

PROCEEDINGS OF SPIE

Microelectronics: Design, Technology, and Packaging III

Alex J. Hariz
Vijay K. Varadan
Editors

5-7 December 2007
Canberra, Australia

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Published by
SPIE

Volume 6798

Proceedings of SPIE, 0277-786X, v. 6798

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Author(s), "Title of Paper," in *Microelectronics: Design, Technology, and Packaging III*, edited by Alex J. Hariz, Vijay K. Varadan, Proceedings of SPIE Vol. 6798 (SPIE, Bellingham, WA, 2007) Article CID Number.

ISSN 0277-786X
ISBN 9780819469694

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

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Introduction

In this volume we present the proceedings of the conference on Microelectronics: Design, Technology, and Packaging III, held alongside four other conferences which constitute the SPIE Symposium on Microelectronics, MEMS, and Nanotechnology (AU07) held in Canberra, Australia in December of 2007. The other conferences are: BioMEMS and Nanotechnology III; Devices and Process Technologies for Microelectronics, MEMS, Photonics, and Nanotechnology IV; Photonics: Design, Technology, and Packaging III; and Complex Systems II. The meeting saw the coming together of a diverse international congregation with delegates from various countries far and wide. The multidisciplinary nature of this meeting made the exchanges uniquely interesting. The six plenary presentations were exceptionally good and thought provoking. To that extent, and as the content of this proceedings will attest, the meeting was truly successful in its mission.

The Microelectronics conference, in particular, provided a forum for researchers, scientists, engineers, and practitioners of international repute to present their latest research findings, ideas, developments and applications in the area of microelectronics and related topics; including fabrication and modeling of microsystems, integrated circuits and devices, and exploration of future trends. A particular focus of this meeting was on interfaces between advanced technologies and biological and quantum domains. This conference offered a unique blend of technologies and served as a major hub for the discussion of interdisciplinary research around the world through a variety of formats, such as oral presentations, poster sessions, and panel discussions. There were over seventy papers submitted to this conference alone, a good portion of which were presented at the meeting, but only those submissions which passed the full-paper peer review process are published in this volume. Some of the topics covered by the presentations are: device characterization ; device physics ; materials ; optoelectronics; MEMS and MOEMS ; smart power devices and sensors; interconnects; embedded system design; system on chip; low-voltage, low-power VLSI design; circuits for wireless communications; modeling and simulation; trends in sub-micron technologies; signal processing and multiplexing; SiGe, GaN, and SiC devices; SOI; RF mixed analog/digital; quantum computing; and terahertz technology.

In order to comply with the requirements of some institutions for publication review, the full manuscripts herein were each peer-reviewed by members of the international program committee, and were then assessed by the editors. Review was judged on the basis of originality, substance, technical quality, and significance. The review outcomes were provided individually to the authors.

Our thanks and gratitude go to the members of the program committee for taking the time to participate in the review of manuscripts process. We are infinitely grateful to the local organizing team led by Tiziana Di Matteo of The Australian National University who provided adequate facilities for the symposium, and who were so generous in accommodating the needs of the delegates.

**Alex Hariz
Varadan Vijay**

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