

REPORT ON IMEKO TC4 SYMPOSIUM & ADC WORKSHOP
IN GDYNIA/JURATA, SEPTEMBER 2005

The 14th International Symposium on New Technologies in Measurement and Instrumentation as well as the 10th Workshop on ADC Modeling and Testing took place in Gdynia (Opening Ceremony and Plenary Session) and Jurata (Working Sessions).

These events were organized by Gdynia Maritime University and the Technical Committee on Measurement of Electrical Quantities of the International Measurement Confederation under the patronage of Committee of Measurement and Scientific Instrumentation, Polish Academy of Sciences and Polish Association of Measurements, Automatics and Robotics POLSPAR in cooperation with the Polish Electrical Engineers Association.

Among the honourable guests of the Symposium there were present: prof. Edmund Wittbrodt, member of Parliament of the Republic of Poland, Polish representative to the EU authorities; mr Witold Górski, Vice-Minister of Infrastructure supervising Gdynia Maritime University; prof. Jerzy Kubicki, Vice-Rector of Gdynia Maritime University.

Among the honorable guests of the Symposium we also hosted the representatives of the City of Gdynia, the Pomeranian Governors' Office and distinguished IMEKO representatives: prof. Leo Van Biesen - IMEKO President, prof. Milos Sedlacek - IMEKO TC-4 Chairman, prof. Antonio Serra - IMEKO TC-4 deputy Chairman, prof. Pascuale Daponte - IMEKO TC-4 Secretary, prof. Mario Savino - IMEKO TC-4 Honorary Chairman.

The National Organizing Committee was pleased to receive about 130 extended abstracts. Each paper was reviewed by at least two independent reviewers, who worked patiently in order to evaluate the received contributions and provide useful comments and suggestions to their authors. After review, 112 papers were selected for presentation. There were about 200 participating authors from 15 countries.

It was "a state of the art" Symposium, concerning the contents of the Proceedings. Almost all accepted papers were presented, even though some participants did not appear at last minute. Finally, about 90 participants attended the Symposium and Workshop as well as honourable guests of the Symposium and accompanying persons, all from 14 countries. These countries are: Poland (31 participants) Italy (11), Czech (9), Romania (8), Slovakia (7), Portugal (4), Sweden (3), Belgium, Japan, France, Slovenia, China, Greece and Croatia.

A total number of 104 papers were presented at the Symposium and Workshop, whereof 75 orally and 29 in poster style.

Symposium and Workshop programme consisted of a plenary session, 18 working sessions and a closing session. Working sessions were conducted in parallel in two or three streams, depending on the day. The Symposium and Workshop programme included twenty topics based on previous IMEKO TC4 tradition and experience. Taking into consideration that distribution of papers among conference topics suggested by the National Organizing Committee is not quite precise, some tendencies in this case should be noted.

Firstly, the main focus of this Symposium was oriented towards new technologies in measurement and instrumentation underlined and expressed by a remarkably large number of submissions (15 papers accepted) for the present ADC 10th European Workshop on ADC Modeling and Testing. It should be strongly emphasized that the DSP technology is a dominating trend in measurement and instrumentation development. Observed progress in DSP technology covers not only hardware development but also more and more sophisticated software application. This technology is generally accepted in such areas as Waveform Analysis & Measurement and Mixed Signal Processing (12), Automated Test and Measurement Systems (13) or Power & Energy Measurements and Power Quality Assessment (11).

Secondly, we may observe a quite significant number of papers connected with multi-disciplinary measurements and other selectively addressed to advanced instrumentation problems. These problems were presented in topics related to Advanced Instrumentation (10), Environmental and Biomedical Measurements (9), as well Automated Test and Measurement Systems. It is worth to mention the continuous development of existing and introducing the new solutions of Sensors and Transducers (9). Summing up this point, significant progress in interdisciplinary measurements was mainly based on distributed systems concept, networking and statistical analysis aided by appropriate tools for large data files. This approach was developed due to wider and wider application of DSP technology.

Thirdly, quite numerous representation of papers concerning Calibration, Metrology and Standards (12) was noted. This seems to be rather easy to explain in the context of measurement accuracy and improvement of its assessment, including new definitions and procedures implemented in this area, e.g. uncertainty analysis and consequences resulting from those for industrial measurements.

Evaluation of the level of submitted papers is a somewhat difficult question, especially for the organizers of the Symposium. Nevertheless, it seems that the level of submitted and presented papers was almost the same as during the last Symposia.

The following selected papers have been recommended for publication in *Measurement Journal of IMEKO*:

1. J. Novak: *Sample Point Position Measurement by Controller Area Network Nodes.*
2. D. Ilić, J. Butorac, L. Ferković.: *Two-parameters Approximation Curve for NTC Resistors.*
5. N. B. Bras, P. M. Ramos, A. C. Serra: *Flexible PC measurement System Based in Extensible Mark-up Language Files.*
6. T. Tarasiuk: *Estimation of Measurement Window Width by Interpolation Based on Wavelet Coefficients-Case Study.*
7. D. Luca Carni, D. Grimaldi: *Voice Quality Measurement in Telecommunication Networks by Optimized Multisine Signals.*
8. E. Vremera, C. Fosalau, L. Brunetti: *Instrumentation Set-up for Characterisation of the Sensors Based on Amorphous Wires.*
9. L. Peretto, S. Rapuano, M. Riccio, D. Bonatti: *A Distance Learning System for Measurement Experiments.*

Additionally, the National Organizing Committee has recommended 3 papers for publication in the journal of Polish Academy of Sciences *Metrology and Measurement Systems*:

1. A. C. Serra, P. Daponte, L. Michaeli: *ADC and DAC Modeling and Testing state of the art.*
2. M. Krumpholtz, M. Sedlacek: *Measurement of Phase Difference Using DSP Algorithms by Non-Coherent Sampling.*
3. D. Agrez: *Comparison of Capacitors by Means of a Double-Channel Digitizer.*

The budget of the Symposium was based mainly on the conference fees, supported by financial resources from the sponsors (enterprises ENERGA and SONEL as well as the Authorities of Port of Gdynia and Gdynia Maritime University). The event was financially balanced due to above mentioned supporters.

Finally, some words about the forthcoming IMEKO events in electrical measurements. The next opportunity to present and discuss new results will be during the IMEKO XVIII World Congress, which will take place in Rio de Janeiro, Brazil, September 17-22, 2006. Afterwards, the next IMEKO TC 4 Symposium will be organized in 2007 in Yasi, Romania.

Prof. dr hab. inż. Janusz Mindykowski
Chairman of the IMEKO TC4 Simposium