

PHILLIP FRANKLIN BRITT

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EDUCATION:

- 1988 Ph.D. Organic Chemistry, The University of Texas at Austin, Austin, Texas (with Marye Anne Fox)
- 1982 BS Cum Laude, Chemistry, James Madison University, Harrisonburg, Virginia

PROFESSIONAL EXPERIENCE:

- 2006 Director of the Chemical Sciences Division, ORNL
- 2005-08 Leader Macromolecular Nanomaterials, Center for Nanophase Materials Sciences, ORNL
- 2001 Senior R&D Staff, Physical Organic Chemistry Group, Chemical Sciences Division, ORNL
- 1997 Research Staff II, Physical Organic Chemistry Group, Chemical & Analytical Sciences Division
- 1992 Research Staff I, Coal Chemistry Group, Chemistry Division
- 1988 Research Associate III, Coal Chemistry Group, Chemistry Division
- 1982-87 Teaching and Research Staff, Chemistry Department, The University of Texas at Austin.

PROFESSIONAL ACTIVITIES:

- 2014-16 Alternate Councilor, ACS Division of Energy and Fuels
- 2011-13 Chair-Elect/Chair of the East Tennessee Section of the American Chemical Society
- 2007 - pres Board of Visitors, Department of Chemistry, University of Tennessee, Knoxville
- 2007-09 Chair-Elect and Chair Gordon Conference on Hydrocarbon Resources
- 2005 Session Leader, NNI Workshop "X-rays and Neutrons: Essential Tools for Nanoscience Research"
- 2005-13 Director at Large, American Chemical Society, Division of Fuel Chemistry
- 2001-10 Editorial Advisory Board - *Fuel*
- 2001-03 Chair-Elect/Chair, American Chemical Society, Division of Fuel Chemistry
- 2000 Guest Editor *J. Anal. and Appl. Pyrolysis*; Special Issue on Pyrolysis Fundamentals
- 2000-02 ORNL Laboratory Directed R&D Proposal Review Panel
- 1999 Program Site Review, Pacific Northwest Laboratory, DOE/Basic Energy Sciences
- 1998-00 Treasurer, ACS Division of Fuel Chemistry
- 1997-98 Secretary, East Tennessee Section of the ACS
- 1996-07 Editorial Advisory Board - *Journal of Analytical and Applied Pyrolysis*

SYMPOSIA:

- 1997-2009 Co-Organized 9 Symposia at the ACS National meetings in the Division of Fuel Chemistry
- 2009 *Chemistry of Renewable Fuels and Chemicals*, Washington, DC, August 16-20
- 2005 *Reaction Mechanisms in Fuel Processing*, San Diego, CA, March 13-17.
- 2004 *Chemistry of Renewable Fuels and Chemicals*, Philadelphia, PA, August 22-26
- 2004 *Hydrogen Production, Storage, and Utilization*, Anaheim, CA., March 28-April 01
- 2003 *Reaction Pathways & Structure Property Relationships in Fuel Chemistry*, New York, September 7-11
- 2002 *Chemistry of Renewable Fuels and Chemicals*, Orlando, FL, April 1-4.
- 2001 *Reaction Mechanisms in Fuel Processing*, San Deigo, CA, April 1-5.
- 1999 *Chemistry of Renewable Fuels and Chemicals*, Anaheim, CA, March 21-25.
- 1997 *Reaction Mechanisms in Fuel Processing*, San Francisco, CA, April 13-17.

AWARDS:

- 2011 ACS Fellow
- 2010 R&D leadership at the Director level, UT-Battelle Awards Night
- 2008 Distinguished Service Award, ACS Division of Fuel Chemistry
- 2005 Finalist, Scientific Research, ORNL Awards Night
- 2000 Technical Achievement Award, Research Accomplishment, ORNL Awards Night
- 1997 Outstanding Publication Award, ORNL Awards Night
- 1994 and 1989 R. A. Glenn Award, ACS Division of Fuel Chemistry

RESEARCH INTERESTS:

Polymer synthesis and self-assembly, kinetics and mechanisms of organic reactions, radical and carbenium ion chemistry, pyrolysis of energy resources, polymer pyrolysis, molecular recognition, catalysis, organic reactions on surfaces (including self-assembled monolayers), carbon nanotube chemistry, organic and polymer photochemistry, and development of chemical sensors.

PUBLICATIONS: Selected from 110 publication and preprints

Hua, F.; Yuan, W.; Britt, P.F.; Mays, J.W.; Hong, K., "Temperature-induced phase-transitions of methoxyoligo(oxyethylene) styrene-based block copolymers in aqueous solution," *Soft Matt.* **2013**, *9*, 8897-8903.

Kintzel, Jr., E.J.; Kidder, M.K.; Buchanan, A.C.; Britt, P.F.; Mamontov, E.; Zamponi, M.; Herwig, K.W., "Dynamics of 1,3-Diphenylpropane Tethered to the Interior Pore Surfaces of MCM-41," *J. Phys. Chem. C* **2012**, *116*, 923-932.

Chen, J.; Dadmun, M.D.; Mays, J.W.; Messman, J.M.; Hong, K.; Britt, P.F.; Sumpter, B.G.; Alonzo Calderon, J.E.; Kilbey, II, S.M.; Ankner, J.F.; Bredas, J.L.E.; Malagoli, M.; Deng, S.; Swader, O.A.; Yu, X., "Assembly and Characterization of Well-Defined High-Molecular-Weight Poly(*p*-phenylene) Polymer Brushes," *Chem. Mater.* **2011**, *23*, 4367-4374.

Waksburg, A.; Nguyen, M.; Chaffee, A.L.; Kidder, M.K.; Buchanan, A.C.; Britt, P.F., "Molecular Dynamics Modelling of Tethered Organics in Confined Spaces," *Mol. Simulat.* **2011**, *37*, 1266-1275.

Britt, P. F.; Buchanan, A.C.; Kidder, M. K.; Beste, A.; Sumpter, B. G., "Experimental and Theoretical Investigations into the Pyrolysis Mechanisms of Lignin Model Compounds," Prepr. Pap.-ACS Div. Fuel Chem **2010**, *55* (2), 214-216.

Britt, P. F.; Buchanan, A.C.; Kidder, M. K., "Pyrolysis Mechanisms of Lignin Model Compounds," Prepr. Pap.-ACS Div Fuel Chem **2008**, *53* (1).

Uhrig, D; Hong, K.; Mays, J. W.; Kilbey, S. M.; Britt, P. F., "Synthesis and Characterization of an ABC Mikroarm Star Terpolymer of Cyclohexadiene, Styrene, and 2-Vinylpyridine" *Macromolecules* **2008**, *41*, 9480-9482.

Beste, A.; Buchanan, A. C., III; Britt, P. F.; Hathorn, B. C.; Harrison, R. J., "Ab initio study of hydrogen abstraction reactions on toluene and tetralin" *J. Mol. Struct.-Theochem.* **2008**, *851*, 232-241.

Beste, A.; Buchanan, A. C., III; Britt, P. F.; Hathorn, B. C.; Harrison, R. J., "Kinetic analysis of the pyrolysis of phenethyl phenyl ether: Computational prediction of alpha/beta-selectivities" *J. Phys. Chem. A* **2007**, *111*, 12118-12126.

Britt, P. F.; Kidder, M. K.; Buchanan, III, A. C. "Oxygen Substituent Effects in the Pyrolysis of Phenethyl Phenyl Ethers," *Energy Fuels* **2007**, *21*, 3102.

Rasheed, A.; Howe, J. Y.; Dadmun, M. D.; Britt, P. F. "The Efficiency of the Oxidation of Carbon Nanofibers with Various Oxidizing Agents," *Carbon* **2007**, *45*, 1072.

Kidder, M. K.; Britt, P. F.; Chaffee, A. L.; Buchanan, III, A. C. "Confinement Effects on Product Selectivity in the Pyrolysis of Phenethyl Phenyl Ether in Mesoporous Silica," *Chem. Commun.* **2007**, 52-54.

Rasheed, A.; Dadmun, M. D.; Ivanov, I. N., Britt, P. F.; Geohegan, D. B.; "Improving Dispersion of Single Walled Carbon Nanotube in a Polymer Matrix using Specific Interactions", *Chem. Mater.* **2006**, *18*, 3513-3522.

Jesse, S.; Guillorn, M. A.; Ivanov, I. N.; Puretzky, A. A.; Howe, J. Y.; Britt, P. F.; Geohegan, D. B., "In situ electric field-induced contrast imaging of electronic transport pathways in nanotube-polymer composites," *Applied Physics Letters* **2006** 89(1), 013114/1-013114/3.

Chung, I.-D.; Britt, P.; Xie, D.; Harth, E.; Mays, J. W., "Synthesis of Amino Acid-Based Polymers via Atom Transfer Radical Polymerization in Aqueous Media at Ambient Temperature," *Chem. Commun.* **2005**, 1046-1048.

Yun, S. I.; Terao, K.; Hong, K.; Melnichenko, Y. B.; Wignall, G. D.; Britt, P. F.; Mays, J. W. "Solution properties of 1,3-cyclohexadiene polymers by laser light scattering and small-angle neutron scattering" *Macromolecules* **2006**, 39, 897-899.

Kidder, M. K.; Britt, P. F.; Zhang, Z.; Dai, S.; Hagaman, E. W.; Chaffee, A. L.; Buchanan, III, A. C., "Pyrolysis of Mesoporous Silica-Immobilized 1,3-Diphenylpropane. Impact of Pore Confinement and Size," *J. Am. Chem. Soc.* **2005**, 127, 6353-6360.

Buchanan, III, A. C.; Kidder, M. K.; Britt, P. F., "Molecular Orientation Effects in a Surface-Confined, Free-Radical Reaction," *J. Phys. Chem. B* **2004**, 108, 16772-16779.

Pinnaduwege, L. L.; Thundat, T.; Hawk, J. E.; Hedden, D. L.; Britt, P. F.; Houser, E. J.; Stepnowski, S.; McGill, R. A.; Bubb, D., "Detection of 2,4-Dinitrotoluene using Microcantilever Sensors," *Sens. Actuators, B* **2004**, 99, 223-229.

Buchanan, III, A. C.; Kidder, M. K.; Britt, P. F. "Free Radical Reactions Under Diffusional Constraints. Orientation Does Matter in Hydrogen Transfer," *J. Am. Chem. Soc.* **2003**, 125, 11806-11807.

Schittenhelm, H.; Geohegan, D. B.; Jellison, G. E.; Puretzky, A. A.; Lance, M. J.; Britt, P. F. Synthesis and Characterization of Single-Walled Carbon Nanotube-Amorphous Diamond Thin-Film Composites. *Appl. Phys. Lett.* **2002**, 81, 2097-2099.

Austin, D. W.; Puretzky, A. A.; Geohegan, D. B.; Britt, P. F.; Guillorn, M. A.; Simpson M. L. "The electrodeposition of metal at metal/carbon nanotube junctions," *Chem. Phys. Lett.* **2002**, 361, 525-529.