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Photonics Applications in Astronomy, Communications, Industry, and High Energy Physics Experiments 2022

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Editors

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Contents

vii	<i>Conference Committee</i>
ix	<i>Introduction</i>

CONFERENCE OVERVIEW

12476 02	Photonics applications and web engineering: WILGA 2022 [12476-1]
----------	---

BIOMEDICAL APPLICATIONS

12476 03	Study of tissue microcirculation disorders after tooth extraction by photoplethysmography in diabetic patients [12476-2]
12476 04	Imaging fuzzy expert system for assessing dynamic changes in biomedical tumor images in breast cancer (Invited Paper) [12476-3]
12476 05	Biomedical image segmentation method based on contour preparation [12476-4]
12476 06	Wavelet Mueller-matrix optical microscopy of vitreous body preparations in the determination of time of death [12476-5]
12476 07	The capabilities of modern rapid prototyping tools for developing training of computed tomography 3D models in phthisiology [12476-6]
12476 08	Azimuthally invariant system of Mueller-matrix polarization diagnosis of biological layers with fuzzy logical methods of decision making [12476-10]
12476 09	3D modeling capabilities for planning rhinologic surgical interventions from CT-datasets [12476-21]
12476 0A	The possibility of rapid prototyping in the manufacture of 3D models of cranial implants from CT-DATA [12476-32]
12476 0B	3D modelling and evaluation of parietal flow features in the nasal cavity [12476-35]
12476 0C	Filtering methods in speckle noise reduction in biomedical images [12476-39]

MATERIALS, METROLOGY, AND IMAGE PROCESSING

12476 0D	Development of a combined method for calculating coordinates of laser beam spots using a direct parallel-hierarchical transformation [12476-8]
----------	---

- 12476 OE **Pyramidal method of generalized spatially-connected processing and an example of its implementation in image processing** [12476-9]
- 12476 OF **3D digital technology differentiation of high-quality and low-quality organic polymers** [12476-11]
- 12476 OG **Numerical calculation of three-dimensional point spread function of optical systems** [12476-38]
- 12476 OH **3D digital method and algorithm for the reconstruction of the polymer films polycrystalline structure** [12476-13]
- 12476 OI **Design and implementation of ultrasonic self-oscillating and optical meters of media parameters** [12476-14]
- 12476 OJ **Digital metrology of polycrystalline networks of methyl acrylate layers** [12476-15]
- 12476 OK **Technology and algorithms of laser reconstruction of polycrystalline structure of methyl acrylate layers** [12476-18]
- 12476 OL **Information method of laser technology of temperature monitoring changes in the methyl acrylates optical anisotropy** [12476-19]
- 12476 OM **The concept of a technologically-advanced information system for automating the process of analyzing images obtained from hidden optoelectronic devices (Invited Paper)** [12476-23]
- 12476 ON **Soft real-time data processing solutions in measurement systems on example of small-scale GEM based X-ray spectrometer** [12476-25]
- 12476 OO **Rendering of inhomogeneous volumes using perturbation functions** [12476-26]
- 12476 OP **Section method for real-time monitoring of the surface shape of the laser beam radiation spot** [12476-28]
- 12476 OQ **Inverse correlation filters of objects features with optimized regularization for image processing** [12476-41]

COMPONENTS, COMMUNICATIONS AND ICT FOR PHOTONICS

- 12476 OR **Photonic detector for quantum applications: DiPho (Invited Paper)** [12476-34]
- 12476 OS **Digital restoration of signals in fiber optic transmission systems** [12476-30]
- 12476 OT **Coding methods for parallel-hierarchical transformation of optical information** [12476-33]
- 12476 OU **Forces balance in coordinate system of object's existence 3D space** [12476-7]
- 12476 OV **Multi-level compiler concept for high-level synthesis** [12476-20]

- 12476 OW **The console for management and control software system for mobile distribution point of ICT infrastructure** [12476-22]
- 12476 OX **VHDL-based universal programmable process for FPGA** [12476-24]
- 12476 OY **Method for visualizing volumetric caustics in single-scattering media based on beam tracking** [12476-27]
- 12476 OZ **GaP monolithic integer-n synthesizer application as RF system master oscillator for linear electron accelerator** [12476-31]
- 12476 10 **Assessment of the quality of information provided by combined radar airspace surveillance systems** [12476-36]
- 12476 11 **Assessing the reliability of the power supply system for the FGS experiment of the ARIEL satellite** [12476-37]
- 12476 12 **Parallel implementation of evolutionary partial differential equations by collocation optical-electronic schemes (Invited Paper)** [12476-40]
- 12476 13 **Simple opto-immittance converters** [12476-16]
- 12476 14 **Multifrequency optoimmittance logical R-element NOT** [12476-17]

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Introduction

The WILGA winter and summer meetings on Photonics Applications were initiated by the PERG-ELHEP Research Laboratory at the Institute of Electronic Systems of Warsaw University of Technology, Poland in 1995. The meetings started to be numbered with the winter edition of 1998, thus this year the summer edition was the 50th jubilee. The Photonics Engineering Research Group joined forces with the Electronics Laboratory for High Energy Physics Experiments Laboratory at IES WUT to start organizing international research meetings on the integration of photonics, electronics and mechatronics in demanding advanced applications.

To start a new series of conferences is not always easy. In this particular case, the factors that strongly supported the beginning process for these meetings had domestic and international cooperation with young research teams, friendly cooperation with key research organizations, international support from SPIE and IEEE, and domestic support from the Association of Polish Electrical Engineers. The essential factor was involvement of the initiating laboratory as well as international cooperation from laboratories like Deutsches Elektronen Synchrotron DESY in Hamburg, Germany; CERN in Geneva, Switzerland; Fermilab near Chicago, USA; and later with TJNAF in Newport News, USA; ITER in Cadarache, France; FAIR/GSI in Darmstadt, Germany; etc.

Since 2002 SPIE – The International Society for Optics and Photonics generously agreed to support the WILGA Symposium and publish the proceedings of these young researchers' meetings in the Proceedings of SPIE. The volumes were published annually from joint winter and summer editions of WILGA Symposium under the common title Photonics Applications in Astronomy, Communications, Industry and High-Energy Physics Experiments. For a number of years, SPIE has generously funded awards for the best student presentation in WILGA.

WILGA, the Photonics Applications Symposium, was held at a small village resort owned by Warsaw University of Technology, Poland and is located 50 kilometers up the Vistula river from Warsaw. During the 25 years of numbered editions of the WILGA Symposium on Photonics Application, the meetings gathered more than 6000 young researchers, among them the majority of Ph.D. students active in Photonics, who published more than 2000 papers in Proceedings of SPIE, and 1000 papers elsewhere.

The WILGA 2021 and 2022 Symposia on Photonic Applications gathered, partly via virtual links, a significant number of scholars from Ukraine who submitted content for publication which is reflected in this volume of Proceedings.

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