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Masayoshi Tomizuka
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Introduction

This volume is a collection of technical papers presented at the 2011 SPIE Conference held in San Diego, California, on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems. This conference is unique in the emerging area of sensors and smart structures technologies because of its multidisciplinary representations from the aerospace, civil, and mechanical engineering communities. Participants were from more than 23 countries over the globe. The conference also served as the *de facto* grantees' conference of the Sensors and Sensing Systems (SSS) program of the Civil, Mechanical and Manufacturing Innovation (CMMI) Division of the National Science Foundation (NSF). The participation of the Asian-Pacific Network of Centers for Research in Smart Structure Technology (ANCRiSST) as the conference co-sponsor strengthened international participations. As you find in the roster of the program committee, members of the program committee represented almost all the sub-disciplines of the engineering field. The conference showed approximately 20% growth from the previous year in terms of the number of papers accepted. The conference started with a keynote session with two excellent keynote presentations: "Bio-inspired sensing technologies for structural health monitoring" by Professor Jerome P. Lynch, University of Michigan, and "Multifunctional materials exhibiting distributed actuation, sensing, and control: uncovering the hierarchical control of fish for developing smarter materials" by Professor Michael K. Philen, Virginia Polytechnic Institute and State University. The opening plenary session was followed by 40 topical sessions and one poster session. The papers in these sessions covered a wide range of topics in: fiber optics and other novel sensors, structural health monitoring, signal processing, damage detection and assessment, wireless technologies, modeling and analysis of smart systems and applications to civil, mechanical, and aerospace systems. Research papers supported by the NSF SSS program were presented at both respective topical sessions and the NSF poster session. Lively discussions among Dr. Shih-Chi Liu, CMMI Program Director in charge of the SSS program, principal investigators of the NSF projects, and other participants took place during the poster session.

In conjunction with the broad technical base of the current conference program and its objectives, it is apparent that we must continue to develop and build a large, diverse constituency. In light of the increased number of submissions to this conference that we witnessed in recent years, we are optimistic in this regard. We would like to thank authors and presenters of this year's conference for their contributions. The outstanding conference program was put together by the fine effort of the program committee, and we are thankful to the members of the program committee for their unyielding commitment to making the conference a great success.

We trust that readers will find this conference volume useful and informative.

Masayoshi Tomizuka
Chung-Bang Yun
Victor Giurgiutiu
Jerome P. Lynch