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Waldemar Wojcik
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Introduction

The symposium Optical Fibers and Their Applications 2015 is a forum of national science in this branch of photonics. The symposium hosts a number of guests from this geographical region, and especially from Ukraine, Belarus, and Kazakhstan. It is organized every year and a half by two major optical fiber technology and application centers located in Białystok at Białystok University of Technology and in Lublin at Maria Curie-Skłodowska University and Technical University of Lublin. The conference belongs to a bigger circle of national conferences on optoelectronics, optics, photonics, sensors and laser technology which are under a general patronage of professional community organizations such as Polish Ceramic Society, Photonics Society of Poland, Polish Optoelectronics Committee of the Association of Polish Electrical Engineers, and the Section of Optoelectronics in the Committee of Electronics and Telecommunications, Polish Academy of Sciences.

On 22 –25 September 2015, the sixteenth conference on "Optical Fibers and Their Applications" was held at the Energetyk Resort in Nałęczów, near Lublin. The accompanying school/workshop on Optical Fiber Technology was held in Lublin at UMCS OFT Laboratory on 21 September. These conferences have been organized since 1976 in the Jabłonna Village Palace near Warsaw and then in a two year cycle in Białowieża, now in Lipowy Most (by Białystok University of Technology, Professor Jan Dorosz, with emphasis on applications, especially non-telecom ones) and in Krasnobród, now in Nałęczów (by UMCS Lublin, the late Doctor Jan Wójcik, Professor J. Rayss, now Doctor W. Podkościelny and Doctor P. Mergo, and Lublin University of Technology, Professor W. Wójcik, with emphasis on technology and telecom applications). The first conference in Białowieża, focused on non-telecommunication application of optical fibers and was held in 1982. During this period, the conferences in Lublin and then Krasnobród, now in Nałęczów, were more focused on technology and metrology of optical fibers supplementing the application and construction topics covered in Białowieża. The conference series on Optical Fibers and Their Applications has been organized in this country for 40 years. It was initiated by the late professors: J. Groszkowski, A. Smoliński, A. Waksmundzki, M. Pluta, B. Paszkowski, Z. Szpigler, J. Wójcik, K. Holejko, J. Rayss, S. Sońta. Forty years ago, optical fiber technology began in Poland. This anniversary was celebrated at the conference with a memorial jubilee session. The conferences always gathered a national group of optical fiber and optoelectronics experts and a large number of students and some international guests.

The sixteenth conference was opened by Professor W. Wójcik in the presence of the Rector of UMCS University and the Dean of the Faculty of Chemistry of UMCS. National expertise in optical fibers was centered in recent years around several big organizations, some of them with international roots: Section of

Optoelectronics, Committee of Electronics and Telecommunications, Polish Academy of Sciences; Polish Committee of Optoelectronics, Association of Polish Electrical Engineers; and the Polish Chapter of SPIE – The International Society for Optics and Photonics. The latter organization was transformed in 2008 to the Photonics Society of Poland. These organizations cooperate with SPIE, IEEE Poland Section and Photonics Chapter, Section of Optics by Polish Physical Society, and the Polish Ceramic Society.

During the conference's opening ceremony Professor W. Wójcik related to everyone the history of OFTA Nałęczów conferences. The national experts of guided wave, laser, and semiconductor optoelectronics meetings in Krasnobród, Nałęczów, Białowieża, Lipowy Most, and Świnoujście (Laser Technology Symposium) managed to integrate their activities into the framework of numerable optoelectronics research programs carried out during these years. These were programs: national, central, departmental, priority, university, and recently also European that were realized through a number of international partnerships. Realization of these projects led to numerable scientific and technical achievements as well as they were underlying factors for establishing a number of photonic firms in this country and modernizing the teaching at technical universities.

The 2015 Nałęczów conference gathered around 120 participants. More than 80 papers were presented in oral and poster sessions. The largest group of papers originated from such university centers active in optoelectronics as: Silesian University of Technology in Gliwice, Białystok, Warsaw and Lublin as well as UMCS in Lublin. The topical coverage of the symposium included: materials for optoelectronics – in particular materials for optical fiber technology, fabrication of optical fibers, components and sub-assemblies for optoelectronics, metrology of optical fibers, metrology of optoelectronic components and devices, applications of optical fibers, education in optoelectronics and photonics. A few plenary papers were presented that touched on very current and hot problems in optoelectronics.

The technological sessions of the symposium presented the works from three main national centers where optical fibers are pulled: the Faculty of Chemistry, University of Maria Curie Skłodowska in Lublin, the Faculty of Electrical Engineering at Białystok University of Technology, and the Institute of Electronic Materials Technology in Warsaw. A number of research centers in this country and internationally use these optical fibers for optical fiber sensors and photonic instrumentation devices. A large group of applications concern microstructural photonic optical fibers filled or impregnated with liquid crystals, which are highly nonlinear optical substances, much more nonlinear than glasses. This group of papers originated from the laboratories at Warsaw and Wrocław Universities of Technology. The fibers were manufactured at UMCS in Lublin and at ITME in Warsaw. There were also numerable application-oriented contributions from photonics innovative firms.

The symposium organizers have provided very favorable participation conditions for Ph.D. and M.Sc. students. As a result, they participated in the symposium in large numbers. The majority of the papers were presented by young researchers which supports the belief that this branch of technology is vivid and promising for future development. The Editors would like to thank Doctor Andrzej Smolarz from Lublin University of Technology for his devoted help as a technical editor of this volume of proceedings from the sixteenth conference on Optical Fibers and Their Applications, Nałęczów, 2015.

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