

Conference Report

**ERPOS 11 (Electrical and Related Properties of Organic Solids):
July 13-17, 2008, Piechowice, Poland**

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11th Electrical and Related Properties of Organic Solids conference was organized by the Institute of Physical and Theoretical Chemistry of Wrocław University of Technology, and was held in Piechowice, Poland from 13 to 17 July, 2008 gathering in total about 110 participants from 17 countries. The conference website <http://erpos-11.pwr.wroc.pl> supplies more information about the scientific committees, organizers, sponsors and detailed program content of this event.

The scope of the conference was relatively broad, ranging from electrical properties of materials and devices to nanophotonics and nonlinear optics, evidencing the evolution of contemporary science and technology. The state-of-the-art in molecular electronics and photonics was reported by 12 invited speakers eminent scientists from all the world, there were also 6 special lectures and 25 oral contributions. Conference was divided into 11 scientific sessions and one poster session with about 50 posters displayed. Organizers distinguished three best posters presented by young scientists.

During the introductory session devoted to photonics Francois Kajzar from Université d'Angers, France have reported on recent progress in application of electrooptic polymers while Joseph Zyss (Ecole Normale Supérieure de Cachan, France) make an excellent introduction to molecular microcavity lasers. Close to this subject was a talk given by Kenneth Singer from Case Western Reserve University, Cleveland, USA reporting on all-polymer distributed feedback lasers. Jean-Michel Nunzi from Queens University, Kingston, Canada introduced the novel Organic Dual Device (ODD) permitting for efficient integration of both light and current generation in rubrene/fullerene heterostructures. Packing motifs of molecules in organic semiconductor heterostructures were covered by Jacek Ulanski from Department of Molecular Physics, Technical University of Lodz, Poland. Organic luminescence and its deep understanding presented in the talk of Jan Kalinowski from Gdansk University of Technology, Poland will help in production of white and near-infrared organic LED's.

The technology state-of-the-art in production of flexible OLED's was given by Kyoshi Yase from Photonics Research Institute, AIST, Tsukuba, Japan. Hot subject related to organic solar cells was reported by Barry Rand representing SOLO/PME IMEC, Leuven Belgium. Stanislav Nespurek from Institute of Macromolecular Chemistry AS CR, Prague, Czech Republic described principles of functioning of phtahlocyanine based field-effect transistors and this subject viewed from the nonlinear optic observation of charge carriers in FET via second harmonic generation was reported by M. Iwamoto from Tokyo Institute of Technology, Tokyo, Japan.

An important impact to nanotechnology was given by an excellent talk of Kwang-Sup Lee from Hannan University, Daejeon, South Korea who is using two-photon photopolymerization process to fabricate precise 3D micro and nano-structures. Larry Luer from Politecnico di Milano, Italy showed how using femtosecond spectroscopy the dynamics of excitation in carbon nanotubes can be determined.

Besides the above mentioned lectures there were many other presenting new, interesting results; in my opinion the following papers should be pointed out as particularly original:

"Amplified spontaneous emission in dye-doped DNA-based material" by J. Mysliwiec, L. Sznitko and A. Miniewicz. Authors have demonstrated that DNA can be applied for dynamic holographic recording and also one can get amplified spontaneous emission in the systems based on dye-doped DNA. The obtained results indicate that such biopolymeric systems may find practical photonic applications.

"Functional conjugated polymers based on 3,4-ethylenedioxythiophene" by I.F. Perepichka. The paper presented development on functionalization of PEDOT; a novel platform for design of planar substituted polythiophenes based on benzene-annelated EDOT (PheDOT), allowing to develop new class of planar low bandgap functional PheDOTs for electronic applications. Since functionalization doesn't affect the planarity, tight packing of macromolecules is possible and charge carriers transport should be not deteriorated.

"Field-effect transistors based on phthalocyanines" by S. Nespurek et al. Paper demonstrated a new effect of modulation by illumination the source-drain current in OFET based on phthalocyanines via photo-induced dipolar field in the photoactive gate electrode made of photoconductive composite: poly[methyl(phenyl)silylene] mixed with photochromic compound.