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Fourteenth School on Acousto-Optics and Applications

Ireneusz Grulkowski
Bogumił B. J. Linde
Martí Duocastella
Editors

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Introduction

The tradition of the Schools on Acousto-Optics and Applications (SAOA) conference dates back to the 1980s when international meetings were organized by the Institute of Experimental Physics of the University of Gdańsk in different places in the Pomeranian region (Jurata, Wieżyca, Gdańsk, Sopot). The last two editions of the conference were organized together with Vilnius University in Druskininkai, Lithuania (2014), and with the National University of Science and Technology MISIS in Moscow, Russia (2017). This issue contains selected papers presented at the 14th School on Acousto-Optics and Applications, which was held on 24-27 June, 2019, in Toruń, Poland.

The 14th SAOA attracted 53 senior and young scientists, engineers, and specialists from all over the world to disseminate their results, exchange ideas, and forge new connections or strengthen and consolidate ongoing collaborations. The participants came from 15 countries and four continents. The program of the 14th SAOA featured keynote lectures (X.L. Dean-Ben, M. Duocastella, P. Saggau), invited talks, (P. Kwiek, V.B. Voloshinov, V.I. Balakshy) and regular oral presentations. The conference focused on all physical aspects of light and sound interaction and provided an insight into recent technology developments of both pure and applied acousto-optics. In particular, the following topics were included in the program:

- theoretical and experimental studies of light diffraction by ultrasonic waves,
- acousto-optic devices and instruments,
- new materials and structures for acousto-optics signal processing,
- acousto-optic imaging and tomography,
- ultrafast and femtosecond acousto-optics,
- photoacoustic imaging and spectroscopy,
- optoacoustics and thermoacoustics,
- novel applications in acousto-optics.

A special session on novel acousto-optic materials and structures was dedicated to the memory of Prof. Lyudmila Kulakova who passed away on October 2018. The participants also had a chance to enjoy social events such as a visit to the Astronomical Observatory of the Nicolaus Copernicus University which houses the biggest radio telescope in Central Europe.

We acknowledge the organizers, Nicolaus Copernicus University and University of Gdańsk, as well as partners of the conference including Aleksander Jabłoński Foundation, Committee on Acoustics of the Polish Academy of Sciences, and SPIE Student Chapter at the Nicolaus Copernicus University, which participates in the SPIE Visiting Lecturer Program. We also express our sincere thanks to the organizations that provided financial support: Institute of Experimental Physics at

the University of Gdańsk, Polish Ministry of Science and Higher Education, The Optical Society (OSA), International Commission on Acoustics (ICA), and SPIE – The International Society for Optics and Photonics.

This proceedings volume is dedicated to the memory of Professor Vitaly Borisovich Voloshinov from Lomonosov Moscow State University who passed away suddenly three months after the conference. Prof. Voloshinov significantly contributed to Schools on Acousto-Optics and Applications for many years by serving a member of Scientific and Organizing Committee, by chairing sessions and integrating acousto-optic community through international cooperation. This issue includes 26 papers presented at the 14th SAOA. The topics covered here span from traditional acousto-optic research to novel applications of optics and acoustics (ultrasonics) with special attention to modern imaging technologies (microscopy) and spectroscopy.

Figure 1. Group photo of the attendees of the 14th School on Acousto-Optics and Applications in front of the Institute of Physics of the Nicolaus Copernicus University.

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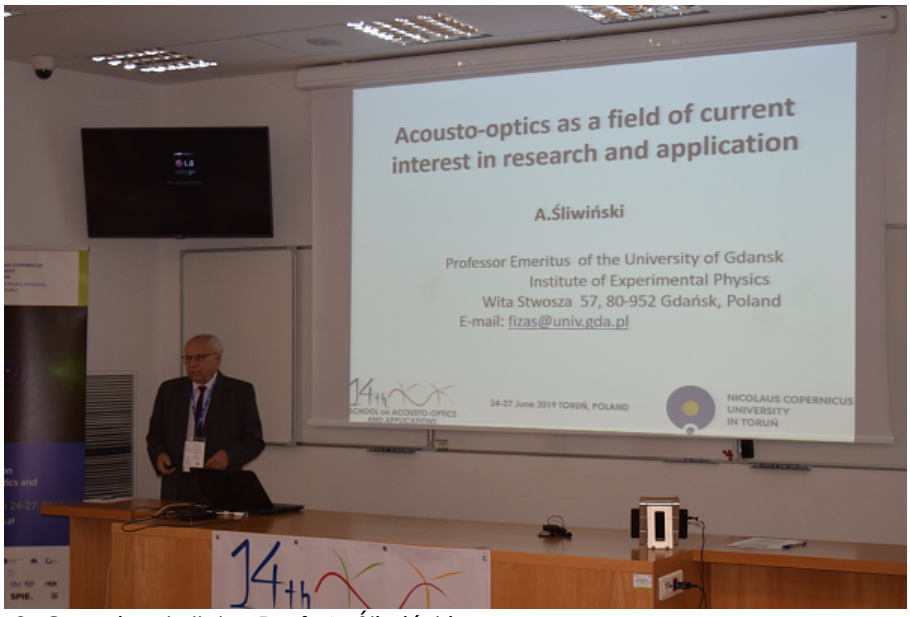

Figure 2. Opening talk by Prof. A. Śliwiński.

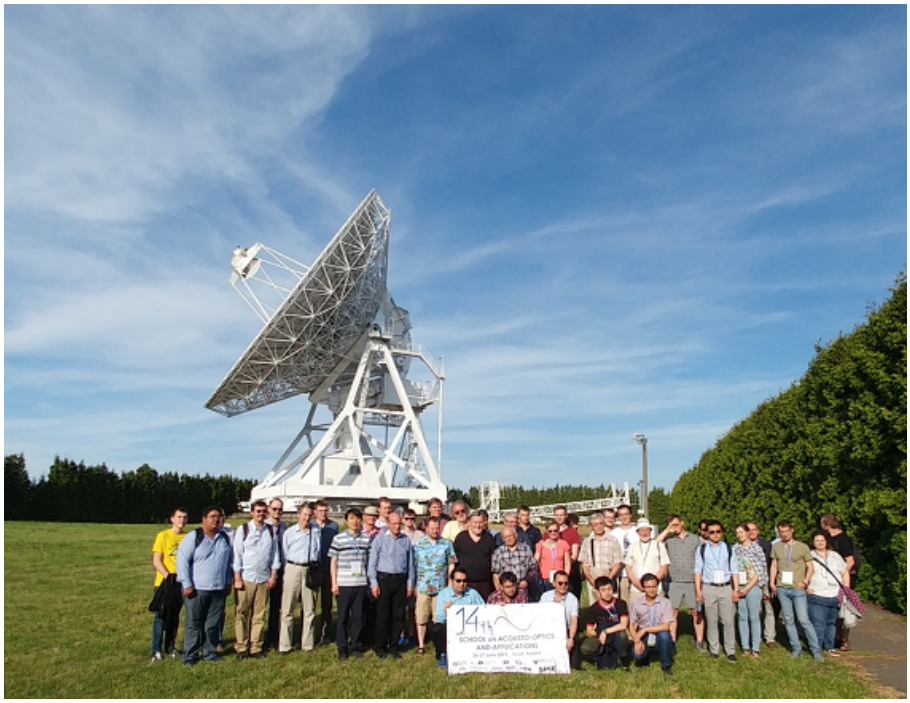
Figure 3. Visit to the Astronomical Observatory of the Nicolaus Copernicus University in Piwnice.

Figure 4. The participants during one of the sessions.

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