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# Guest Editorial

## Special Issue on the 2012 IEEE International Instrumentation and Measurement Technology Conference

The 29th Annual IEEE International Instrumentation and Measurement Technology Conference (I<sup>2</sup>MTC) was held in Graz, Austria, on May 13–16, 2012. Graz is the second largest city in Austria after Vienna and the capital of the state Steiermark. It is a well known student city within Austria with more than 44 000 students in six universities. A total of 577 people participated in the conference, including 163 postgraduate students and 12 undergraduate students. The technical program consisted of a series of scientific and technical sessions, covering all aspects of theories and practice of metrology, measurement, instrumentation, and a wide range of applications, as reflected in part by the diversity of the papers. Following a review process, a total of 555 papers from all over the world were accepted, and were organized into 56 oral presentation sessions and five poster sessions. The oral presentation sessions included three invited keynotes and seven special sessions, which were closely aligned with the I<sup>2</sup>MTC 2012 conference theme “Smart Measurements for a Sustainable Environment.” In particular, the special sessions attracted an overwhelming response from the community and were well attended.

Following the I<sup>2</sup>MTC 2012, a total of 159 papers that were extended substantially from their conference proceeding versions were submitted to this special issue. After a rigorous review process, 56 papers have been accepted for publication in this special issue. They not only present the latest developments in the field of instrumentation and measurement,

but also offer possible solutions to existing problems. We hope that this special issue provides a good reference point for the researchers and practitioners, who are active in the field and will serve as a catalyst to trigger further investigations.

It has been our great pleasure to be the Guest Editors of this special issue. We would like to thank the authors for their excellent contributions, without which it would be impossible to have this special issue published. We are also grateful to the Associate Editors and all reviewers, who devoted their time and effort, on a voluntary basis, to ensure that all submissions were reviewed rigorously. The Editor-in-Chief, Prof. Alessandro Ferrero, and the IEEE transactions administrators, Ms. Cam Ingelin and Ms. Reta Wehmeier, are particularly acknowledged for giving us timely advice on guest editing this special issue.

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**Kurt Barbé** (M'09) received the M.Sc. degree in mathematics (option statistics) and the Ph.D. degree in electrical engineering from the Vrije Universiteit Brussel (VUB), Brussel, Belgium, in 2005 and 2009, respectively.

He is currently an Assistant Professor with the Department of Fundamental Electricity and Instrumentation, VUB. He is also a Post-Doctoral Research Fellow with the Flemish Research Foundation and the VUB Coordinator of the Flemish inter-university training network for methodology and statistics initiated by the Flemish Minister of Innovation. His current research interests include system identification, time series analysis, and signal processing for biomedical applications.

Dr. Barbé was the recipient of the 2011 Outstanding Young Engineer Award from the IEEE Instrumentation and Measurement Society. Since 2010, he has been an Associate Editor for the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT.



**Yong Yan** (M'04–SM'04–F'11) received the B.Eng. and M.Sc. degrees in instrumentation and control engineering from Tsinghua University, Beijing, China, in 1985 and 1988, respectively, and the Ph.D. degree in solids flow measurement and instrumentation from the University of Teesside, Middlesbrough, U.K., in 1992.

He started his career in 1988 as an Assistant Lecturer at Tsinghua University. In 1989, he joined the University of Teesside as a Research Assistant. After a short period of post-doctoral research, he worked initially as a Lecturer with the University of Teesside from 1993 to 1996, and then, as a Senior Lecturer, Reader, and Professor with the University of Greenwich, Greenwich, U.K., from 1996 to 2004. He is currently a Professor of electronic instrumentation, the Head of the Instrumentation, Control, and Embedded Systems Research Group, and the Director of Research at the School of Engineering and Digital Arts, University of Kent, Canterbury, U.K. He has published over 270 research papers in journals and conference proceedings in addition to 12 research monographs.

Dr. Yan is currently an Associate Editor for the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT. He was the Technical Program Co-Chair for I<sup>2</sup>MTC 2011 and I<sup>2</sup>MTC 2012. He is a fellow of the Institution of Engineering Technology (IET, formerly IEE), the Institute of Physics, and the Institute of Measurement and Control. He was awarded the Achievement Medal by the IEE in 2003, the Engineering Innovation Prize by the IET in 2006, and the Rushlight Commendation Award in 2009. In recognition of his contributions to pulverized fuel flow metering and flame imaging, he was elevated to an IEEE Fellow in 2011.



**Wuqiang Yang** (SM'05–F'12) received the B.Eng. (distinction), M.Sc., and Ph.D. (distinction) degrees from Tsinghua University, Beijing, China, in 1982, 1985, and 1988, respectively.

After three years as a Lecturer with Tsinghua University, he joined the University of Manchester Institute of Science and Technology (UMIST), U.K., in 1991. He is currently a Professor with the School of Electrical and Electronic Engineering, University of Manchester, U.K. He is a Visiting Professor at six universities, including Tsinghua University. He has been invited by many universities and research institutions worldwide and international conferences to give lectures, seminars, and keynotes. He has published 300 papers and holds ten patents. His current research interests include industrial tomography, in particular, electrical capacitance tomography, image reconstruction algorithms, electronic circuits, sensing and data acquisition systems, instrumentation, and multiphase flow measurement.

Dr. Yang is a fellow of the Institution of Engineering Technology and the Institute of Measurement and Control. He is an Associate Editor of the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, an Editorial Board Member of six other journals, including *Measurement Science and Technology* and *Sensor Review*, and a Guest Editor of several journal special issues. He reviews papers for 40 professional journals, including six IEEE journals. He was a recipient of many awards, including the 1997 Institution of Electrical Engineers/National Physical Laboratory (IEE/NPL) Wheatstone Measurement Prize, the 1997 Honeywell Prize from InstMC, and the 2000 IEE Ayrton Premium. Since 2002, his biography has been in *Who's Who in the World*. He is currently an IEEE Instrumentation and Measurement Society Distinguished Lecturer and has given 24 lectures in China, Germany, Greece, Malaysia, Norway, Singapore, U.K., and USA.