Conference Chair Welcome

It is my great pleasure to welcome you to Rio de Janeiro for the 2014 Conference on Precision Electromagnetic Measurements (CPEM 2014). Scientists and researchers from over 40 countries have registered to attend CPEM 2014, continuing the long-standing tradition of CPEM being the venue for technical exchange among international researchers and metrologists who are responsible for electromagnetic measurements at the highest levels of accuracy.

This is the first time the conference is hosted in South America. The Instituto Nacional de Metrologia, Qualidade e Tecnologia, Inmetro, from Brazil, and the Instituto Nacional de Tecnología Industrial, INTI, from Argentina, jointly organized CPEM 2014. The initiative is a result of the long-standing collaboration between the two countries.

CPEM has always been a special occasion to join highly specialized international researchers and metrologists from national metrology institutes; industrial organizations that manufacture the highest accuracy electrical standards and measurement instruments; industrial and government standards laboratories that interact extensively with national laboratories; and universities that conduct research on precision measurements, standards and related fundamental constants.

CPEM is focused in electromagnetic measurements at the highest accuracy levels covering the frequency spectrum from dc through the optical region. Quantum devices that relate electrical standards to fundamental constants and the international system of units are a major focus of this conference.

The technical program for CPEM 2014 features plenary conferences on the topics of Quantum Optics, Quantum Information, Quantum Metrology: Exploring the Subtleties of the Quantum World, Precision Penning-trap Mass Measurements and Fundamental Constants, and The Femtosecond Laser as a Microwave Experiment, related to the proposals for the new SI.

The CPEM 2014 technical program committee has also selected 396 papers for oral and poster sessions on quantum metrology, fundamental constants, redefinition of SI, electrical metrology (specifically on voltage, resistance, impedance, power and energy, high voltage and current, radio frequency, magnetics, energy sources, and data analysis), optical metrology, time and frequency, and thermometry. The technical program also includes three Special Sessions (SS) featuring the topics of Characterization of the Electrical Properties of Nanocircuits, Metrology for Smart Grids, and The New kg - Progress on Watt Balances and Silicon Spheres.

Many organizations and individuals have worked hard and contributed to make CPEM 2014 possible. My thanks to Inmetro and INTI (in particular to the Technical Committee chair, Héctor Laiz), to the Organizing Committee, the Technical Program Committee, the Sponsors and Exhibitors, and to all who have contributed to the technical program.

Finally, I express my gratitude and give my very special thanks to the CPEM 2014 Vice Chair, Gregory Kyriazis, for his hard and remarkable organization work.

We are all looking forward to a productive week of technical exchange and collaboration at CPEM 2014.

Sincerely,

Humberto Brandi, CPEM 2014 Conference Chair
Inmetro - Director of Scientific and Industrial Metrology