 04/03/05-08/02/05

Simon Wong, Cornell University, Design and Fabrication of Planarized Micro Fuel Cells, 05/06-08/06

OUTREACH TO K-12 EDUCATION

- 2004-present, Taught Somers Middle and High School technical classes, 1-2 classes per semester
- 07/2004, participated in the SoE DaVinci project with Patrick Mather, one-week workshop for three High School teachers [Janice Gregori (Torrington High School), Sandra Pratt (Woodstock Academy), and Mathieu Freeman (Greens Farms Academy)]: “Polarized Optical Microscopy Study of Shape Memory Polymer Crystallization”.
- 07/2005-08/2005, RET supplement to the PI’s NSF CAREER Award, Dr. Richard Wilson (Somers High School science teacher) worked in the PI’s lab on “Synthesis and characterization of asymmetric discotic heme molecules.”
- 07/2006-08/2006, RET supplement to the PI’s NSF CAREER Award, Mr. Robert Pirrie (E. O. Smith High School) and worked Ms. Christine Ricci (senior student at Somers High School) in the PI’s lab on “Synthesis and characterization of asymmetric discotic heme molecules.”
- 06/2006, contributed a fuel cell/solar cell car to the pre-engineering curriculum at Somers High School (collaboration with Mr. Raymond McCarthy, technical teacher, and Dr. Richard Wilson)
- 07/17/2006-07/21/2006, SoE DaVinci project, one-week workshop for three high school teachers [Dale Gregorich, Bryan McCauley, and Jeffrey Sutherland]: “Polymers in Liquid Crystal Displays.”
- Fall 2006, co-developing a pre-engineering curriculum at Somers High School with Mr. Raymond McCarthy

REFEREED PUBLICATIONS

Publications Prior to at University of Connecticut

1. Zhu, L.; Liu, L.; Jiang, M. Synthesis of monodispersed hydroxyl-containing polystyrene via chemical modification. *Macromol. Rapid Comm.* **1996**, *16*, 37-42.
2. Li, M.; Jiang, M.; Zhu, L.; Wu, C. Novel surfactant-free stable colloidal nanoparticles made of randomly carboxylated polystyrene ionomers. *Macromolecules* **1997**, *30*, 2201-2203.
3. Jiang, M.; Li, M.; Liu, L.; Xiang, M.; Zhu, L. Macromoleuclar aggregation: Complexation due to hydrogen bonding and hydrophobic association. *Macromol. Symp.* **1997**, *124*, 135-146.
4. Li, M.; Zhang, Y. B.; Jiang, M.; Zhu, L.; Wu, C. Studies on novel surfactant-free polystyrene nanoparticles formed in microphase inversion. *Macromolecules* **1998**, *31*, 6841-6844.
5. Zhu, L.; Jiang, M.; Liu, L.; Zhou, H.; Fan, L.; Zhang, Y.; Zhang, Y.; Wu, C. Intermacromolecular complexation due to specific interactions. 6. Miscibility and complexation between poly{styrene-co-[p-2-hydroxypropan-2-yl]styrene}} and poly(n-butyl methacrylate-co-4-vinylpyridine). *J. Macromol. Sci., -Phys.* **1998**, *B37*, 805-826.
6. Zhu, L.; Jiang, M.; Liu, L.; Zhou, H.; Fan, L.; Zhang, Y. Intermacromolecular complexation due to specific interactions. 7. Miscibility and complexation between poly(styrene-co-4-vinyl benzoic acid) and poly(n-butyl methacrylate-co-4-vinylpyridine). *J. Macromol. Sci., -Phys.* **1998**, *B37*, 827-839.
7. Kim, Y.; Guo, M. M.; Zhu, L.; Kim, D. Y.; Harris, F. W.; Cheng, S. Z. D. Transimidization in the thermoplastic polyimides. *Chinese J. Polym. Sci.* **1999**, *17*, 171-184.
8. Cheng, S. Z. D.; Zhu, L.; Li, C. Y.; Honigfort, P. S.; Keller, A. Size effect of metastable states on semicrystalline polymer structures and morphologies. *Thermochimica Acta* **1999**, *332*, 105-113.
9. Xu, S. A.; Zhu, L.; Xie, J. W.; Jiang, M. Melt rheology of compatibilized polystyrene/low density polyethylene blends. *Polym. Int.* **1999**, *48*, 1113-1120.
10. Cheng, S. Z. D.; Zhu, L.; Li, C. Y. Size effect of metastable states on semicrystalline polymer structures and morphologies. *Gaofenzi Tongbao* **1999**, (3), 28-33, 46.
11. Zhu, L.; Chen, Y.; Zhang, A.; Calhoun, B. H.; Chun, M.; Quirk, R. P.; Cheng, S. Z. D. Phase structures and morphologies determined by self-organization, crystallization, and vitrification in a disordered poly(ethylene oxide)-b-polystyrene diblock copolymer. *Phys. Rev. B.* **1999**, *60*, 10022-10031.
12. Zhu, L.; Cheng, S. Z. D.; Calhoun, B. H.; Ge, Q.; Quirk, R. P.; Thomas, E. L.; Hsiao, B. S.; Yeh, F.; Lotz, B. Crystallization temperature-dependent crystal orientations within nano-confined lamellae of a self-assembled crystalline-amorphous diblock copolymer. *J. Am. Chem. Soc.* **2000**, *122*, 5957-5967.
13. Cheng, S. Z. D.; Li, C. Y.; Calhoun, B. H.; Zhu, L.; Zhou, W. W. Thermal Analysis: the next two decades *Thermochimica Acta* **2000**, *355*, 59-68.
14. Zhu, L.; Cheng, S. Z. D.; Calhoun, B. H.; Ge, Q.; Quirk, R. P.; Hsiao, B. S.; Yeh, F. Phase structures and morphologies determined by self-organization, crystallization, and vitrification in poly(ethylene oxide)-b-polystyrene diblock copolymers. *Chinese J. Polym. Sci.* **2000**, *18*, 287-300.
15. Cheng, S. Z. D.; Li, C. Y.; Zhu, L. Commentary on polymer crystallization: Selection rules in different length scales of a nucleation process. *Eur. Phys. J. E.* **2000**, *3*, 195-197.
16. Zhang, G.; Jiang, M.; Zhu, L.; Wu, C. Intermacromolecular complexation because of specific interactions 11. Ionic interaction complexation and its comparison with hydrogen-bonding complexation. *Polymer* **2001**, *42*, 151-159.
17. Zhu, L.; Calhoun, B. H.; Ge, Q.; Quirk, R. P.; Cheng, S. Z. D.; Thomas, E. L.; Hsiao, B. S.; Yeh, F.; Liu, L.; Lotz, B. Initial-stage growth controlled crystal orientations in nanoconfined lamellae of a self-assembled crystalline-amorphous diblock copolymer. *Macromolecules* **2001**, *34*, 1244-1251.

18. Zhu, L.; Cheng, S. Z. D.; Calhoun, B. H.; Ge, Q.; Quirk, R. P.; Thomas, E. L.; Hsiao, B. S.; Yeh, F.; Lotz, B. Phase structures and morphologies determined by self-organization, vitrification, and crystallization: Confined crystallization in an ordered lamellar phase of PEO-*b*-PS diblock copolymer. *Polymer* **2001**, *42*, 5829-5839.
19. Zhu, L.; Huang, P.; Cheng, S. Z. D.; Ge, Q.; Quirk, R. P.; Thomas, E. L.; Lotz, B.; Wittmann, J.-C.; Hsiao, B. S.; Yeh, F.; Liu, L. Dislocation-controlled perforated layer phase in a PEO-*b*-PS diblock copolymer. *Phys. Rev. Lett.* **2001**, *86*, 6030-6033.
20. Zhu, L.; Mimnaugh, B.; Ge, Q.; Quirk, R. P.; Cheng, S. Z. D.; Thomas, E. L.; Lotz, B.; Hsiao, B. S.; Yeh, F.; Liu, L. Hard and soft confinement effects on polymer crystallization in microphase separated cylinder-forming PEO-*b*-PS/PS blends. *Polymer* **2001**, *42*, 9121-9131.
21. Huang, P.; Zhu, L.; Cheng, S. Z. D.; Ge, Q.; Quirk, R. P.; Thomas, E. L.; Lotz, B.; Hsiao, B. S.; Yeh, F.; Liu, L. Crystal orientation changes in two-dimensionally confined nano-cylinders in a poly(ethylene oxide)-*b*-polystyrene/polystyrene blend. *Macromolecules* **2001**, *34*, 6649-6657.
22. Zhu, L.; Cheng, S. Z. D.; Huang, P.; Calhoun, B. H.; Ge, Q.; Quirk, R. P.; Thomas, E. L.; Lotz, B.; Hsiao, B. S.; Yeh, F.; Liu, L. Nanoconfined polymer crystallization in the hexagonal perforated layers of a self-assembled PS-*b*-PEO diblock copolymer. *Adv. Mater.* **2002**, *14*, 31-34.
23. Zhu, L.; Huang, P.; Chen, W. Y.; Ge, Q.; Quirk, R. P.; Cheng, S. Z. D.; Thomas, E. L.; Lotz, B.; Hsiao, B. S.; Yeh, F.; Liu, L. Nanotailored crystalline morphology in hexagonally perforated layers of a self-assembled PS-*b*-PEO diblock copolymer. *Macromolecules* **2002**, *35*, 3553-3562.
24. Liu, Z.; Zhu, L.; Zhou, W. S.; Cheng, S. Z. D.; Percec, V.; Ungar, G. Phase behaviors and molecular and supramolecular structural identifications of a liquid crystalline second generation monodendron. *Chem. Mater.* **2002**, *14*, 2384-2392.
25. Liu, Z.; Zhu, L.; Percec, V.; Ungar, G.; Cheng, S. Z. D. Interrelationships of nanometer and subnanometer structures in a polynorbornene containing second generation liquid-crystalline monodendrons as side groups. *Macromolecules* **2002**, *35*, 9426-9433.
26. Quirk, R. P.; You, F. X.; Zhu, L.; Cheng, S. Z. D. Anionic polymerization of cyclohexa-1,3-diene in cyclohexane with high stereoregularity and the formation of crystalline poly(cyclohexa-1,3-diene). *Macromol. Chem. Phys.* **2003**, *204*, 755-761.

Publications at University of Connecticut (total of 33)

27. Zhu, L.*; Huang, P.; Chen, W. Y.; Cheng, S. Z. D.; Ge, Q.; Quirk, R. P.; Senador, T.; Shaw, M. T.; Thomas, E. L.; Lotz, B.; Hsiao, B. S.; Yeh, F.; Liu, L. 'Plastic deformation' mechanism and phase transformation in a shear-induced metastable hexagonally perforated layer phase of a polystyrene-*b*-poly(ethylene oxide) diblock copolymer. *Macromolecules* **2003**, *36*, 3180-3188.
28. Xue, C.; Jin, S.; Weng, X.; Ge, J. J.; Shen, Z.; Shen, H.; Graham, M. J.; Jeong, K.-U.; Wang, H.; Zhang, D.; Guo, M.; Harris, F. W.; Cheng, S. Z. D.; Li, C. Y.; Zhu, L. Self-assembled 'supramolecular' structures via hydrogen bonding and aromatic/aliphatic microphase separation on different length scales in symmetric-tapered bisamides. *Chem. Mater.* **2004**, *16*, 1014-1025.
29. Sun, L.; Zhu, L.*; Ge, Q.; Quirk, R. P.; Xue, C.; Cheng, S. Z. D.; Hsiao, B. S.; Avila-Orta, C. A.; Sics, I.; Cantino, M. E. Comparison of crystallization kinetics in various nanoconfined geometries. *Polymer* **2004**, *45*, 2931-2939.
30. Sun, L.; Liu, Y.; Zhu, L.*; Hsiao, B. S.; Avila-Orta, C. A. Path-dependent melting in a low molecular weight polyethylene-*block*-poly(ethylene oxide) diblock copolymers. *Macromol. Rapid Comm.* **2004**, *25*, 853-857.
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H-Index (based on SciFinder and Web of Science)

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BOOK CHAPTERS

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2. Zhu, L. "Polymer Ordering in Nanoconfined Spaces" in H. S. Nalwa (ed.) *Polymeric Nanostructures and Their Applications*; American Scientific Publishers: Stevenson Ranch, CA, 2007, chapter 10.
3. Zhu, X.; Liu, Y.; Zhu, L. "Polymer Composites for High Temperature Proton-Exchange Membrane Fuel Cells" in S. M. J. Zaidi and T. Matsuura eds., *Polymer Membranes for Fuel Cells*, Springer: New York, 2008, chapter 7.

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19. Cui, L.; Zhu, L. Ionic interaction induced high-order lamello-columnar phases in asymmetric discotic triphenylene salts. *PMSE Preprint*. **2005**, *93*, 648-649.
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23. Miao, J.; Cui, L.; Zhu, L. Synthesis and characterization of polyethylene-*b*-poly(ethylene oxide)-*b*-polyhedral oligomeric silsesquioxane (POSS) triblock copolymers. *PMSE Preprint*. **2006**, *95*, 773-774.
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27. Cao, W.; Sun, L.; Zhu, L. Miscibility and crystallization behaviors of PEO and PLA, PLLA or PLLA/PDLA stereocomplex blends. *PMSE Preprint*. **2007**, *97*, 380-381.
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31. Cao, W.; Sun, L.; Rong, L.; Hsiao, B. S.; Zhu, L. Chirality effect on interaction parameters in poly(ethylene-*co*-1-butene)-*b*-polylactide diblock copolymers. *PMSE Preprint* **2008**, *99*, 378-380.
32. Cui, L.; Chen, D.; Zhu, L. Mesophase transformations in a DNA complex with cationic polyhedral oligomeric silsesquioxane lipid. *PMSE Preprint* **2008**, *99*, 733-734.
33. Wang, J.; Guan, F.; Wang, Q.; Huang, J.; Li, W.; Zhu, L. Achieving high dielectric constant polymer/BaTiO₃ nanocomposites at low filling ratios. *PMSE Preprint* **2009**, *100*, xxx.

PRESENTATIONS

Invited Presentations

1. "Nano-confined polymer crystallization in crystalline-amorphous diblock copolymers," Invited presentation at Ohio Chinese American Professional Association (OCAPA) 2001 Annual Meeting, Kent State University, Kent, OH, June 2, 2001.
2. "Nano-structured Morphology of Block Copolymers," invited presentation, Annual Institute of Materials Science Advisory Board Meeting, November 19, 2002.
3. "From Block Copolymer Nano-structures to Nano-templates," invited presentation, Rogers Corp., Rogers, CT, March 19, 2003.
4. "Nano-structure and Morphology in Polymeric Materials," invited presentation, Annual Associate Program Advisory Board Meeting, May 28, 2003.
5. "Ionomeric Materials Fabrication and Characterization," invite presentation, UTC Fuel Cells/UConn Seminar Series at UTC Fuel Cells, South Windsor, CT, August 11, 2003.
6. "Crystallization in Various Nano-confined Environments," Invited talk at the 3rd Annual Emerging Information Technology Conference, Nov. 1, 2003.
7. "Self-assembly and Crystallization Behaviors in Crystalline Block Copolymers," invited talk at Chemistry Department, SUNY at Binghamton, February 27, 2004.
8. "Self-assembly and Crystallization Behaviors in Crystalline Block Copolymers," invited talk at Chemistry Department, University of Sherbrooke, March 26, 2004.
9. "Structure and Morphology of Crystalline Polymer/Clay Nanocomposites," invited presentation, Annual Associate Program Advisory Board Meeting, May 26, 2004.
10. "Self-assembly and Crystallization of Ethylene and Ethylene Oxide Oligo-copolymers," Invited talk at International Symposium on Polymer Physics, Dali, China, June 3, 2004.
11. "Epitaxial Phase Transformation in Diblock Copolymers," invited talk at the Third East-Asian Polymer Conference (EAPC-3), Chengdu, China, June 9, 2004.
12. "Phases and phase transitions in a coil-coil-disk triblock copolymer," invited presentation at 4th Emerging Information Technology Conference, Princeton, NJ, October 29, 2004.
13. "Molecular Ordering in Oligomeric Crystalline and Liquid Crystalline Polymers," invited talk at Chemistry Department, Staten Island College (City University of New York), New York, NY, April 7, 2005.
14. "Molecular Ordering in Oligomeric Crystalline and Liquid Crystalline Polymers," invited talk at Physics Department, Tufts University, Boston, MA, April 8, 2005.
15. "Discotic Liquid Crystals from Molecular Complexes with DNA," invited talk at the Polymer Program Annual Advisory Board Meeting, Storrs, CT, May 17, 2005.
16. "Molecular and Nanocomposites for High Energy Density Capacitors for Pulsed Power Applications," invited talk at 2005 ONR Capacitor Kickoff Meeting, Washington DC, June 9, 2005.
17. "Discotic Liquid Crystals from Molecular Complexes with DNA," invited talk, School of Material Science & Engineering, East China University of Science and Technology, Shanghai 200237, June 21, 2005.
18. "Discotic Liquid Crystals from Molecular Complexes with DNA," invited talk, Macromolecular Science Department, Fudan University, Shanghai, 200433, June 24, 2005.
19. "Discotic Liquid Crystals from Molecular Complexes with DNA," invited talk, Department of Polymer Science and Engineering, College of Chemistry, Peking University, Beijing 100871, June 27, 2005.
20. "Supramolecular Self-assembly in Novel Asymmetric Discotic Liquid Crystals," invited talk at 3M, St. Paul, MN, September 12, 2005.
21. "Molecular and Nanocomposites for High Energy Density Capacitors for Pulsed Power Applications," invited talk at 2006 ONR Capacitor Review Meeting, San Diego, March 7, 2006.
22. "Supramolecular Self-assembly in Novel DNA-Cationic Lipid Complexes," invited talk at MS&E, Drexel University, Philadelphia, PA, March 17, 2006.

23. "Development of Nafion[®]/SiO₂/Phosphotungstic Acid Nanocomposite Membranes for High Temperature Proton Exchange Membrane (PEM) Fuel Cells," invited talk at North American Membrane Society 2006 meeting, Chicago, IL, May 16, 2006.
24. "Supramolecular Self-assembly in Novel DNA-Cationic Lipid Complexes," invited talk at Department of Chemical Physics, University of Science and Technology of China, Hefei, China, August 3, 2006.
25. "Supramolecular Self-assembly in Novel DNA-Cationic Lipid Complexes," invited talk at Department of Polymer Science and Engineering, College of Chemistry, Peking University, Beijing, China, August 22, 2006.
26. "Role of Noncentrosymmetry in Supramolecular Self-assembly," invited talk at Department of Chemistry, State University of New York at Stony Brook, Stony Brook, November 21, 2006.
27. "Nano Onions From Biodegradable Polylactide Block Copolymers," invited talk at ACS West Connecticut Section, Sacred Heart University, January 23, 2007.
28. "Role of Noncentrosymmetry in Liquid Crystalline and Block Copolymer Self-assemblies," invited talk at University of Massachusetts at Amherst, February 16, 2007.
29. "Molecular and Nanocomposites for High Energy Density Capacitors for Pulsed Power Applications," invited talk at 2007 ONR Capacitor Review Meeting, Baltimore, March 1, 2007.
30. "Tailoring Onion-like Morphology in Polylactide-containing Block Copolymers," invited talk at Suzhou University, China, July 10, 2007.
31. "Supramolecular Self-assembly in Novel DNA-Cationic Lipid Complexes," invited talk at Nanjing University, China, July 12, 2007.
32. "Inorganic Nanoparticles as New Platform for Functional Polymer Composites," invited talk at Alcatel-Lucent, Inc., Murray Hill, NJ, August 8, 2007.
33. "Tailoring Onion-like Morphology in Polylactide-containing Block Copolymers," invited talk at 50 Years after the Discovery of Polymer Single Crystals Symposium, ACS meeting, Boston, MA, August 20, 2007.
34. "Role of Noncentrosymmetry in Supramolecular Self-assemblies," invited talk at Rensselaer Polytechnic University, September 24, 2007.
35. "Self-Assembled Biodegradable Block Copolymers and DNA Lipoplexes as Potential Delivery Systems," invited talk at Northeastern University, January 25, 2008.
36. "Molecular and Nanocomposites for High Energy Density Capacitors for Pulsed Power Applications," invited talk at 2008 ONR Capacitor Review Meeting, Hilton Head Island, March 4, 2008.
37. "Self-Assembled Biodegradable Block Copolymers as Potential Nanomedicines and Polymer Dielectric Films for High Energy Density Capacitors," invited talk at Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, OH, April 1, 2008.
38. "Self-Assembled Biodegradable Block Copolymers and DNA Lipoplexes as Potential Nanomedicines," invited talk at Department of Chemical Engineering and Materials Science, University of California, Irvine, Irvine, CA, April 11, 2008.
39. "DNA Lipoplexes and RNA Aptamer-Polymer Conjugates as Potential Nanomedicines," invited talk at Shuang Qing Forum, Beijing, China, May 28, 2008.
40. "Tailoring Onion-Like Morphology in Polylactide-Containing Block Copolymers," invited presentation at 5th East-Asian Polymer Conference (EAPC-5), Shanghai, China, June 5, 2008.
41. "Mesophase Transformations in DNA Complexes with Cationic Lipids," invited presentation at International Symposium of Polymer Physics, Xiamen, China, June 11, 2008.
42. "Self-Assembled Biodegradable Block Copolymers and DNA Lipoplexes as Potential Nanomedicines," invited talk at Department of Polymeric Materials Science and Engineering, Hebei Industrial University, Tianjin, China, June 28, 2008.

43. "Tailoring Noncentrosymmetric Morphology in Polylactide-Containing Block Copolymers," invited colloquium at 32nd Annual Symposium of Macromolecular Science and Engineering Center, University of Michigan, Ann Arbor, MI, October 23, 2008.
44. "Achieving high dielectric constant polymer/BaTiO₃ nanocomposites at low filling ratios," invited presentation at the 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009.

Contributed Presentations at Conferences

45. "Synthesis of hydroxyl containing monodispersed polystyrene via chemical modification," Contributed oral presentation at First East-Asian Polymer Conference, Shanghai, P. R. China, October 12, 1995.
46. "Simultaneous SAXS and WAXS study on semicrystalline diblock copolymer PEO-*b*-PS," Contributed oral presentation at 3rd National Graduate Polymer Conference, Akron, OH, June 21, 1998.
47. "Competitions among self-organization, vitrification, and crystallization in PEO-*b*-PS block copolymers," Contributed poster at Society for the Advancement of Material and Process Engineering (SAMPE) Local Meeting, Cleveland, OH, March 16, 1999.
48. "Confined crystallization in a lamellar PEO-*b*-PS diblock copolymer," Contributed poster at APS National Meeting, Minneapolis, MN, March 20, 2000.
49. "Molecular ordering within ordered supramolecular structure," Contributed poster at ACS National Meeting, Washington D.C., August 20, 2000.
50. "Confined polymer crystallization in hexagonal perforated layers," Contributed poster at Sponsors' Day, The University of Akron, Akron, OH, October 12, 2000.
51. "Caged polymer crystallization in perforated layers," Contributed poster at APS National Meeting, Seattle, WA, March 12, 2001.
52. "Hard and soft confinement effects on polymer crystallization in microphase separated cylinder-forming PEO-*b*-PS/PS blends," Contributed poster at North-Coast Thermal Analysis Society, Cleveland, OH, March 15, 2001.
53. "Hexagonally perforated layer phase formed under plastic deformation" Contributed oral presentation at APS National Meeting, Indianapolis, IN, March 21, 2002.
54. "Dislocation-controlled hexagonally perforated layer phase in a PEO-*b*-PS diblock copolymer" Contributed oral presentation at ACS National Meeting, Orlando, FL, April 10, 2002.
55. "Hard and soft confinement effects on nano-confined polymer crystallization in cylindrical mesophases" Contributed oral presentation at IUPAC Macro2002 Meeting, Beijing, China, July 10, 2002.
56. "Hexagonally perforated layer phase formed by plastic deformation in a self-assembled PEO-*b*-PS diblock copolymer" Contributed oral presentation at *International Polymer Physics Conference 2002*, Qingdao, China, July 3, 2002.
57. "Hard and soft confinement effects on nano-confined polymer crystallization in cylindrical mesophases" Contributed oral presentation at 30th NATAS Meeting, Pittsburg, PA, Sept. 22-25, 2002.
58. "Comparison of crystallization kinetics in various nano-confinement environments" Contributed oral presentation at the APS meeting, Austin, TX, Mar. 3-7, 2003.
59. "Comparison of Crystallization Kinetics in Various Nano-confined Environments," Contributed talk at 226th ACS National Meeting, New York, NY, September 11, 2003.
60. "Crystallization in Various Nano-confined Environments," Contributed poster at the European Discussion Meeting on Polymer Physics, Waldau, Germany, Sept. 24-27, 2003.
61. "Complex Transformations between Bicontinuous Cubic and Cylinder Phases in a Polystyrene-*block*-Poly(ethylene oxide) Diblock Copolymer," contributed poster at APS meeting, Montreal, QC, Canada, March 22, 2004.
62. "Self-assembly Behavior and Crystallization of a Low Molecular Weight Double Crystalline Polyethylene-*block*-Poly(ethylene oxide) Diblock Copolymer," contributed talk at APS meeting, Montreal, QC, Canada, March 25, 2004.

63. "Self-assembly and Crystallization Behavior in Amphiphilic Star Unimicelles," contributed talk at the 4th New England Polymer Workshop, University of Vermont, Burlington, VT, July 24, 2004.
64. "Complex Transformations between Bicontinuous Cubic and Cylinder Phases in a Polystyrene-*block*-Poly(ethylene oxide) Diblock Copolymer," contributed poster at Gordon Research Conference - Polymer Physics, Connecticut College, New London, CT, August 4, 2004.
65. "Self-assembly and crystalline morphology in polyethylene and poly(ethylene oxide) copolymers," contributed talk at the 228th ACS national meeting, Philadelphia, PA, August 26, 2004.
66. "Epitaxial phase transformation between cylindrical and double gyroid mesophases," contributed oral presentation at 2004 Fall MRS Meeting, Boston, MA, November 29, 2004.
67. "Molecular Architecture Induced Chain-Folding in Polymeric Amphiphilic Unimolecular Micelles," contributed talk, (with J. Miao, G. Xu, L. Tian, K. E. Uhrich, B.S. Hsiao, C.A. Avila-Orta), 2005 APS Meeting, Los Angeles, CA, March 25, 2005.
68. "Confined Discotic Liquid Crystalline Self-Assembly in a Novel Coil-Coil-Disk Triblock Oligomer," contributed talk, 230th ACS national meeting, Washington, DC, August 30, 2005.
69. "Ionic Complex Formed by DNA and Asymmetric Triphenylene Salts," contributed poster at MRS 2005 Fall meeting, Boston, MA, Nov. 29, 2005.
70. "Spacer Length Controlled Lamello-Columnar to Oblique-Columnar Mesophase Transition in Liquid Crystalline DNA - Discotic Cationic Lipid Complexes," contributed talk at APS national meeting, Baltimore, MD, March 16, 2006.
71. "Molecular Shape Directed Self-assembly in Cationic Lipid-DNA Complexes," poster presentation at 3M First Annual Science and Engineering Faculty Event, St. Paul, MN, June 21, 2006.
72. "Lamellar to Inverted Hexagonal Phase Transition in DNA Complexes with Calamitic, Discotic, and Cubic Shaped Cationic Lipids," contributed oral presentation at 232nd ACS National Meeting, San Francisco, CA, September 14, 2006.
73. "Lamellar to Inverted Hexagonal Phase Transition in DNA Complexes with Calamitic, Discotic, and Cubic Shaped Cationic Lipids," contributed poster (with L. Cui), MRS 2006 Fall meeting, Boston, MA, Nov. 27, 2006.
74. "Dielectric Breakdown Properties of Organic-Inorganic Polymer Nanocomposites," contributed poster (with L. Cui, A. Feldman¹, G. Saha¹, A. D. Asandei¹, C. Xu, and S. A. Boggs), MRS 2006 Fall meeting, Boston, MA, Nov. 27, 2006.
75. "Tailor-Made Onion-Like Stereocomplex Crystals in Incompatible Enantiomeric Polylactide Containing Block Copolymer Blends," contributed talk (with L. Sun, L. Rong, B. S. Hsiao), APS national meeting, Denver, CO, March 7, 2007.
76. "Supramolecular Self-Assembly in a Disk-Cube Dyad Molecule Based on Triphenylene and Polyhedral Oligomeric Silsesquioxane (POSS)," contributed poster (with L. Cui and J. P. Collet), 234th ACS meeting, Boston, MA, August 21, 2007.
77. "Self-Assembly and Chain-Folding in Hybrid Coil-Coil-Cube Triblock Oligomers of Polyethylene-*b*-Poly(ethylene oxide)-*b*-Polyhedral Oligomeric Silsesquioxane," contributed talk (with L. Cui and J. Miao), APS national meeting, New Orleans, LS, March 11, 2008.
78. "Self-Assembled Biodegradable Block Copolymers as Potential Delivery Systems," contributed sound-bites at 34th New England Complex Fluids Conference, Yale University, New Haven, CT, March 21, 2008.
79. "Mesophase transformations in a DNA complex with cationic polyhedral oligomeric silsesquioxane lipid," contributed talk with (L. Cui and D. Chen), 236th ACS National Meeting, Philadelphia, PA, August 20, 2008.

Presentations by Students and Postdocs

80. "Immobilization of PTA in Nafion[®] Membranes and Their Application in high Temperature Fuel Cell," poster presentation, (with Y. Liu and J.M. Fenton), First International Conference on Fuel Cell Development and Deployment, University of Connecticut, Storrs, CT, March 7-10, 2004.

81. "Forced Polymer Chain Folding in Amphiphilic Unimolecular Micelles," contributed poster, (with J. Miao, B.S. Hsiao, C.A. Avila-Orta, L. Tian, and K.E. Uhrich), Gordon Research Conference - Polymer Physics, Connecticut College, New London, CT, August 4, 2004.
82. "Two-step De-intercalation and Intercalation Induced by Polymer Crystallization and Melting in Poly(ethylene oxide)/Organoclay Nanocomposites," contributed poster, (with L. Sun, E. Ertel, J. Miao, B.S. Hsiao, C.A. Avila-Orta, and I. Sics), Gordon Research Conference - Polymer Physics, Connecticut College, New London, CT, August 4, 2004.
83. "Self-assembly and crystalline morphology in polyethylene and poly(ethylene oxide) copolymers," contributed talk, (with L. Sun, Y. Liu, B.S. Hsiao, C.A. Avila-Orta), 228th ACS national meeting, Philadelphia, PA, August 26, 2004.
84. "Forced polymer chain folding in amphiphilic unimolecular micelles," contributed poster, (with J. Miao, L. Tian, K.E. Uhrich, C.A. Avila-Orta, B.S. Hsiao), 228th ACS national meeting, Philadelphia, PA, August 24, 2004.
85. "Two-step de-intercalation and intercalation induced by polymer crystallization and melting in poly(ethylene oxide)/organoclay nanocomposites," contributed poster, (with L. Sun, E. Ertel, J. Miao, B.S. Hsiao, C.A. Avila-Orta), 228th ACS national meeting, Philadelphia, PA, August 24, 2004.
86. "Epitaxial phase transformation between cylindrical and double gyroid mesophases," contributed oral presentation, (with L. Sun, J. Miao, L. Cui, Ge, Q.; Quirk, R. P.; Xue, C.; Cheng, S. Z. D.; Hsiao, B. S.; Avila-Orta, C. A.; Sics, I.; Cantino, M. E.), 2004 Fall MRS Meeting, Boston, MA, November 29, 2004.
87. "Forced polymer chain folding in amphiphilic unimolecular micelles," contributed poster, (with J. Miao, L. Tian, K.E. Uhrich, C.A. Avila-Orta, B.S. Hsiao), 2004 Fall MRS Meeting, Boston, MA, November 29, 2004.
88. "Reversible de-intercalation and intercalation induced by polymer crystallization and melting in poly(ethylene oxide)/organoclay nanocomposites," contributed poster, (with L. Sun, E. Ertel, J. Miao, B.S. Hsiao, C.A. Avila-Orta), 2004 Fall MRS Meeting, Boston, MA, November 29, 2004.
89. "Confined Discotic Liquid Crystalline Self-Assembly in a Novel Coil-Coil-Disk Triblock Oligomer," contributed talk, (with L. Cui, J. Miao, B.S. Hsiao, I. Sics), 2005 APS Meeting, Los Angeles, CA, March 22, 2005.
90. "Can short alkyl chain fold in lamellar crystals?" contributed poster, (with J. Miao, L. Cui, B.S. Hsiao, I. Sics), 2005 APS Meeting, Los Angeles, CA, March 22, 2005.
91. "Reversible de-intercalation and intercalation induced by polymer crystallization and melting in poly(ethylene oxide)/organoclay nanocomposites," contributed poster, (with L. Sun, E. Ertel, J. Miao, B.S. Hsiao, C.A. Avila-Orta), 2005 Polymer Graduate Conference, Amherst, MA, June 16, 2005.
92. "Molecular architecture induced chain-folding in polymeric amphiphilic unimolecular micelles," contributed poster, (with J. Miao, L. Tian, K.E. Uhrich, C.A. Avila-Orta, B.S. Hsiao), 2005 Polymer Graduate Conference, Amherst, MA, June 16, 2005.
93. "Development of Nafion[®]/SiO₂/phosphotungstic acid nanocomposite membranes for high temperature proton exchange membrane fuel cells," contributed talk, (with Y. Liu, H. Kunz, J. Fenton), 2005 Polymer Graduate Conference, Amherst, MA, June 16, 2005.
94. "Total RNA dispersed single-walled carbon nanotubes," contributed talk, (with J. Miao, L. Zhang, P. Baker, M. Aindow, M. Cantino), 230th ACS national meeting, Washington, DC, August 29, 2005.
95. "Ionic interaction induced high-order lamello-columnar phases in asymmetric discotic triphenylene salts," contributed talk, (with L. Cui), 230th ACS national meeting, Washington, DC, August 29, 2005.
96. "Development of Nafion[®]/SiO₂/phosphotungstic acid nanocomposite membranes for high temperature proton exchange membrane fuel cells," contributed talk, (with Y. Liu, H. Kunz, J. Fenton), 230th ACS national meeting, Washington, DC, August 29, 2005.

97. "Total RNA Dispersed Single-Walled Carbon Nanotubes," contributed poster, (with J. Miao, L. Zhang, P. S. Baker, M. Aindow and M. E. Cantino), 2005 Fall MRS meeting, Boston, MA, November 29, 2005.
98. "Ionic Complex Formed by DNA and Asymmetric Triphenylene Salts," contributed poster, (with L. Cui and J. Miao), 2005 Fall MRS meeting, Boston, MA, November 29, 2005.
99. "Stereocomplex Formation in Incompatible Racemic Chiral Polylactide Block Copolymers," contributed poster, (with L. Sun), 2005 American Physics Society meeting, Baltimore, MD, March 13, 2006.
100. "Phase morphology of a disk-sphere dyad molecule," contributed talk, (with L. Cui and J. P. Collet), 2005 American Physics Society meeting, Baltimore, MD, March 16, 2006.
101. "Spacer Length Controlled Lamello-Columnar to Oblique-Columnar Mesophase Transition in Liquid Crystalline DNA - Discotic Cationic Lipid Complexes," contributed talk, (with L. Cui and J. Miao), at APS national meeting, Baltimore, MD, March 16, 2006.
102. "Spacer Length Controlled Oblique-Columnar to Lamello-Columnar Mesophase Transitions in Liquid Crystalline DNA-Discotic Cationic Lipid Complexes," contributed poster, (with L. Cui and J. Miao), 232nd ACS National Meeting, San Francisco, CA, September 12, 2006.
103. "Synthesis and Characterization of Polyethylene-*b*-Poly(ethylene oxide)-*b*-Polyhedral Oligomeric Silsesquioxane (POSS) Triblock Copolymers," contributed poster, (with J. Miao and L. Cui), 232nd ACS National Meeting, San Francisco, CA, September 12, 2006.
104. "Synthesis and Characterization of Polyethylene-*b*-Poly(ethylene oxide)-*b*-Polyhedral Oligomeric Silsesquioxane (POSS) Triblock Oligomers," contributed poster, (with J. Miao, and L. Cui), MRS 2006 Fall meeting, Boston, MA, Nov. 27, 2006.
105. "Phase Behavior and Morphology of Immiscible Enantiomeric Polylactide Block Copolymers and Their Stereocomplexes," contributed poster (with L. Sun, I. Sics, L. Rong, and B. S. Hsiao), MRS 2006 Fall meeting, Boston, MA, Nov. 27, 2006.
106. "Phase Transitions and Honeycomb Morphology in an Incompatible Blend of Enantiomeric Polylactide Block Copolymers," contributed poster (with L. Sun, L. Rong, B. S. Hsiao), APS national meeting, Denver, CO, March 5, 2007.
107. "Self-Organization and Chain-Folding in Hybrid Coil-Coil-Cube Triblock Oligomers of Polyethylene-*b*-Poly(ethylene oxide)-*b*-Polyhedral Oligomeric Silsesquioxane (POSS)," contributed poster (with J. Miao and L. Cui), APS national meeting, Denver, CO, March 7, 2007.
108. "Miscibility and crystallization behaviors of PEO and PLA, PLLA or PLLA/PDLA stereocomplex blends," contributed poster (with W. Cao and L. Sun), 234th ACS meeting, Boston, MA, August 21, 2007.
109. "Crystal Size Effect on Dielectric Property of PVDF at High Electric Field and Its Effect on Energy Storage and Discharging Behaviors," contributed poster (with F. Guan, J. Wang, and S. A. Boggs), APS national meeting, New Orleans, LS, March 10, 2008.
110. "Reducing Dielectric Loss by PVDF-CTFE Graft Copolymers," contributed poster (with Z. Yuan, J. Wang, F. Guan, and S. A. Boggs), APS national meeting, New Orleans, LS, March 10, 2008.
111. "Synthesis and Self-Assembly of Amphiphilic Protoporphyrin-Based Oligomers," contributed poster (with J. Miao), APS national meeting, New Orleans, LS, March 12, 2008.
112. "Synthesis and Self-assembly of Asymmetric Amphiphilic Discotic Oligomer based on Protoporphyrin," contributed poster with (J. Miao, L. Rong, and B. S. Hsiao), 236th ACS National Meeting, Philadelphia, PA, August 19, 2008.
113. "Reducing Dielectric Loss in PVDF-CTFE-*g*-PS Graft Copolymers," contributed poster with (Z. Yuan, J. Wang, F. Guan, and S. A. Boggs), 236th ACS National Meeting, Philadelphia, PA, August 19, 2008.
114. "Chirality Effect on Interaction Parameters in Poly(ethylene-*co*-1-butene)-*b*-polylactide Diblock Copolymers," contributed poster with (W. Cao, L. Sun, L. Rong, and B. S. Hsiao), 236th ACS National Meeting, Philadelphia, PA, August 19, 2008.