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Jinsong Leng
Yoseph Bar-Cohen
In Lee
Jian Lu
Editors

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Introduction

The Third International Conference on Smart Materials and Nanotechnology was successfully held 5–8 December in Shenzhen. This unique conference offered many opportunities to communicate with colleagues from a variety of disciplines in universities, companies, factories, and governments from all over the world. As a premier event, this conference promised great excitement, inspiration, and benefits. The conference is the first in what we hope will be a series that encompasses and bridges the rapidly evolving smart materials and the cutting edge nanotechnology for varied applications.

In the last decade, a wide range of novel smart materials have been produced for aerospace, transportation, telecommunications, and domestic applications. Meanwhile, nanotechnology is rapidly developing, permitting control of matter at the level of atoms and molecules that would form the building blocks of smart materials. Thus the combination of these two fields provides many advantages, realizes novel designs that could not be achieved in traditional engineering, and offers greater opportunities as well as challenges.

The conference deals with the integration of smart materials and nanotechnology for applications ranging from bioengineering to photonics, with emphasis on the application in aerospace engineering. It also addresses and predicts novel developments in this field. Discussed were various topics including shape-memory alloys and polymers; electro-active polymers; (EAPs); piezo-materials; electro- and magneto-restrictive materials and fluids; fiber optic sensors; MEMS; sensors and actuators; thermo-electric materials; electro-chromic, photo-chromic, fluorescent, and phosphorescent materials; nanocomposites, and others.

We received about 450 abstracts in response to the call for submissions. Of these we invited authors of 260 abstracts to submit full papers. Eight plenary speakers and 32 keynote speakers were selected to inform and inspire the attendees. A total of 160 papers were presented in 32 oral sessions and 100 papers were presented in poster session.

We would like to take this opportunity to thank the organizing committee, the cooperating organizations, the international scientific committee and every attendee whose support, dedication, and cooperation make this event more exciting, inspiring, and fruitful. This SPIE volume would not have been possible without the support of many colleagues. First and foremost, we wish to express our appreciation for SPIE staff for giving us the opportunity to organize the proceedings with SPIE. Next we thank the reviewers who spent hours reviewing papers in the editorial process.

We hope all the participants benefited from this conference and it should be very interesting to see how the smart materials and nanotechnology field will be further developed at the Fourth International Conference on Smart Materials and Nanotechnology in Engineering in 2013.

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