

Preface

MEMS and Nanotechnology, Volume 5: Proceedings of the 2013 Annual Conference on Experimental and Applied Mechanics represents one of eight volumes of technical papers presented at the SEM 2013 Annual Conference & Exposition on Experimental and Applied Mechanics organized by the Society for Experimental Mechanics and held in Lombard, IL, June 3–5, 2013. The complete Proceedings also includes volumes on: *Dynamic Behavior of Materials*; *Challenges in Mechanics of Time-Dependent Materials and Processes in Conventional and Multifunctional Materials*; *Advancement of Optical Methods in Experimental Mechanics*; *Mechanics of Biological Systems and Materials*; *Experimental Mechanics of Composite, Hybrid, and Multifunctional Materials*; *Fracture and Fatigue*; *Residual Stress, Thermomechanics & Infrared Imaging*, *Hybrid Techniques and Inverse Problems*.

Each collection presents early findings from experimental and computational investigations on an important area within Experimental Mechanics, MEMS and Nanotechnology being one of these areas.

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 2013 Symposium is the fourteenth 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 and Keynote Speakers, Participants, and SEM Staff for making the 13th-*ISMAN* a valuable and unforgettable experience.

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