Jihua Chen

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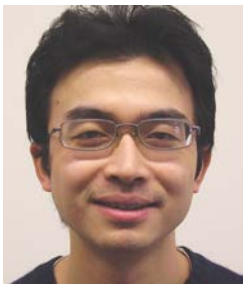

Education

Beijing Univ. of Aeronautics & Astronautics, China	Polymers and Composites	B.S., 1997
Clemson University, SC	Textiles, Fiber, and Polymer Sci.	M.S., 2002
University of Michigan–Ann Arbor, MI	Macromolecular Sci. and Engr.	Ph.D., 2006

Professional Experience

2011–p Research Staff, Chemical Functionality Group, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory

2009–2011 Postdoctoral Research Associate, Macromolecular Nanomaterials Group, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory

2007–2009 Postdoctoral Research Associate, Chemical Engineering and Materials Science, University of Minnesota at Twin Cities

Professional and Synergistic Activities

2008–p Manuscript Reviewer, *Journal of Materials Chemistry; Chemical Communications; Crystal Engineering Communications; Physical Chemistry Chemical Physics; Polymer Chemistry*; *IEEE Electron Device Letter; Dalton Transactions; Nanoscale; Soft Matter; Synthetic Metals; Chemical Society Review*

Honors and Awards

2005 Charles Overberger Award for Excellence in Research, University of Michigan
2004 High Resolution Electron Microscopy Winter School Scholarship, Arizona State University
2002 Huntsman Chemical Corp. Award for Academic Excellence, University of Michigan
1998 Guanghua Scholarship, Beijing University of Aeronautics and Astronautics, China

Publications (23 articles in refereed journals as of Aug, 2012)
Full Publication list follows CV.

Research Synopsis

1. ***Solid Copolymer Electrolytes***
   We aim to optimize lithium ion conduction in novel copolymer electrolytes for lithium ion batteries and high-*k* dielectrics.
2. ***Assembly and Electrical Properties of Polymeric and Organic Semiconductors***
   We study the structure-property relationships in conjugated block copolymer, conjugated polymer brush, and organic semiconductors for applications such as organic solar cell and thin film transistor
3. ***Soft Material TEM***
   We apply low-dose high-resolution TEM and low-dose electron diffraction techniques to crystalline organic materials. We are also interested in energy filtered TEM, EELS, and EDX of novel polymeric or hybrid nanostructures in thin film, bulk and solution.

Collaborations: J. Anthony (University of Kentucky); Z. Bao (Stanford); A. Briseno (University of Massachusetts); M. Dadmun (University of TN-Knoxville); D. Li (University of Alabama); S. M. Kilbey, II (ORNL); K. Hong (ORNL); J. Huang (ORNL); J. Mays (University of TN-Knoxville); P. Sonar (IMRE, Singapore); B. Sumpter (ORNL); K. Xiao (ORNL)

Graduate and Postdoctoral Advisors:
Graduate Advisor: Prof. David C. Martin (University of Michigan at Ann Arbor, now at University of Delaware)
Postdoctoral Advisors: Profs. C. Daniel Frisbie and Frank S. Bates (University of Minnesota at Twin Cities)

Thesis Advisor and Postgraduate-Scholar Sponsor:

Total Graduate Students Advised: 0
Total Postdoctoral Scholars Advised: 0

PUBLICATIONS

Jihua Chen
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M. Clay, Q. Cui, Y. Sha, J. Chen, A. J. Rondinone, Z. Wu, J. Chen, and Z. Gu, "Galvanic Synthesis of Bi-modal Porous Metal Nanostructures Using Aluminum Nanoparticle Templates," *Materials Letters*, In Press (2012).

P. Sonar, J. Zhou, L. Zhao, K. Lim, J. Chen, A. J. Rondinone, S. P. Singh, L. Chua, P. K. Ho, and A. Dodabalapur, "Furan Substituted Diketopyrrolopyrrole and thienylenevinylene based low band gap copolymer for high mobility organic thin film transistors," *Journal of Materials Chemistry* **22**, 17284 (2012).

L. Cai, J. Chen, A. J. Rondinone, and S. Wang, "Injectable and Biodegradable Nanohybrid Polymers with Simultaneously Enhanced Stiffness and Toughness for Bone Repair," *Advanced Functional Materials* **22**, 3181 (2012).

Z. He, J. Chen, Z. Z. Sun, G. Szulczewski, and D. Li, "Air-Flow Navigated Crystal Growth for TIPS Pentacene-Based Organic Thin Film Transistors," *Organic Electronics* **13**, 1819 (2012).

J. Chen, X. Yu, K. Hong, J. M. Messman, D. L. Pickel, K. Xiao, M. Dadmun, J. W. Mays, A. J. Rondinone, B. G. Sumpter, and S. M. Kilbey II, "Ternary Behavior and Systematic Nanoscale Manipulation of Domain Structures in P3HT/PCBM/P3HT-b-PEO Films," *Journal of Materials Chemistry* **22**, 13013 (2012). *(Inside Front Cover)*

X. Wang, J. Chen, K. Hong, J. W. Mays, "Well-Defined Polyisoprene-b-Poly(acrylic acid)/Polystyrene-b-Polyisoprene-b-Poly(acrylic acid) Block Copolymers: Synthesis and Their Self-Assembled Hierarchical Structures in Aqueous Media," *ACS Macro Letters* **1**, 743 (2012).

J. Alonzo, J. Chen, J. Messman, X. Yu, K. Hong, S. Deng, O. Swader, M. Dadmun, J. F. Ankner, P. Britt, J. W. Mays, M. Malagoli, B. G. Sumpter, J. Bredas, and S. M. Kilbey II, "Assembly and Characterization of Well-Defined High-Molecular-Weight Poly(p-phenylene) Polymer Brushes," *Chemistry of Materials* **23**, 4367 (2011).

W. Chen, T. Xu., F. He, W. Wang, C. Wang, J. Strzalka, Y. Liu, J. G. Wen, D. J. Miller, J. Chen, K. Hong, L. Yu, and S. B. Darling, "Hierarchical Nanomorphologies Promote Exciton Dissociation in Polymer/Fullerene Bulk Heterojunction Solar Cells," *Nano Letters* **11**, 3707 (2011).

Z. He, K. Xiao, W. Durant, D. K. Hensley, J. E. Anthony, K. Hong, S. M. Kilbey, J. Chen, and D. Li, "Enhanced Performance Consistency in Nanoparticle/TIPS Pentacene-Based Organic Thin Film Transistors," *Advanced Functional Materials* **19**, 3617 (2011).

Z. Sun, K. Xiao, J. K. Keum, X. Yu, K. Hong, J. Browning, I. N. Ivanov, J. Chen, J. Alonzo, D. Li, B. G. Sumpter, E. A. Payzant, C. M. Rouleau, and D. B. Geohegan, "PS-b-P3HT Copolymers as P3HT/PCBM Interfacial Compatibilizers for High Efficiency Photovoltaics," *Advanced Materials* **23**(46), 5529 (2011).

X. Yu, K. Xiao, J. Chen, N. V. Lavrik, K. Hong, B. G. Sumpter, and D. B. Geohegan, "High-Performance Field-Effect Transistors Based on Polystyrene-b-Poly(3-hexylthiophene) Diblock Copolymers," *ACS Nano* **5**, 3359 (2011).

J. Chen, C. D. Frisbie, and F. S. Bates, "Lithium Perchlorate-Doped Poly(styrene-b-ethylene oxide-b-styrene) Lamellae-Forming Triblock Copolymers as High Capacitance, Smooth, Thin Film Dielectrics," *Journal of Physical Chemistry C* **113**, 3903 (2009).

J. Chen, C. K. Tee, M. Shtein, J. E. Anthony, and D. C. Martin, "Grain-Boundary Limited Charge Transport in Solution-Processed 6,13 bis(tri-isopropylsilylethynyl) pentacene Thin Film Transistors," *Journal of Applied Physics* **103**, 114513 (2008).

J. Chen, C. K.Tee, M. Shtein, D. C. Martin, and J. E. Anthony, "Controlled Solution Deposition and Systematic Study of Charge Transport Anisotropy in Single Crystal and Single-Crystal Textured TIPS Pentacene Thin Films," *Organic Electronics* **10**, 696 (2009).

J. Chen, S. Subramanian, S. R. Parkin, M. Siegler, K. Gallup, C. Haughn, J. E. Anthony, and D. C. Martin, "The Influences of Side Chains on the Structures and Properties of Functionalized Pentacenes," *Journal of Material Chemistry* **18**, 1961 (2008). *(Front Cover)*

J. Chen, C. K. Tee, J. Yang, C. Shaw, M. Shtein, J. E. Anthony, and D. C. Martin, "Thermal and Mechanical Cracking in Bis(triisopropylsilylethnyl) Pentacene Thin Films," *Journal of Polymer Science B: Polymer Physics* **46**, 1878 (2008).

J. Chen, J. E. Anthony, and D. C. Martin, "Morphology and Molecular Orientation in Thin-film Bis(triisopropylsilylethynyl) Pentacene," *Journal of Materials Research* **22**, 1701 (2007).

B. C. Chun, T. K. Cho, M. H. Chong, Y. C. Chung, J. Chen, D. C. Martin, and R. C. Cieslinski, "Mechanical Properties of Polyurethane/Montmorillonite Nanocomposite Prepared by Melt Mixing," *Journal of Applied Polymer Science* **106**, 712 (2007).

B. C. Chun, T. K. Cho, M. H. Chong, Y. C. Chung, D. C. Martin, J. Chen, and J. S. Park, "Microstructure and Mechanical Properties of Polyurethane/ Nylon/ Montmorillonite Nanocomposite," *Fibers and Polymers* **8**, 43 (2007).

P. B. Shea, C. Chen, J. Kanicki, L. R. Pattison, P. Petroff, J. Chen, and D. C. Martin, "Solution-Processed Copper Tetrabenzoporphyrin Thin-Film Transistors," *Synthetic Metals* **157**, 190 (2007).

J. Chen, J. E. Anthony, and D.C. Martin, "Thermally Induced Solid-state Phase Transition of Bis(triisopropylsilylethynyl) Pentacene Crystals," *Journal of Physical Chemistry B* **110**, 16397 (2006).

J. Chen, C. K. Tee, J. Yang, C. Shaw, M. Shtein, J. E. Anthony, and D. C. Martin, "Thermal and Mechanical Cracking in Bis(triisopropylsilylethnyl) Pentacene Thin Films," *Journal of Polymer Science B: Polymer Physics* **44**, 3631 (2006).

D. C. Martin, J. Chen, J. Yang, L. F. Drummy, and C. Kübel, "High Resolution Electron Microscopy of Ordered Polymers and Organic Molecular Crystals: Recent Developments and Future Possibilities," *Journal of Polymer Science B: Polymer Physics* **43**, 1749 (2005). *(Highlight Article)*