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RECENT ACTIVITIES OF INTERNATIONAL MEASUREMENT CONFEDERATION IMEKO

ANNUAL CONVENTION OF IMEKO GOVERNING BODIES

International Measurement Confederation IMEKO is a federation of 39 national measurement-related organisations and institutions from the following countries: Albania, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Egypt, Finland, France, Germany, Greece, Hungary, Italy, Japan, Kazakhstan, Kenya, Korea (South), Mexico, Netherlands, Nigeria, Poland, Portugal, Romania, Russia, Rwanda, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey and United Kingdom. For many years USA had been represented in IMEKO by Instrument Society of America (ISA), now have no representation, but the negotiations with National Institute of Standards and Technology (NIST) are advanced and promising. IMEKO was established in 1958 with an aim to promote scientific cooperation between the so-called Western and Eastern countries in the domain of broadly understood metrology. The mission of Confederation has evolved during 50 years, especially after 1989, and today's IMEKO is a leading international organisation integrating research and engineering efforts of measurement experts from five continents.

IMEKO is run by several governing bodies whose duties are defined in the *IMEKO Constitution and By-laws* (available in section *Downloads* at <http://www.imeko.org/>): the General Council, the Board of Officers, the Advisory Board and the Technical Board. The current composition of the Board of Officers is shown in Table 1. All the IMEKO officers serve on a voluntary basis (without any remuneration). Substance-related activities of IMEKO are animated by its technical committees whose names are listed in Table 2.

The 2008 convention of the IMEKO governing bodies took place in Budapest, Hungary, on September 8–9, 2008. Its programme included:

- the annual meeting of the IMEKO Advisory Board,

Table 1. Board of Officers.

President António da Cruz Serra Instituto Superior Técnico Lisbon, Portugal	Vice-President in Charge of XIX World Congress Pedro Silva Girão Instituto Superior Técnico Lisboa, Portugal
President-Elect, Chairman of the Technical Board Dae-Im Kang Korea Research Institute of Standards & Science Taejon, Republic of Korea	Chairman of the Advisory Board, Past President Leo van Biesen Vrije Universiteit Brussels Brussels, Belgium
Vice-President for External Relations Hidetaka Imai National Institute of Advanced Industrial Science & Technology Tsukuba, Japan	Secretary General Mladen Boršić Croatian Metrology Society Zagreb, Croatia
Information Officer Dirk Röske Physikalisch-Technische Bundesanstalt Braunschweig, Germany	Treasurer P. Herbert Osanna Technische Universität Wien Wien, Austria

Table 2. IMEKO Technical Committees.

TC1 – Education and Training in Measurement and Instrumentation	TC13 – Measurements in Biology and Medicine
TC2 – Photonics	TC14 – Measurement of Geometrical Quantities
TC3 – Measurement of Force Mass and Torque	TC15 – Experimental Mechanics
TC4 – Measurement of Electrical Quantities	TC16 – Pressure and Vacuum Measurement
TC5 – Hardness Measurement	TC17 – Measurement in Robotics
TC6 – Vocabulary Committee	TC18 – Measurement of Human Functions
TC7 – Measurement Science	TC19 – Environmental Measurements
TC8 – Traceability in Metrology	TC20 – Measurement Techniques for Construction Industry
TC9 – Flow Measurement	TC21 – Mathematical Tools for Measurements
TC10 – Technical Diagnostics	TC22 – Vibration Measurement
TC11 – Metrological Infrastructures	TC23 – Metrology in Food and Nutrition
TC12 – Temperature and Thermal Measurements	TC24 – Chemical Measurements

- the annual meeting of the IMEKO Technical Board,
- the annual meeting of the *Measurement – Journal of IMEKO* Editorial Board,
- the annual meeting of the General Council,
- a gala dinner on the occasion of the 50th anniversary of IMEKO.

The agenda of the General Council meeting included:

- a historical presentation on the occasion of the 50th anniversary of IMEKO, delivered by Tamás Kemény, IMEKO Secretary General in the period 1985–2006 (available on the POLSPAR website at the address <http://www.ire.pw.edu.pl/polspar/IMEKO.html>);

- the reports of the President, the Secretary General and the Treasurer on their activities since the 2007 convention of the IMEKO governing bodies;
- the acceptance of two new member organisations: the National Measurement Institute of Australia and the Serbian Society of Metrologists;
- the reports of the Advisory Board and of the Technical Board on the meetings preceding the GC Session;
- the report of the Technical Board on *Measurement – Journal of IMEKO*;
- the report of the Portuguese MO on preparations of the IMEKO XIXth Congress (Lisbon, September 6-11, 2009);
- the bid for organizing the XXth IMEKO World Congress in 2012 (Busan, South Korea).

IMEKO TC7-TC1 JOINT SYMPOSIUM ON MAN, SCIENCE & MEASUREMENT

The IMEKO TC7-TC1 Joint Symposium on Man, Science & Measurement was held in Annecy, France, on September 3-5, 2008. It was attended by 67 participants from 21 countries (7 persons from Poland). It was intended to explore emerging challenges and novel concepts in measurement science from an anthropocentric viewpoint, in particular – the role of measurement science in human activity and the role of measuring systems in supporting human perception of the world. Consequently, the technical programme of the Symposium comprised sessions directly addressing those issues: fundamentals of measurement science, subjectivity in measurements, human measurements, non-physical measurements, intelligent measuring systems. It should be noted, however, that also the sessions devoted to more traditional topics – such as vocabulary of measurement science, measurement uncertainty, diagnostics, calibration or metrological education – referred to the mainstream topics and to an anthropocentric orientation of the Symposium.

On top of regular presentations, the technical programme of the Symposium included three invited keynote lectures:

- “IMEKO – The Instrumentation and Measurement Confederation” (by President of IMEKO, Antonio Cruz Serra from Technical University of Lisbon, Portugal);
- “On food, spectrophotometry, and measurement data processing” (by Roman Z. Morawski from Warsaw University of Technology, Poland);
- “The 2007 edition of *International Vocabulary of Metrology – Basic and General Concepts and Associated Terms*” (by the IUPAC delegate to the Joint Committee on Guides for Metrology, Paul de Bièvre, from Belgium); and a tutorial “Basic Structures in Metrology – A Common Approach to Measurement Demands” (by Karl H. Ruhm from Federal Institute of Technology ETH, Zürich, Switzerland).

The topics most discussed during the Symposium were related to the 2007 edition of *International Vocabulary of Metrology – Basic and General Concepts and Associated Terms* and to weakly-defined measurands. Strong criticism was expressed with respect to *Vocabulary of Metrology* because of the insufficient progress in the adap-

tation of conceptual basis and related terminology to the advances in measurement science and technology, in particular – when multidimensional dynamic measurements are concerned. The problems of weakly-defined measurands appeared in many presentations, *e.g.* in those concerning measurement of naturalness, measurement of total visual appearance, measurement of overall image quality, measurement of music emotional impact, measurement of characteristics of handwritten letters, food evaluation and identification, application of measurements for plagiarism detection.

IMEKO TC19-TC23-TC24 CONFERENCE ON ENVIRONMENTAL MEASUREMENTS, FOOD AND NUTRITIONAL MEASUREMENTS AND CHEMICAL MEASUREMENTS

The IMEKO TC19-TC23-TC24 Conference on Environmental Measurements, Food and Nutritional Measurements and Chemical Measurements was held in Budapest, Hungary, on September 10-12, 2008. It was attended by 65 participants from 21 countries (4 persons from Poland). It was intended to impart dynamism into the activity of three technical committees covering chemical and biochemical measurements, *viz.* TC19 (Environmental Measurements), TC23 (Metrology in Food and Nutrition) and TC24 (Chemical Measurements). For two of them (TC23 established in 2006, and TC24 established in 2007), it was the first event in their short history.

A distinctive feature of the Conference – most probably related to its debutant status – was the considerably large number of invited presentations providing guidance for future activities of the technical committees involved, mainly of TC23 and TC24. The titles of those presentations give a very good summary of the current development trends in the domain of metrology covered by those committees:

- “Mobile solutions for remote environmental monitoring systems” (by P. Silva Girão from Technical University of Lisbon, Portugal);
- “Food and nutritional measurements: metrological and capacity developmental issues” (by Venkatesh Iyengar from Friedman School of Nutrition Science and Policy, USA);
- “How can certified reference materials contribute to strengthen measurements in food and nutritional analysis?” and “Proper selection and use of certified reference materials” (by Robert Koeber from European Commission Joint Research Centre, Belgium);
- “How to implement national facilities for food matrix reference materials” and “Implementing quality systems and metrological principles in food composition databases in Europe” (by Isabel Castanheira from National Institute of Health, Portugal);
- “Reference materials for food and nutrition metrology: past, present and future” (by Wayne R. Wolf from National Institute of Standards and Technology, USA);

- “Measuring nutrients in foods: the importance of international standards and the needs of diverse user groups” (by Barbara Burlingame from Food and Agriculture Organization of the United Nations, Italy);
- “NIST contributions to strengthen food and nutrition measurements” (by Stephen A. Wise from National Institute of Standards and Technology, USA);
- “Analytical quality assurance approaches developed for food analysis as a part of reference Asian man project, Phase 2” (by Hisao Kawamura from Japan Marine Science Foundation, Japan).

It follows from the above list that the Conference was dominated by the topics related to (bio)chemical reference materials. Unlike in the domain of physical measurements, where the problems of standards have been satisfactorily solved in the majority of practically interesting applications, in the domain of biochemical measurements, especially in the area of food-and-nutrition measurements, a satisfactory solution is still an exception. Another distinctive feature of this conference was its preoccupation with food-related measurements, motivated by a rapid increase of their applications both in terms of the repertoire of measurands and in terms of the number of installed instruments and systems. This increase is a response to a growing demand for adequate methods of food analysis, driven by several factors. First of all, food scandals are reported more and more frequently, despite the legislative efforts aimed at protecting consumers and ensuring fair trade. Their origin is most often related to pesticide residues, veterinary drug residues, endocrine disruptors, processing contaminants, packaging materials and natural toxins. On top of that, genetically modified food products and ingredients have become an issue, at least in the European Union.