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CALL FOR PAPERS

ABSTRACT DEADLINE: NOVEMBER 1, 2005

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

MRS Symposium S: Smart Nanotextiles

Beyond their protective and aesthetic functions, clothes, as our second skin, have the potential to acquire an additional functionality as a personalized and flexible information, sensing, and actuating platform. The need for functional garments and clothes is driven, e.g., by personal mobility, healthcare, or rehabilitation. Recent achievements in nanotechnologies will create a new momentum in textile research and manufacturing. The fundamental challenge in System-on-Textile design is that the drapability and manufacturability of textile and clothes remain widely unaffected when extending their functionality. On the other hand, the opportunities of nanoscale manipulation of textiles are by and large unexploited, e.g., making fiber conductivity sensitive to motion, temperature, light, humidity, or chemical environment; hardening fibers using carbon nanotubes; integrating optically responsive materials; or nanocoating materials to add antibacterial and/or hygienic functionality.

Submissions to this symposium will illustrate the spectrum of smart textiles by using nanotechnologies. Furthermore, applications place emphasis on the interdisciplinary approach between nanotechnology and textile design.

Specific topics of interest include, but are not limited to:

Materials

- Polymers
- Nanoparticles and nanotubes
- Conductive and semiconductive
- Modeling and simulation

Functionality

- Sensing and actuating
- Communication and information platform
- Environmental protection
- Energy harvesting and storage
- Antimicrobial and wound dressing
- Water and stain repellence
- Environmental protection and self cleaning

Applications

- Wellness and sport
- Healthcare
- Medication
- Prosthesis
- Rehabilitation
- Military and security
- Fashion

Invited speakers include: **Ray Baughman** (Univ. of Texas), **Danilo DeRossi** (Univ. of Pisa, Italy), **Ben Mattes** (Santa Fe Science & Technology, Inc.), **Eckhard Schollmeyer** (German Textile Research Ctr.), **Mohan Srinivasarao** (Georgia Inst. of Technology), and **Gordon Wallace** (Univ. of Wollongong, Australia).

Symposium Organizers

Dermot Diamond

Dublin City University, National Centre for Sensor Research
Adaptive Sensors Group, Dublin 9, Ireland
Tel 353-1-700-5404, Fax 353-1-700-7995, dermot.diamond@dcu.ie

Gerhard Tröster

ETH Zürich, Gloriastr. 35, CH-8092 Zurich, Switzerland
Tel 41-44-632-3964, Fax 41-44-632-1210, troester@ife.ee.ethz.ch

Xiaoming Tao

Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong
Tel 852-2766-6470, Fax 852-2954-2521, ttaoxm@polyu.edu.hk

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Materials Research Society

506 Keystone Drive, Warrendale, PA 15086-7573 • Tel 724-779-3003 • Fax 724-779-8313 • info@mrs.org