

Preface of the Special Issue of I3S 2005 in Jülich (Germany)

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The “Third International Symposium on Sensor Science (I3S 2005)” was held at the Aachen University of Applied Sciences (AcUAS) from 18–21 July 2005 in Jülich, Germany. Since its beginning in 2003, the aim of the I3S conference has been to offer a large interdisciplinary forum on both fundamental and applied aspects of sensor science. The success of the previous I3S symposiums in Paris (France) in 2003 and Nanjing (China) in 2004 demonstrated – in spite of an ever increasing number of conferences on sensors – that such a forum has the potential to bring together scientists from widely different areas. In addition, the I3S conference is directly associated with the open access on-line journal *Sensors*.

The technical program of I3S 2005 included 3 plenary lectures, 11 keynote lectures, and about 85 oral and poster presentations with more than 120 participants from more than 20 countries, which practically covered all fields of sensor science and technology. The organisers sought papers addressing innovative ideas, and scientific and technical developments. Some of the listed key topics were:

- Nano, bioelectronic and cell-based sensors,
- Potentiometric and field-effect sensors,
- Optical and physical sensors,
- Amperometric sensors,
- Gas sensors.

Out of these keytopics the editorial team compiled three suitable topics for this special issue:

- Gas and optical sensors (page 262–349),
- Physical sensors and new trends in sensor fabrication (page 350–419),
- (Bio-)Chemical sensors for liquids (page 420–472).

As a new “highlight” of the I3S symposium, awards were given for the first time for the three best poster presentations:

- Screen-printed potentiometric electrodes, L. Tymecki, S. Glab, R. Koncki,
- Quantum dots on gold-electrodes for a switchable cytochrome c electrochemistry, Ch. Stoll, W. Parak, F. Lisdat,
- “Microstructured Nanostructures” – Nanostructuring by means of conventional photolithography and layer-expansion technique, J. Platen, A. Poghosian, M. J. Schöning.

For the publication of the special issue, we received 28 full papers out of the 99 abstracts presented at I3S 2005. Finally, after the peer-review process, 22 articles, listed in the key topics, were accepted for publication in this special issue, demonstrating the advanced progress in sensor science.

On behalf of the Organising Committee and the Aachen University of Applied Sciences (AcUAS), we would like to heartily thank the authors who publishing their papers in the *Sensors* journal, the sponsors of I3S 2005 and, of course, all participants of the symposium. Without their contributions, the great success of I3S 2005 would not have been possible.