

2010
MRS



FALL
MEETING

Boston, MA • November 29–December 3

CALL FOR PAPERS

Abstract Deadline: June 22, 2010

REMINDER:
In fairness to all potential authors,
late abstracts will not be accepted.

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MRS Symposium HH: Polymer-based Smart Materials—Process, Properties, and Application

In recent years, a great number of research and development efforts have been dedicated to the field of polymer-based smart materials. Under external electrical stimuli, the smart materials exhibit different responses, such as mechanical, optical, and electronic/electrical responses. Therefore, these materials can convert the energy from one form to another. From a fundamental point of view, polymer-based smart materials exhibit some unique properties. From an application point of view, polymer-based smart materials are easy to process; and, more importantly, polymer-based smart materials can withstand high mechanical impact and are flexible so that various unconventional devices can be developed using these materials.

This symposium is designed to continue our effort to provide a platform for researchers from academia and industries to stimulate discussions and to present and discuss the recent research and commercial advances and needs. The symposium will focus on topics related to materials development, characterization, processing, manufacturing, analysis, design, and applications.

Session topics will include (but not be limited to):

- Process, property, and characterization of electromechanical polymers (including ferroelectric, piezoelectric, electrostrictive, and electrostatic polymers)
- Ionically activated electroactive polymers: polymer gels, IPMC, and conductive polymer
- Micro-, nano-, and molecular-scale polymers for sensors and actuators
- Polymer-based smart materials for MEMS/NEMS applications
- Design and characterization of polymer-based smart materials for biological, thermal, pressure, and mechanical sensors
- Polymers for dielectrics and insulation
- Polymer-based materials (including composites) for energy storage
- Characterization of space charge and polarization
- Electrets and ferroelectrets and their applications
- Shape-memory polymers
- Electrochromic polymers and their applications

A joint **tutorial** with Symposium II: *Polymer-Based Nanocomposites* is tentatively planned. Further information will be included in the MRS Program that will be available online in September.

Invited speakers include:

I. Anderson (Univ. of Auckland, New Zealand), **M. L. Auad** (Auburn Univ.), **F. Carpi** (Univ. of Pisa, Italy), **S. Ducharme** (Univ. of Nebraska, Lincoln), **R. Gerhard-Multhaupt** (Univ. of Potsdam, Germany), **R. Spontak** (North Carolina State Univ.), **J. H. Wendorff** (Philipps-Univ. Marburg, Germany), **Y. P. Wu** (Fudan Univ., China), **Y. L. Xu** (Xi'an Jiaotong Univ., China), and **Q. M. Zhang** (Pennsylvania State Univ.).

Symposium Organizers

Zhongyang Cheng

Auburn University, Materials Engineering,
275 Wilmore Laboratory, Auburn, AL 36849-5341
Tel 334-844-3419, Fax 334-844-3400, chengzh@eng.auburn.edu

Vivek Bharti

3M Company, 201-1W-28, 3M Center, St. Paul, MN 55144-1000
Tel 651-736-8057, Fax 651-737-5335, vbharti@mmm.com

Zhuo Xu

Xi'an Jiaotong University, Electronic Materials Research Laboratory,
710049 Xian, China
Tel 86-29-8266-8679, Fax 86-29-8266-8794, xuzhuo@mail.xjtu.edu.cn

Debra A. Wroblewski

Los Alamos National Laboratory, Materials Science and
Technology Division, Los Alamos, NM 87545
Tel 505-667-7250, Fax 505-667-8109, wroblewski@lanl.gov