

# Preface

*MEMS and Nanotechnology*, collecting work comprising the **11<sup>th</sup> International Symposium on MEMS and Nanotechnology**, represents one of six tracks of technical papers presented at the Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, held at Indianapolis, Indiana, June 7-10, 2010. The full proceedings also include volumes on: Dynamic Behavior of Materials, Role of Experimental Mechanics on Emerging Energy Systems and Materials, Application of Imaging Techniques to Mechanics of Materials and Structures, Experimental and Applied Mechanics, along with the Symposium on Time Dependent Constitutive Behavior and Failure/Fracture Processes.

Each collection presents early findings from experimental and computational investigations on an important area within Experimental Mechanics. The current volume on *MEMS and Nanotechnology* includes studies on:

- Energy Harvesting and Scaling Effects
- Metrology and Standards in MEMS and Nanotechnology
- Carbon Nanotubes
- Friction and Tribology
- Meta-materials
- Optical Methods for MEMS and Nano
- Adhesion and Stiction
- Sensors and Actuators

Microelectromechanical systems (MEMS) and nanotechnology are revolutionary enabling technologies (ET). These technologies merge the functions of sensing, actuation, and controls with computation and communication to affect the way people and machines interact with the physical world. This is done by integrating advances in various multidisciplinary fields to produce very small devices that use very low power and operate in many different environments. Today, developments in MEMS and nanotechnology are being made at an unprecedented rate, driven by both technology and user requirements. These developments depend on micromechanical and nanomechanical analyses, and characterization of structures comprising nanophase materials.

To provide a forum for an up-to-date account of the advances in the field of MEMS and nanotechnology and to promote an alliance of governmental, industrial, and academic practitioners of ET, SEM initiated a *Symposium Series on MEMS and Nanotechnology*.

The 2010 Symposium is the eleventh in the series and addresses pertinent issues relating to design, analysis, fabrication, testing, optimization, and applications of MEMS and nanotechnology, especially as these issues relate to experimental mechanics of microscale and nanoscale structures.

It is with deep gratitude that we thank the organizing committee, session chairs, authors, participants, and SEM staff for making the 11th-*ISMAN* a valuable and unforgettable experience.

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