Brent Dial

dialbe@ornl.gov
865-574-6255

Research Staff
Applied Technology Group
Chemical Science Division
Physical Science Directorate
Oak Ridge National Laboratory

Research Interests:
Superhydrophobic coatings, Conductive coating, Dielectric Material, Polymeric Material Characterization Supramolecular Chemistry, Molecular Recognition, Physical Organic Chemistry,

Professional Experience:

2007 – 2012	Graduate Researcher	University of South Carolina
2012 – 2015	Postdoctoral Appointee	Sandia National Laboratories
2015 – Present	Synthetic Organic Chemist	Oak Ridge National Laboratory

Education:

University of South Carolina	Chemistry	B.A. 2007
University of South Carolina	Organic Chemistry	Ph.D. 2012
Sandia National Labs	Postdoc Appointee	2012 - 2015

Activities/Affiliations:
AIChE member, Fluent in Portuguese, Member of American Chemical Society since 2008, Invited to write a book chapter on supramolecular polymers, SEAGEP Fellowship, AAPP scholar, Graduate Incentive Fellowship, L.I.F.E. Scholarship, SCAMP Scholarship, Copenhaver Scholar and Dean Honor's List at the University of South Carolina,

Publications

1. Dial, B. E.; Pinon, V.; Appellhans, L. A.; Anderson, B. D.; Dirk, S. M Study of the Dielectric and Mechanical Property of NT-PET. *Journal of Applied Polymer Science,* Submitted.

2. Hwang, J.; Dial, B. E.; Li, P.; Kozik, M. E.; Smith, M. D.; Shimizu, K. D. How Important are Dispersion Interactions to the Strength of Aromatic Stacking Interactions in Solution? *Chem. Sci.* **2015**, *5*, 4358.

3. Dial, B. E.; Pellechia, P. J.; Smith, M. D.; Shimizu, K. D. Proton Grease: An Acid Accelerated Molecular Rotor. *J. Am. Chem. Soc.* **2012**, Printed Online **DOI:** 10.1021/ja2120184.

4. Dial, B. E.; Shimizu, K. D. "Supramolecular Polymers" in *Applications of Supramolecular Chemistry*, Eds. Schneider, J. Taylor&Francis/CRC: New York, 2012; *March 2012*.

5. Chong, Y. S.; Dial, B. E.; Burns, G. W.; Shimizu, K. D. Covalent Locking and Unlocking of an Atropisomeric Molecular Switch. *Chem. Comm.* **2012**, *48*, 1296-1298.

6. Dial, B. E.; Rasberry, R. D.; Bullock, B. N.; Smith, M. D.; Pellechia, P. J.; Profeta, S. Jr; Shimizu, K. D. Guest-Accelerated Molecular Rotor. *Org. Lett.* **2011**, *13*, 244-247.

Presentations

1. Pinon, V.; Dial, B. E.; Dirk, S. M.; Anderson, B. J. Nitrated Poly(ethylene terephthalate) from Synthesis to

Extrusion. Presented at 7th Annual Postdoctoral Technical Showcase, Albuquerque, NM, December 2013; Poster.

2. Dial, B. E; Pinon, V; Dirk, S. M.; Anderson, B. J. Mechanical Strengthening of Poly(ethylene terephthalate) by Nitration. Presented at AIChE Annual Meeting, San Francisco, CA, November 2013; Oral.

3. Pinon, V.; Dial, B. E.; Dirk, S. M.; Anderson, B. J. Nitrated Poly(ethylene terephthalate) As a Dielectric Material for Capacitors. Presented at 25th Rio Grande Symposium on Advance Material, Albuquerque, NM, October 2013; Oral.

4. Dial, B. E; Pinon, V; Dirk, S. M.; Anderson, B. J. Mechanical Strengthening of PET by Nitration. Presented at 25th Rio Grande Symposium on Advance Material, Albuquerque, NM, October 2013; Oral.

5. Dial, B. E; Pinon, V; Dirk, S. M.; Anderson, B. J. Intrinsically Radiation Hardened NT-Mylar Dielectric Materials for WR Capacitors. Presented at Enhance Surveillance Conference at Sandia National Labs, Albuquerque, NM, April 2013; Poster.

6. Dial, B. E.; Shimizu, K. D. Controlling Molecular Motion via Guest Stimulated Molecular Rotors. Seminar at Columbia College, Columbia, SC, February **2012**, oral. (invited)

7. Dial, B. E.; Shimizu, K. D. Guest-Accelerated Molecular Rotors. Oakwood Products Graduate Student Poster Competition. Columbia, SC, February **2012**, poster.

8. Dial, B. E.; Shimizu, K. D. Controlling Rotational Motion on a Molecular Level. AAPP Workshop, Columbia, SC, March **2011**, oral. (invited)

9. Dial, B. E.; Rasberry, R. D.; Shimizu, K. D. Guest Catalyzed Molecular Rotor. SEAGEP Conference, Atlanta, GA, May **2010**, poster.

10. Dial, B. E.; Rasberry, R. D.; Shimizu, K. D. Mechanism of a Guest Catalyzed Molecular Rotor. 239th National Meeting of ACS, San Francisco, CA, March **2010**, Division Organic Chemistry, poster.

11. Dial, B. E.; Shimizu, K. D. Atropisomeric Colorimetric Chiral Sensor Based on Charge Transfer. SEAGEP Conference, Charleston, SC, May **2009**, poster.