The Macrogram

Hartford Chapter of the ASM International
Build on our Strengths - Leverage our Diversity - Network to Succeed

MONTHLY MEETING – TOPIC

March 16, 2010 – Joint Meeting with SPE
Topic: User-controlled Color Change Textile

Speakers: Dr. Gregory A. Sotzing
Professor Polymer and Organic Chemistry
University of Connecticut

Directions: Chuck's Steak House & Margarita Grill Mexican Cantina - 1428 Stafford Rd., Storrs Mansfield, CT, Ph: (860) 429-1900

Agenda:	**Program Charges:**
Cocktails: 5:30-6:30 PM	ASM Members - $28.00
Dinner: 6:30-7:30 PM	SPE Members - $25.00
Program: 7:30-8:30 PM	Retirees - $15.00
	Full Time Students - $15.00

Entrée Selections: (*Please specify*)

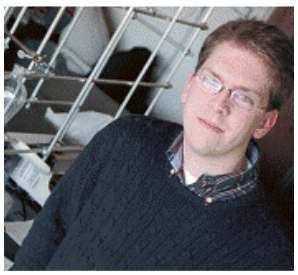
- ☑ **Prime Rib**
- ☑ **Chicken Teriyaki**
- ☑ **Burrito Roll**

Technical Chairperson: Rainer Hebert

Reservations: Call Linda at Service Steel Aerospace (860) 583-3336 *by noon March 11th*. Students contact Rainer Hebert (860) 486-3155. **Thanks!**

Abstract:
Electrochromics are materials that are able to undergo a color change upon the injection and removal of charge and have been explored for many different applications including auto-dimming rearview mirrors, windows, moonroofs, goggles, visors, and displays. Electrochromics offer user control compared to photochromics, such as those found in transition lenses. Controllable color change function in a textile could find numerous applications, particularly in home décor, automotive interior and fashion, to name a few. This presentation aims at educating the audience in electrochromic devices, going through the research parameters involved in optimizing each layer of the device, and conveying our recent research in the application of electrochromics to fabrics

Bio:



Gregory Sotzing received his PhD in Organic Chemistry in 1997 from the University of Florida and is presently a tenured Professor at the University of Connecticut in the Department of Chemistry and Polymer Program at the Institute of Materials Science. Greg obtained his Bachelors of Science degree at Mary Washington College, now named Mary Washington University, in Fredericksburg VA. Greg moved on from U.F. for a joint post-doc with Professor Robert Grubbs and Professor Nathan Lewis at the California Institute of Technology where he was involved in research on the use of conductive polymers and composites as detectors for an electronic nose with application toward explosives and disease detection.

In 1999, Greg established his research program at the University of Connecticut on optically transparent conductive polymers which was eventually commercialized primarily for use as a hole injection layer for light emitting diodes. In 2003, he was awarded an NSF CAREER for work involving low energy gap conjugated polymers and a means to convert processable precursor polymers in the solid state into conductive polymers. Activities outside the University have included, helping to establish a Science and Technology high school, the Putnam Science Academy (PSA) and the first Science Olympiads in the state of Connecticut and campaigning for a Science and Technology Charter school that would give underprivileged minorities a choice in education within the public school system.

From research efforts on how to make conductive polymers more processable and maintaining control of electrical and optical properties, Greg's research group has been able to electrospin polymer with electrochromic function. Greg anticipates that this could be used in the future for color changing fabric/wearable fabric displays. This research was carried by New Scientist, National Geographic, Discovery/TLC, NPR and public television. Greg has received a US-Europe collaborative NSF grant with Toribio F. Otero working with rapid generation of conductive polymer nanostructures and the study of ion diffusion within these structures during redox switching. With Toribio being a world expert in artificial muscles, the hope is to have conductive polymer fiber muscles that will both flex and change color upon charge injection/removal.

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