THIS Special Section includes selected papers from presentations at the IEEE International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE), Aix-en-Provence, France, April 2003.

The annual EuroSimE conference was initiated in 2000, with major sponsorship from the European Commission and technical co-sponsorship from the IEEE CPMT Society. It was designed to meet the growing needs and challenges in these rapidly progressing fields. Since then, EuroSimE has demonstrated worldwide appeal with participants from more than thirty countries spanning over all continents. Beginning in 2004, EuroSimE becomes a fully IEEE-CPMT conference.

The selected papers in this special section cover a broad technical scope including carbon nanotube applications in microelectronics; micromechanical modeling of stress evolution induced during cure in a particle-filled electronic package polymer; mechanical FEM simulation of bonding process on Cu low K wafers; validating the finite-element model of a piezoresistive ceramic pressure sensor; influence of material combinations on delamination failures in a cavity down TBGA package; in-situ micro-digital image speckle correlation technique for characterization of material properties and verification of numerical models; microstructure evolution of tin–lead solder; and reliability analysis and design for the fine pitch flip chip BGA packaging. All these papers represent the state-of-the-art and future development trends for all of the disciplines associated with this conference.

We hope that this special section can be helpful for your work. We would also like to have your feedback and suggestions for improving our work, and to provide you with valuable references in the future. Papers from EuroSimE 2004 can be found in the IEEExplore online database.

The next EuroSimE will be held in Berlin, Germany, on April 17 (courses) and 18–20, 2005 (conference and exhibition). We invite interested professionals to visit the EuroSimE website: www.eurosime.com.

WILLEM D. VAN DRIEL, Guest Editor
ATO Innovation/Philips Semiconductors
Nijmegen, 6534 AE The Netherlands
willem.van.driel@philips.com

XUEJUN FAN, Guest Editor
ATD Q&R
Intel Corporation
Chandler, AZ 85248 USA
xuejun.fan@intel.com

KOUCHI G. Q. ZHANG, Guest Editor
Philips Center for Industrial Technology
Eindhoven, 5600 MB The Netherlands
g.q.zhang@tue.nl

Willem D. van Driel received the M.S. degree in mechanical engineering from the University of Eindhoven, Eindhoven, The Netherlands.

He has worked in the area of biomechanics, orthodontics, oil and gas explorations, and is currently appointed at Philips Semiconductors, Assembly and Test Organization, The Netherlands. He has published several conference and journal articles in the microelectronic area. His areas of interest are concerned with thermomechanical related failures in electronic packages and systems.

Mr. van Driel is a Guest Editor for the IEEE TRANSACTIONS ON COMPONENTS AND PACKAGING TECHNOLOGIES and is a member of the Organizing Committee for the annual EuroSimE Conference.
**Xuejun Fan** (M’02) received the Ph.D. degree in mechanical engineering from Tsinghua University, Beijing, China, in 1989.

He is currently a Senior Staff Engineer with ATD Q&R, Intel Corporation, Chandler, AZ. From 2000 to 2003, he worked for Philips Research Lab, Briarcliff Manor, NY. From 1997 to 2000, he was with the Institute of Microelectronics (IME), Singapore, heading a group of modeling and simulation in the Advanced Packaging Development Department. He was a Full Professor with Taiyuan University of Technology, Taiyuan, China, from 1991 to 1997. He has been interested in packaging reliability analysis, testing, and simulation for exiting and new package development. He has given several keynote lectures and short courses on reliability issues in microsystem packaging in international conferences.

Dr. Fan received the second-prize from Henry Fok Ying-Tung Education Foundation, Hong Kong, for his Excellence in Research in 1994, and was a Nominee for the Ten Chinese Outstanding Youth in 1991. He is a Technical Committee Member of the International Conference on Thermal and Thermo-Mechanical Simulation in Microelectronics (EuroSime), and the International Conference on Electronic Packaging Technology (EPTC).

---

**Kouchi G. Q. Zhang** (M’03) is a Principal Scientist/Technology Domain Manager with the Philips Center For Industrial Technology (CFT), Eindhoven, The Netherlands and a part-time Professor with the Faculty of Mechanical Engineering, Eindhoven University of Technology. He is author and co-author of more than 100 scientific publications, including journal and conference papers, books, and invited keynote lectures. His scientific interests include virtual prototyping and virtual qualification, development of fundamental and application knowledge of computational and experimental mechanics, advanced optimization methods, and especially their applications in microelectronics and microsystems.

Dr. Zhang Chairs and participates in several international conference committees (EuroSimE, ECTC, EPTC, ICEPT, MicroMat, etc.) and academic societies (IMAPS Benelux, IEEE-CPMT, etc.). He serves as Guest Editor for the *Journal of Electronic Packaging* and various IEEE TRANSACTIONS. He also leads and participates in several related R&D activities and initiatives in Europe.