Electron Technology Conference 2016

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Editors

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4 Electronic and Photonic Materials
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   Romuald B. Beck, Warsaw University of Technology (Poland)
Introduction

The XIIth Conference on Electron Technology (ELTE 2016) was held 11–14 September 2016 in Wisła, Poland, and was organized by the Department of Electronics, Faculty of Computer Science, Electronics and Telecommunications of AGH University of Science and Technology in Kraków, Poland.

ELTE 2016 promotes the latest achievements in the widely understood field of electron technology and gathers scientists and exhibitors dealing with electronic and photonic materials and technologies, micro- and nanoelectronics, photonics, and microsystems. Since 1980, when the ELTE conference was held for the first time, the participants meet regularly for ELTE every three or four years.

The main purpose of the conference is to gather scientists enjoying the benefits of electron technology in different fields of interest and provide a forum for presentation of their newest research. Twelve periodic ELTE conferences have been already organized, including ELTE 2016. Listed below are the dates, organizers, and locations of past ELTE conferences:

1980 – Wrocław University of Technology; Karpacz, Poland
1984 – Institute of Electron Technology (later renamed to Institute of Microelectronics and Optoelectronics), Warsaw University of Technology; Rynia, Poland
1987 – Institute of Physics, Adam Mickiewicz University in Poznań, Poland
1990 – Institute of Electron Technology, Wrocław University of Technology, Poland
1994 – Institute of Microelectronics and Optoelectronics, Warsaw University of Technology, Szczyrk, Poland
1997 – Department of Electronics, AGH University of Science and Technology; Krynica, Poland
2000 – Wrocław University of Technology, Polanica Zdrój, Poland
2004 – Institute of Microelectronics and Optoelectronics, Warsaw University of Technology; Stare Jabłonki, Poland
2007 – Department of Electronics, AGH University of Science and Technology, Kraków, Poland
2010 – Institute of Microsystems Technology, Wrocław University of Technology; Wrocław, Poland
2013 – Institute of Microelectronics and Optoelectronics, Warsaw University of Technology; Ryn, Poland
2016 – Department of Electronics, AGH University of Science and Technology; Wisła, Poland.
The sessions and topics of ELTE 2016 were:

1) Micro- and Nanoelectronics:
   - simulation of technological processes
   - electrical, mechanical and thermal design and fabrication of semiconductor devices, integrated circuits and systems
   - micro- and nanotechnology (using electron, ion and molecular beams)
   - spintronics and magnetoelectronics
   - characterization and diagnostics of technological processes of semiconductor devices and integrated circuits
   - packaging and assembly of photonic and microelectronic devices and microsystems

2) Photonics
   - semiconductor light sources
   - plasmonics, photoelectric crystals
   - detectors and photovoltaics
   - new materials for optical applications
   - fiber optics and their applications
   - materials with nonlinear optical properties – physics, technology, applications

3) Microsystems
   - electrical, mechanical and thermal modeling and design of microsystems
   - design and fabrication of MEMS, MOEMS and NEMS
   - sensors and smart sensing structures
   - lab-on-chip systems
   - micro- and nanobiosystems
   - integration issues in modern semiconductor technology

4) Electronic and Photonic Materials
   - electronic materials
   - nanotechnology applications for manufacturing electronic and photonic materials
   - bio- and nanomaterials in electronic and photonic devices and microsystems
   - advanced methods of characterization of materials and electronic devices
   - hybrid and printed circuit boards technology.

Altogether during ELTE 2016, the following presentations were given:
   - 8 plenary presentations
   - 22 presentations within thematic sessions
   - 3 presentations delivered by sponsors
   - 75 poster presentations.

We warmly thank the reviewers from the scientific committees, who evaluated the articles and gave valuable remarks to the authors. ELTE 2016 would not exist without the enormous amount of time and effort volunteered by the local organizing committee.
We are also grateful to the SPIE staff for their continuing active support and valuable advice at every stage.

The next Electron Technology Conference will be organized by Wrocław University of Technology, Poland, in 2019.

Barbara Swatowska
Wojciech Maziarz
Tadeusz Pisarkiewicz
Wojciech Kucewicz