

Michael G. Benton

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Education

Ph.D., 2007

Chemical Engineering, The University of Wisconsin, Madison, WI

M.S., August 2002

Chemical Engineering, The University of Alabama, Tuscaloosa, AL

B.S., May 1994

Biology, The University of South Carolina, Columbia, SC

Experience

Graduate Research Assistant, UW-Madison

“Using *Saccharomyces cerevisiae* as living biosensors for detecting DNA damage”

September 2002 – present

Graduate Research Assistant, University of Alabama

“Use of room temperature ionic liquids as environmentally-benign solvents for free radical polymerizations”

January 2001 – August 2002

Undergraduate Research Assistant, University of Alabama

“Effect of immobilized proteins on polymer gel structures used as drug delivery vehicles”

March 2000 – December 2000

Sales Manager, Best Buy Inc.

Hired and trained a sales staff of approximately 50 employees. Responsible for product, warranty, and accessory sales of \$20 million per year. Supervised approximately 100 employees. 1997-2000

Operations Manager, Sports and Recreation Inc.

Hired and trained a store staff of approximately 75 employees. Responsible for revenue and day to day operations of a \$5 million per year store. 1993-1997

Professional Memberships

American Chemical Society, Member PMSE

American Institute of Chemical Engineers

Tau Beta Pi Engineering Honor Society

Omega Chi Epsilon Chemical Engineering Honor Society

Publications

Brazel, C.S., A.M. Thornton, M. Garcia, M.G. Benton and M.J. Stoltz, "Unique Solution Behavior of Hydrogels based on Diethylaminoethyl Methacrylate," in preparation, to be submitted to *Polymer*.

Benton, M.G. and C.S. Brazel, "Effectiveness of Room Temperature Ionic Liquids as Replacements for Volatile Organic Solvents in Free Radical Polymerization," in Rogers, R.D. and K.R. Seddon, eds., *Ionic Liquids: Industrial Applications for Green Chemistry*, Washington, DC: American Chemical Society Symposium Series **818** (2002) 125-133.

Brazel, C.S., G.S. Maddox, M.F. Garcia, L.M. Savoy, M.G. Benton, and A.M. Thornton, "Fundamental Chemical Differences between Polyacidic and Polybasic Materials for the Design of pH-Responsive Systems," *Proceed. Intern. Symp. Control. Rel. Bioact. Mater.*, **29** (2002) #007

Scott, M.P., C.S. Brazel, M.G. Benton, J.W. Mays, J. D. Holbrey, and R.D. Rogers, "Application of Ionic Liquids as Plasticizers for Poly(methyl methacrylate)," *Chem. Comm.*, **2002** (2002) 1370-1371.

Brazel, C.S., Scott, M.P., M.G. Benton, and M. Rahman, "Plasticizing Effects of Imidazolium Salts in PMMA: High Temperature Stable Flexible Engineering Materials," in Rogers, R.D., and K.R. Seddon, eds. *Ionic Liquids as Green Solvents: Progress and Prospects*, Washington, DC: American Chemical Society Symposium Series, 856 (2003) 468-477.

Benton, M.G. and C.S. Brazel, "Comparison of Kinetics For Solution Polymerization of Poly(methyl methacrylate) in Green Ionic Liquid Solvents Versus Traditional Volatile Solvents," *Polym. Prepr.* 43 (2002) 881-882.

Rahman, M., M.G. Benton, M.P. Scott and C.S. Brazel, "Room Temperature Ionic Liquids as Environmentally Benign Plasticizers and Reaction Media for Polymerization Reactions," *Proceed. Green Chem. Eng. Conf.* **7** (2003) 180-183.

Benton, M.G. and C.S. Brazel, "An Investigation of the Degree and Rate of Polymerization of Poly(methyl methacrylate) in the Ionic Liquid 1-Butyl-3-Methylimidazolium Hexafluorophosphate," *Polymer International*, in press.

Patents

Brazel, C.S., M.P. Scott, M.G. Benton, M. Rahman, "Novel Class of Plasticizers based on Ionic Liquids," invention disclosure in preparation.

Research Presentations

Benton, M.G. and C.S. Brazel, "Effect of Immobilized Proteins on Polymer Gel Structures Used as Drug Delivery Vehicles," American Institute for Chemical Engineers National Conference- Biomimetic Materials Symposium, Los Angeles, CA, November 2000.

Benton, M.G. and C.S. Brazel, "Effectiveness of Room Temperature Ionic Liquids as Solvents for Free Radical Addition Polymerization," American Chemical Society, San Diego, CA, April 2001.

Benton, M.G. and C.S. Brazel, "Use of Room Temperature Ionic Liquids As Environmentally Benign Solvents for Free Radical Polymerizations," Air and Waste Management Association National Conference, Orlando, FL, June 2001.

Benton, M.G., M.P. Scott, J.D. Holbrey, R.D. Rogers, and C.S. Brazel, "A New Class of Plasticizing Agents: Room Temperature Ionic Liquids in Poly(methyl methacrylate) and Polystyrene," American Institute for Chemical Engineers National Conference, Structure and Properties of Polymers II (Crystals and Glasses) Session, Reno, NV, November 2001.

Benton, M.G. and C.S. Brazel, "The Feasibility of Room Temperature Ionic Liquids as Replacement Solvents in Free Radical Polymerization Reactions," American Institute for Chemical Engineers National Conference, Reno, NV, November 2001.

Scott, M.P., M.G. Benton, C.S. Brazel, and R.D. Rogers, "Ionic Liquids in Polymer Processing: Greener Solvent-Based Polymerizations and Improved Lifetime of Plasticized Materials," American Institute for Chemical Engineers National Conference, Reno, NV, November 2001, 1st Prize, Student Poster Presentations, Environmental Division.

Brazel, C.S., G.S. Maddox, M.F. Garcia, L.M. Savoy, M.G. Benton, and A.M. Thornton [invited]. "Fundamental Chemical Differences between Polyacidic and Polybasic Materials for the Design of pH-Responsive Systems," 29th International Symposium on Controlled Release of Bioactive Materials, Seoul, South Korea, July 2002.

Scott, M.P., M. Rahman, M.G. Benton, and C.S. Brazel, "Plasticizing Effects of Imidazolium Salts in PMMA: High and Low Temperature Stable Flexible Engineering Materials," invited talk, Ionic Liquids as Green Solvents: Progress and Prospects Session, Industrial and Engineering Chemistry Division, American Chemical Society Fall National Conference, Boston, MA, August 2002.

Benton, M.G. and C.S. Brazel, "Comparison of Kinetics for Solution Polymerization of PMMA in Green Ionic Liquid Solvents Versus Traditional Volatile Solvents," Green Polymer Chemistry Session, Polymer Chemistry Division, American Chemical Society Fall National Conference, Boston, MA, August 2002.

Benton, M.G., J.D. Holbrey, R.D. Rogers, J.W. Mays, and C.S. Brazel, "Ionic Liquids as Environmentally-Benign Solvents for Synthesis of PMMA in [bmim][PF6]: Kinetic, Thermal and Mechanical Analysis," AIChE Annual Meeting, Indianapolis, IN, November 2002.

Abstracts

Brazel, C.S. and M.G. Benton, "Effect of Immobilized Proteins on Polymer gel Structures Used as Drug Delivery Vehicles," *Extended Abstracts AIChE 2000 Annual Meeting*, AIChE, New York, NY, 2000.

Benton, M.G., M.P. Scott, J.D. Holbrey, R.D. Rogers, and C.S. Brazel, "A New Class of Plasticizing Agents: Room Temperature Ionic Liquids in Poly(methyl methacrylate) and Polystyrene," *Extended Abstracts AIChE 2001 Annual Meeting*, AIChE, New York, NY, 2001.

Benton, M.G. and C.S. Brazel, "The Feasibility of Room Temperature Ionic Liquids as Replacement Solvents in Free Radical Polymerization Reactions," *Extended Abstracts AIChE 2001 Annual Meeting*, AIChE, New York, NY, 2001.

Scott, M.P., M.G. Benton, C.S. Brazel, and R.D. Rogers, "Ionic Liquids in Polymer Processing: Greener Solvent-Based Polymerizations and Improved Lifetime of Plasticized Materials," *Extended Abstracts AIChE 2001 Annual Meeting*, AIChE, New York, NY, 2001.