

Commission D

2002-2005 Triennium Report

by Peter Russer

The growing importance of wireless and optical communication technology coupled with the internet growth has led to continued strong interest in the activities of Commission D, "Electronics and Photonics".

Since electronic and photonic devices have reached system level, the commission noted that this development has to be considered in the terms of reference. At the 2002 General Assembly it was resolved unanimously to change the terms of reference in the following way:

The first term of reference "Electronic devices and applications" has been changed to "Electronic devices, circuits and applications" and the second term of reference "Photonic devices and applications" has been changed to "Photonic devices, systems and applications".

Commission D has continued the successful policy of providing technical co-sponsorship to a number of meetings of interest to Commission D while focusing financial sponsorship on the established International Symposium on Signals Systems and Electronics, ISSSE, jointly sponsored with Commission C. For this triennium we also provided financial sponsorship to the 2004 Asia-Pacific Radio Science Conference (AP-RASC'04).

1. 2004 International Symposium on Signals, Systems and Electronics (ISSSE'04) in Linz, Austria

The 6th International Symposium on Signals, Systems, and Electronics, ISSSE 2004, was held in Linz, Austria on August 10-13, 2004. ISSSE is an international symposium held once every three years. This symposium is organized and sponsored by the International Union of Radio Science (URSI), Commissions C and D. ISSSE 2004 was technically co-sponsored by the IEEE Microwave Theory and Techniques Society (MTT-S), the IEEE COM/MTT Joint Chapter Austria, the Austrian Electrotechnical Association (ÖVE), the German Association for Electrical, Electronic & Information Technologies (VDE), and co-sponsored by the government of Upper Austria, the city of Linz, the Linz Center of Mechatronics (LCM), the University of Applied Sciences of Upper Austria, and the University of Linz. General Chairmen were Kurt Schlacher of the University of Linz, Austria, and Robert Weigel of the University of Erlangen-Nuremberg, Germany. Technical Program Chairmen were Andreas Springer of the University of Linz, Austria, and Gernot Kubin of the University of Graz, Austria. ISSSE 2004 provided a full 3-day program, which was composed of two keynote speeches, a large number of regular sessions, poster sessions, and a tutorial on smart antennas and MIMO. The symposium proved to be an inspiring forum for discussions, exchange of ideas, and the possibility to maintain and initiate fruitful networks between scientists and developers in the fields of signal- and system theory, electronic components, and communications engineering. After the review of nearly 130 submissions, 89 were accepted for presentation. Authors came from more than 20 countries, thereof 63% from Europe, 29% from Asia, and 8% from North America. During the symposium two best papers have been awarded. The winner of the ISSSE'04 URSI commission C Best Paper Award is Ronald Raulefs from the German Aerospace Center in Oberpfaffenhofen, Germany, for his paper entitled "Enhanced Detection Through Signal Space Diversity for a Coded MC-CDMA System", while Jan-Louis Sundermeyer from the Fraunhofer Institute for Integrated Circuits IIS in Erlangen, Germany, received the ISSSE'04 URSI commission D Best Paper Award for his paper "An Alexander Half-Rate Phase Detector for 80 Gb/s". For further information concerning ISSSE 2004 please refer to <http://www.icie.jku.at/issse04/>. The next ISSSE will presumably be held in Montreal, Canada in 2007.

2. Conferences Supported by Commission D

The following conferences were supported by Commission D:

- 2.1. MMET'02, Int. Conf. on Mathematical Methods in Electromagnetic Theory, Kiev, Ukraine, 10-13 September 2002,
- 2.2. Getting the Most out of the Radio Spectrum, London, U.K., 24-25 October 2002,
- 2.3. ISMOT 2003 - 9th Int. Symp. On Microwave and Optical Technology, Ostrava, Czech Republic, 11-15 August 2003,
- 2.4. 11th MICROCOLL, Budapest, Hungary, 10-11 September 2003,
- 2.5. CAOL 2003, Int. Conference on Advanced Optoelectronic and Lasers, Alushta, Crimea, Ukraine, 16-

- 20 September 2003,
 2.6. Telecom 2003 & JFMMA, Marrakech, Morocco, 15-17 October 2003,
 2.7. MSMW'04, Fifth Int. Kharkov Symposium on Physics and Eng of Microwaves, Millimeter- and Submillimeter-Waves, Kharkov, Ukraine, 21-26 June 2004,
 2.8. ISSSE'04, International Symposium on Signals, Systems and Electronics, Linz, Austria, 10-13 August 2004
 2.9. AP-RASC 04: 2004 Asia-Pacific Radio Science Conference, Beijing, China, 20-23 August 2004,
 2.10. ISMOT 2005 - 10th International Symposium on Microwave and Optical Technology, Fukuoka, Japan, 22-25 August 2005,
 2.11. CAOL 2005, Int. Conference on Advanced Optoelectronic and Lasers, Yalta, Crimea, Ukraine, 12-17 September 2005,

It already has been decided that the he following conference will be supported by Commission D in the next triennium from 2005 to 2008:

- 2.12. AP-RASC 07: 2007 Asia-Pacific Radio Science Conference, Perth, Australia,

3. The 2005 General Assembly

The technical areas of interest to Commission D have been well-supported for the Delhi General Assembly, with 89 oral papers and 6 poster papers. We are pleased that Prof. Dr. Paolo Lugli, (Munich University of Technology, Munich, Germany) gives the Commission D Tutorial on the subject of “**Nanoelectronics**”. The papers are scheduled in the following sessions:

- **D01 - Millimeter Wave Wireless Systems**, Roberto Sorrentino (Italy), Ching-Kuang C. Tzuang (China SRS),
- **D02 - Hardware Aspects of Metamaterial Structures (I,C,P)**, Convener: Tatsuo Itoh (USA), Co-convener: Christophe Caloz (Canada),
- **D03 - Si and SiGe RF integrated Circuits for Communications and Sensorics**, Convener: Robert Weigel (Germany),
- **D04 - Organic devices for radioscience applications**, Convener: Aldo Di Carlo (Italy)
- **D05 - Nanoelectronic devices (I,C,P)**, Paolo Lugli (Germany),
- **D06 - Device and circuit modelling**, Convener: Samir El-Ghazaly (USA),
- **D07 - Optical devices (I,C,P)**, Convener: Franz Kaertner (USA),
- **D08 - Frontend modules and integrated antennas (I,C,P)**, Convener: Stefan Lindenmeier (Germany),
- **DB1 - Near-field Characterization for optics and microwaves (I,C,P)**, Convener: Frédérique de Fornel (D, France), Co-convener: Kazuo Tanaka (B, Japan),
- **DB2 - CAD techniques for accelerated design of electronic and electromagnetic structures**, Convener: Natalia K. Nikolova (D, Canada), Co-convener: Roberto Sorrentino (B, Italy),
- **DP - Contributed Poster Session**, Convener: Maurice Pyée (France),
- **DT - TUTORIAL D – Nanoelectronics**, Convener: P. Russer (Commission Chair), Co-convener: F. de Fornel (Commission Vice-chair), Lecturer: Paolo Lugli (Germany),

Peter Russer,
 Chairman, Commission D