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**Special Issue: ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Symposium on Modeling, Simulation and Control**

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# Special Issue: ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), Symposium on Modeling, Simulation and Control

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The ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS) was held from 8-10 September 2014 in Newport, Rhode Island. The scope of the Conference covers intelligent, flexible, adaptive materials and systems that respond to changes in the environment to perform in the most profitable way. Scientific strides and technological maturity in the field are linked to the interdisciplinary efforts at universities, government and industry. SMASIS aims at assembling world experts across engineering and scientific disciplines such as mechanical, aerospace, electrical, materials, and civil engineering, as well as biology, physics and chemistry, to discuss the latest findings and trends in this fruitful area of research.

As one of the 11 symposia at the ASME-SMASIS 2014, the Symposium on Modeling, Simulation and Control (MSC) was focused on the dynamic modeling, simulation, and control aspects of smart material systems and structures. Topical areas included: micro and macro level modeling, vibration and acoustic control, passive, semi-active and active control, linear and

nonlinear dynamics, vibration and smart energy management, and smart material applications. Nearly 50 technical presentations, including 2 invited talks, were given over the 11 sessions, specifically focused on modeling, analysis, control, design and characterization of active/passive dynamic and static structural systems in the presence of dissipative, gyroscopic, hysteretic, and nonlinear effects. Control of integrated systems consisting of structures coupled with advanced actuators, sensors, and processing was demonstrated through passive, active, and hybrid approaches. The Symposium catalyzed discussions on topics ranging from system level dynamics and control of adaptive structures to the development and modeling of new actuation and sensing techniques based on smart materials.

This special issue of the *Journal of Intelligent Material Systems and Structures* (JIMSS) contains a selection of 11 papers presented at the 2014 ASME SMASIS in the MSC Symposium. The papers highlight current research on the modelling, simulation, characterization of smart materials (primarily shape memory

materials and magneto-rheological materials) and control applications of devices based on these materials.

We would like to express our sincere appreciation to the Conference General Chair, Prof. Andrei Zagrai (New Mexico University), Conference Technical Chairs, Prof. Ralph Smith (North Carolina State University) and Prof. Michael Philen (Virginia Tech), for their efforts in organizing the Conference and providing an ideal environment for the Symposium. We also thank all of the authors who participated in the Symposium for their significant contributions and

especially those who made a supplementary effort to further expand their papers for this special issue. We are also grateful to the members of the Organizing Committee of the Symposium on Modeling, Simulation and Control for their time and effort. Finally, we would like to thank Prof. Daniel Inman, Editor-in-Chief of JIMSS, and Prof. Norman M. Wereley, Editor of JIMSS, for giving us the opportunity to publish this special issue and for their support and encouragement throughout its preparation.