

3rd Polish Optical Conference 2013 (PKO 2013)

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Abstract— The current issue of the Photonics Letters of Poland contains mainly selected papers that were presented during the 3rd Polish Optical Conference that was held from June 30th to July 4th, 2013 in Sandomierz, Poland. The remaining two papers included in the issue are regular contributions.

Optics is a very wide area of science that spans over many specific and well-developed areas of technology and both basic and applied science, frequently integrating various disciplines in general aim of creating light, tailoring its properties, and finally employing photons to probe properties of matter. The goal of the Polish Optical Conference, which took place in a beautiful city of Sandomierz from June 30th till July 4th, 2013 was to integrate Polish optical community, enable a forum for presenting the most recent research results and establishing contacts leading to future cooperation. This meeting followed two previous conferences held in Międzyzdroje in 2011 and in Będlewo in 2009. The Polish Optical Conference is organized primarily by the Optics Section of the Polish Physical Society. During these years, the scope of the conference has broadened considerably from fiber and quantum optics towards – among others - plasmonic as well spectroscopy and microscopy of materials, including biological structures.

In 2013 the program of the Polish Optical Conference comprised of 12 invited talks covering various aspects of optical sciences. In addition, over 30 contributed talks were given, mainly by young scientists, and approximately 50 posters were presented. This large number of contributions from many research institutions in Poland indicates the steady progress of the conference, which is likely to become the key forum for exchanging research results and ideas between Polish scientists involved in optical research.

In this issue of the Photonics Letters of Poland we include 13 papers that were presented during the 3rd Polish Optical Conference. They reflect the broad scope of the conference, which covered quantum and non-linear optics, optics and technology of lasers and other sources

of coherent radiation, optoelectronics, fiber optics and optical integrated systems, medical optics, optical spectroscopy and metrology, as well as novel optical materials.

The first two papers are devoted to technology of optical elements: fabrication of glass lenses (Kasztelanic *et al.*) and aspheric polishing (Gogler *et al.*). They are followed by analysis of thermal effects in Nd:YVO₄ Q-switched lasers (Kaskow *et al.*) and applications of picosecond Nd:YAG lasers (Strzelec *et al.*). The next section comprises papers focused on probing various materials with optical techniques. These include magnetic nanoparticles (Bacia *et al.*), boron-doped diamond films (Kraszewski *et al.*), nitrogen vacancies in diamond (Rudnicki *et al.*) and ZnO nanofibers imaged using extreme UV radiation (Wachulak *et al.*). This last technique has also been used to image biological samples, as was the limited – angle tomography, described in the subsequent article (Krauze *et al.*). The experimental section is completed by a paper by Nikodem *et al.* discussing techniques of optical fringes suppression. The selection of papers presented at the 3rd Polish Optical Conference is followed by three theoretical works discussing basic optical properties such as Malus law (Zdunek *et al.*) through proposing gauge-independent treatment of atoms in strong laser pulses (Slecza *et al.*) and modeling of advanced microwave-photon networks with optical fibers (Zakrzewski).

We would like to take this opportunity and thank all the Members of the Program Committee for their efforts in assuring the highest scientific level of presented papers. Also, we would like to express our gratitude to all the speakers and people that presented their posters during the conference. We believe that this format of the Polish Optical Conference has proven to be conducive to a fruitful exchange of ideas between researchers working on different aspects of optical science. We are looking forward for your participation in upcoming 4th Polish Optical Conference, which will take place in 2015.

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