

Special Section on the 2008 International Conference on Microelectronic Test Structures

THIS special section is devoted to the 2008 International Conference on Microelectronic Test Structures (ICMTS). The conference aims to bring together designers and users of test structures in the field of microelectronics, to discuss recent developments and future directions. IEEE-ICMTS is held annually, in alternating locations in the USA, Japan, and Europe. The 21st venue in 2008 was organized in Edinburgh (UK) in cooperation with the Scottish Microelectronic Center and the University of Edinburgh. Over 110 participants attended the three-day conference preceded by one-day tutorials. These tutorials were presented by eight renowned experts on varying topics directly related to the electrical test of microelectronic components. Technical sessions included those devoted to the precise characterization of devices, yield and reliability, photomask process control, 3-D integration, RF measurement and Interconnect. This year, key topics were the matching of components, and the measurement of IC process parameters using test circuits rather than test structures.

While the weather kindly assisted us to keep the meeting room full, the highlights of Scottish culture were abundantly promoted in the attractive social programme offered by the local organizing committee. The Best Paper Award was won by Christopher Hess and coworkers for their contribution on the detection and localization of soft fails in interconnect. This award is presented to the authors at the 2009 ICMTS, held in Oxnard, CA, between 30 March and 2 April. More details on

previous and upcoming ICMTS conferences can be found on the ICMTS website, <http://www.see.ed.ac.uk/ICMTS/>.

The technical contributions totalled 34 oral and 8 poster presentations, selected from 63 submitted abstracts. All conference papers presented at ICMTS 2008 are available through IEEEExplore. Of these papers, a subset was selected and authors were invited to expand their paper for this Special Section in the course of 2008. The papers appearing here give a good representation of the type of work presented at ICMTS. They also represent the diversity of the conference attendees, not only in geographical terms but also by their affiliations from industry, institutions as well as academia.

The papers presented in this section present recent, significant improvements of the state of the art in microelectronic characterization techniques. As such, we hope that they will support the semiconductor community in their quest for fast, precise and cost-effective means for process development and process control.

I would like to thank the authors for their contributions, and for their commitment to my tight schedule. Thanks also go to the reviewers for their devotion to balance the new papers against prior art and for suggesting many valuable manuscript improvements. Finally, I would like to thank Prof. Anthony Walton for his excellent conference chairmanship of the 2008 ICMTS.

JURRIAN SCHMITZ, *Guest Editor*
University of Twente
7500 AE Enschede, The Netherlands

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Jurriaan Schmitz (M'02–SM'06) Received the M.Sc. (*cum laude*) and Ph.D. degrees in experimental physics at the University of Amsterdam, Amsterdam, The Netherlands, in 1990 and 1994, respectively. His Ph.D. thesis dealt with the research and development of a new radiation detector, carried out at the NIKHEF research institute and CERN. He was also a CERN summer student in 1990.

In 1994, he joined Philips Research as a Senior Scientist, studying CMOS transistor scaling, characterization and reliability. Since 2002, he has been a full professor at the University of Twente in Enschede, The Netherlands. He is or was a TPC member of the International Electron Device Meeting (IEDM), The International Reliability Physics Symposium (IRPS), and the European Solid-State Device Research Conference (ESSDERC). He acted as Technical Program Chair of the 2008 International Conference on Microelectronic Test Structures (ICMTS). Prof. Schmitz authored or co-authored over 130 journal and conference papers and holds 16 US patents. He served as editor for the Dutch Journal of Physics (NTvN) and was a board member of the Dutch Physical Society. He acted as guest editor for *Solid-State Electronics* and is co-author of two book chapters.

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