Guest Editorial: Special Section on the 2014 IEEE International Symposium on Medical Measurements and Applications

THE ninth edition of the 2014 IEEE International Symposium on Medical Measurements and Applications (MeMeA 2014) was held on June 11 and 12, 2014, in Lisbon, the lovely capital of Portugal. Started in 2006, MeMeA has become a successful international annual meeting for all scientists interested in measurements for medicine, coming from academia, industry and research institutions from all over the world, offering them the opportunity to work together toward the development of feasible and effective solutions for real-world problems related to patient healthcare.

MeMeA 2014, with the challenging theme *"Beyond Medical Measurements,"* aimed to highlight the importance of innovative design and implementations of measurements and instrumentations for diagnosis, monitoring and treatments, which allow identifying key changes in health status and treatment outcomes.

Monitoring and diagnostic systems, information processing, sensors for medical systems, smart homes and patient rehabilitation were some of the measurement topics presented in MeMeA 2014, together with five special sessions, organized for the first time in the Symposium's history, which brought together researchers working in the fields of automation in anesthesia, medical applications of thermography, material and chemical measurements for health, smart health and wireless communications in healthcare. One hundred and thirty papers were accepted in the Symposium proceedings, leading to a best paper award, best student paper award, best "Women in Engineering" paper award and best poster award.

Authors of accepted papers at MeMeA 2014 were invited to extend their work and submit to this Special Section. After a rigorous and careful peer review, the following four papers were finally accepted for this Special Section:

1) S. Bennett *et al., "In-bed mobility monitoring using pressure sensors*," devoted to the development of a system of algorithms to automatically identify elderly patient movement;
2) R. G. Leitao *et al., "Study of response to zinc in human prostate spheroids using X-ray microfluorescence*," which presents the use of X-ray microfluorescence with synchrotron radiation measurements in the study of prostate cancer cells;
3) E. Tóth-Laufer *et al., "Personal statistics-based heart rate evaluation in anytime risk calculation model*," which introduces a new method for measuring personal characteristics in real-time during sports activities, to ensure the exercise is carried out carefully and safely;
4) S. Casciaro *et al., "An innovative ultrasound signal processing technique to selectively detect nanosized contrast agents in echographic images*," which attempts to propose and optimize a novel algorithm for acquisition and processing of medical ultrasound signals in order to facilitate its clinical translation.

We would like to thank all authors who extended and submitted their MeMeA 2014 papers to this Special Section, as well as all reviewers whose time and effort made possible the publication of this Special Section.

Finally, we would like to sincerely thank IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT staff, Cam Ingelin and Reta Wehmeier, Administrators, and Prof. Alessandro Ferrero, Editor-in-Chief, for their precious support and invaluable services for the publication of this Special Issue.

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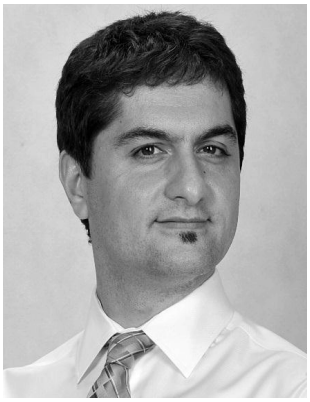
She joined the Polytechnic University of Turin in 2007, where she is currently an Assistant Professor of Chemical Engineering with the Department of Applied Science and Technology. Her research activities, which led to the publication of more than 130 papers in national and international journals and in the proceedings of international conferences, have been developed in the fields of chemical/physical fundamentals of plasma processes, study of corrosion mechanisms of biomaterials, and sensors and biomedical measurements. She has been an Associate Professor with the Italian National Research Council, Institute for the Study of Nanostructured Materials, Rome, Italy, since 2010, and is Secretary of the Working Party 21 on Corrosion of Archaeological and Historical Artifacts of the European Federation of Corrosion.

Dr. Grassini has been a member of the Steering Committee of the IEEE International Symposium on Medical Measurement and Applications (MeMeA) since 2013. She is a part of the IEEE TC-25 on Medical and Biomedical Measurements and the TC-17 on Materials in Measurements. She was the Technical Program Chair of MeMeA in 2014 and the General Chair of MeMeA in Turin in 2015.



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He is currently a Full Professor with the School of Electrical Engineering and Computer Science, University of Ottawa, where he directs the Distributed and Collaborative Virtual Environment Research Laboratory, and conducts research on multimedia systems and networking, in particular, gaming systems, video systems, and multimedia-assisted biomedical engineering. The results of his research have led to more than 250 publications, more than 20 patent and technology transfers to the private sector, and a number of awards and prizes.

Dr. Shirmohammadi is the Associate Editor-in-Chief of the *IEEE Instrumentation and Measurement Magazine*, a Senior Associate Editor of *ACM Transactions on Multimedia Computing, Communications, and Applications*, and an Associate Editor of the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT. He was an Associate Editor of the *Journal of Multimedia Tools and Applications* (Springer) from 2004 to 2012. He is a University of Ottawa Gold Medalist, a Licensed Professional Engineer in Ontario, and a Lifetime Professional Member of the Association for Computing Machinery.