



## Editorial

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**Section:** EDITORIAL

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This issue of ACTA IMEKO collects papers submitted from authors that are active in various areas of IMEKO and ends the publication of manuscripts submitted after the completion of the World Congress in Busan (Korea), in 2012.

In the area TC5 – Measurement of Hardness we publish 3 contributions. The first of these papers is authored by Low et al. and it is a joint experimental work done by authors coming from several major national metrological institutes. It proposes a new definition of the Brinell hardness indentation test that proves to be useful when low uncertainties are a goal, at the first levels of the traceability chain.

The second paper by Ma et al. covers the same topic and highlights the difficulties arising by the usage of the current definition of Brinell hardness, when the indentation diameter must be determined. The third paper authored by S. Takagi shows how to profile Rockwell diamond indenters by means of 3d laser scanners.

In the area of nanometrology we publish 2 papers. The first one by Schuler et al. deals with the subject of tactile surface measurements and addresses the case when surfaces do not have a limited curvature. Experimental results are presented that validate the technique presented in this paper to overcome the curvature problem. The second paper by Malinovsky et al. discusses nanometrology capacity at the Brazilian national metrology institute. Traceability at nanometrological level is the central issue discussed here. An interference microscope is described and its metrological characterization is presented.

In the area TC13 – Measurements in Biology and Medicine we publish one paper by Fiedler et al. It is the research result of an international team of researchers and it reports about an experimental comparison of dry electrodes for electroencephalography to be applied in brain-machine interfaces.

In the area TC20 – Energy Measurements we publish a contribution by an international team of researchers authored by Seitz et al. It covers the important task of improving the SI traceability of bioethanol by using electrolytic conductivity measurements.

In the area TC7 – Measurement Science we publish 3 contributions. The first one by Zieliński et al. describes a time-interval measurement system based on multi-tapped delay lines. This component is rapidly becoming an important building block for many practical applications. The authors describe their architecture and show experimental results obtained by using their system. The second contribution by Aschenbrenner and Zagar presents an inductive absolute position measurement system to be applied in industrial environments. The system is described and characterized from a metrological point of view. E. Benoit authors the third paper in this area. It deals with the fundamental issue of color measurements in hard sciences and in behavioral sciences. By using fuzzy scales, the paper shows how to adapt the scale used for color measurements to the measurement context.

In the area TC15 – Experimental mechanics, we publish a paper by Panciroli and Minak that describes a methodology to be used for the analysis of the air trapped in a fluid when a deformable structure enters the fluid.

The paper closing this issue is authored by Chen et al. and it relates to the area TC3 – Measurement of Force, Mass and Torque. It describes a built system able to measure micro-forces. Experimental results are obtained by comparison with milligram scale deadweights.

I want to thank all authors for their scientific contributions and all people involved in managing and preparing this issue.

Finally, on behalf of the Editorial Board I wish you to enjoy the scientific content of this ACTA IMEKO issue.