PROCEEDINGS OF SPIE

Health Monitoring of Structural and Biological Systems 2011

Tribikram Kundu
Editor

7–10 March 2011
San Diego, California, United States

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Published by
SPIE

Volume 7984
Part One of Two Parts

Proceedings of SPIE, 0277-786X, v. 7984

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:
Author(s), "Title of Paper," in *Health Monitoring of Structural and Biological Systems 2011*, edited by Tribikram Kundu, Proceedings of SPIE Vol. 7984 (SPIE, Bellingham, WA, 2011) Article CID Number.

ISSN 0277-786X
ISBN 9780819485465

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445
SPIE.org

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

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Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

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Introduction

In the year 2001 the SPIE conference 4335 on health monitoring of structural and biological systems brought engineers, materials scientists, medical doctors, and biologists together to exchange their ideas on this important issue. After having a positive experience at that conference, yearly conferences were organized on the same topic and the next one has been planned for the year 2012. Proceedings volume 7984 contains papers presented at the 2011 conference. Papers presented in the earlier conferences can be found in Proceedings volume 4335 for 2001 papers, vol. 4702 for 2002, vol. 5047 for 2003, vol. 5394 for 2004, vol. 5768 for 2005, vol. 6177 for 2006, vol. 6532 for 2007, vol. 6935 for 2008, vol. 7295 for 2009, and vol. 7650 for 2010 papers.

The emphasis of this conference is to recognize that sensing by nondestructive evaluation, sensor array design, signal acquisition and transmission, signal processing, energy harvesting, etc., are integral parts of health monitoring for both structural and biological systems. I believe that biological and physical science communities are learning from each other by coming to this conference and exchanging ideas. Some of the recent advances in the science and technology of health monitoring techniques that go beyond the traditional nondestructive testing for internal flaw detection are presented in these proceedings. New diagnosis, prognosis and rehabilitation techniques applied to engineering structures made of metal, concrete, and composites, as well as biological systems, are presented. The papers published here cover a wide range of technologies. It is hoped that this conference will stimulate further interactions between physical and life science community resulting in newer development of more innovative techniques for health monitoring applications.

I am thankful to the conference cochair, program committee members, authors, session chairs, and the SPIE staff for putting together this excellent conference.

Tribikram Kundu