

## GREGORY J. SZULCZEWSKI

Associate Professor of Chemistry, University of Alabama

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### Professional Preparation

University of Michigan	Chemistry	B.S., 1989
Wayne State University	Chemistry	Ph.D., 1995
University of Texas	Chemistry	Postdoctoral, 1995–1997

### Appointments

2003 – present Associate Professor of Chemistry, University of Alabama  
1997 – 2003 Assistant Professor of Chemistry, University of Alabama

### Honors and Awards

2008 - 2009 E. T. S. Walton Visitor Award (Trinity College Dublin, Ireland)  
2008 Outstanding Commitment to Students  
College of Arts and Sciences, University of Alabama  
1994 Daniel J. Trivish Award as outstanding physical chemistry graduate student at  
Wayne State University

### Five Publications Closely Related to This Proposal

- T. Xu, T. Morris, G. Szulczewski, R. R. Amaresh, Y. Gao, S. Street, L. Kispert, and R. M. Metzger, "A spectroscopic study of hexadecylquinolinium tricyanoquinodimeth-anide as a monolayer and in bulk" *J Phys. Chem. B* **106**: 10374 -10381 (2002).
- T. Xu, T. A. Morris, G. J. Szulczewski, R. M. Metzger, and M. Szablewski, "Current-Voltage characteristics of an LB monolayer of di-decylammonium tricyano-dimethanide measured between macroscopic gold electrodes", *The Journal of Materials Chemistry*. **12**: 3167-3171 (2002).
- R. M. Metzger, J. Baldwin, W. J. Shumate, I. R. Peterson, P. Mani, G. J. Mankey, T. Morris, G. Szulczewski, S. Bosi, M. prato, A. Comit, Y. Rrubin, "Electrical rectification in a Langmuir-Blodgett Monolayer of Dimethylanilino-azafullerene Sandwiched between gold electrodes", *J. Phys. Chem.* **107**: 1021-1027 (2003).
- J. C. Li, K.-Y. Kim, S. C. Blackstock, and G. J. Szulczewski, "Interfaces between metal and arylamine molecular films as probed with the anode interfacial engineering approach to single-layer organic diodes", *J. Phys. Chem.* **B 110**: 17493-17497 (2006).
- W. Xu, G. J. Szulczewski, P. LeClair, I. Navarrete, R. Schad, G. Miao, H. Guo, and A. Gupta "Tunneling Magnetoresistance Observed in  $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3$ /organic molecule/Co junctions", *App. Phys. Lett.* **90**: 072506 (2007).

### Five Other Significant Publications

- G. J. Szulczewski, T. D. Selby, K.-Y. Kim, J D. Hassenzahl, and S. C. Blackstock "Growth and characterixation of poly(arylamine) thin films prepared by vapor deposition", *J. Vac. Sci. Technol.* **A18**: 1875 - 1880 (2000).
- K.-Y. Kim, J. D. Hassenzahl, T. D. Shelby, G. J. Szulczewski, and S. C. Blackstock "Patterened Redox Arrays of ployarylamines II. Growth of thin films and their electrochemical behavior", *Chem. Mat.* **14**: 1691 - 1694 (2002).

- D. Liu, G. J. Szulczewski, L. D. Kispert, A. Primak, T. A. Moore, A. L. Moore, and D. Gust "A Thiol-Substituted Carotenoid Self-Assembles on Gold Surfaces", *J. Phys. Chem. B* **106**: 2933-2936 (2002).
- T. Morris and G. Szulczewski, "A spectroscopic ellipsometry, surface plasmon resonance and x-ray photoelectron spectroscopy study of Hg adsorption on gold surfaces", *Langmuir*. **18**: 2260 (2002).
- J. C. Li, K-Y. Kim, and G. Szulczewski, "Patterned Redox Arrays of Polyarylamines III. Effect of molecular structure and oxidation potential on film morphology and hole-injection in single-layer organic diodes", *Chem. Mater.* **16**: 4711-4714 (2004).

### **Synergistic Activities**

1. Present a lecture entitled "Electron Spectroscopy of Materials" to faculty from HBCU's attending the NSF sponsored workshop at the University of Alabama.
2. Director of Undergraduate Studies in Chemistry (2001-2006)
3. Mentor to 9 students in NSF supported REU programs.
4. Various NSF career proposal reviews.
5. Reviewed manuscripts for *Journal of Physical Chemistry*, *Surface Science*, *Journal of the American Chemical Society*, *Nature*, etc.

### **Collaborators**

Prof. Robert Metzger (U. Alabama, molecular electronics)  
 Prof. David Dixon (U. Alabama, quantum chemistry)  
 Prof. Patrick LeClair (U. Alabama, spin-polarized tunneling)  
 Prof. Michael Coey (Trinity College, organic spintronics)  
 Prof. James Gole (Georgia Tech., N-doped TiO<sub>2</sub> nanoparticles)

### **Graduate and Postdoctoral Advisors**

Prof. Robert J. Levis (Wayne State University)  
 Prof. J. Michael White (deceased) (University of Texas)

### **Postdoctoral Advisor to**

Dr. Jianchang Li (August 2001-August, 2004)

### **Graduate Advisor to**

Hollie Copeland (M.S. Dec. 1999, now at Southern Ionics)  
 Todd Morris (Ph.D. May 2004, now postdoctoral at NIST Gaithersberg)  
 Jia Sun (Ph.D. May 2005, now postdoctoral at Johns Hopkins)  
 Weihao Xu (Aug. 2003-present)  
 Jian Tang (Aug. 2003-present)  
 Jon Brauer (Jan. 2007-present)