CONFERENCE PROGRAMME

INTEGRATED OPTICS - SENSORS, SENSING STRUCTURES and METHODS

Szczyrk 24.02-28.02.2020

24.02.2020 Monday

13:00	***Dinner***
14:30-14:35	**OPENING CEREMONY of the Conferences** **15th IOS'2020** **49th WSW&QA** **48th WSEA&V**
14:35-15:00	**Jubilee Session**
15:00-15:30	*Plenary lecture:* **Integrated Photonics – yesterday, today and tomorrow** R. PIRAMIDOWICZ, S. STOPIŃSKI, A. PAŚNIKOWSKA, M. SŁOWIKOWSKI, A. KAŹMIERCZAK, A. JUSZA, K. ANDERS, W. PLESKACZ, P. SZCZEPAŃSKI
15:30-16:00	*Plenary lecture:* **Nanoparticles-doped photonic liquid crystal fibers for enhanced efficiency of electric field tunability** T. R. WOLIŃSKI, K. BEDNARSKA, D. BUDASZEWSKI, M. CHYCHŁOWSKI, P. LESIAK, B. BARTOSEWICZ, Z.JANKIEWICZ, R.DĄBROWSKI
16:00-16:30	*Plenary lecture:* **Nonlocal Solitons** W. KRÓLIKOWSKI
16:30-17:00	***Coffee break***
17:00-17:20	*Plenary lecture:* **Vortex solitons propagation in planar nematic liquid crystals structures** U. A. LAUDYN, M. KWAŚNY, M. A. KARPIERZ
17:20-17:40	*Invited lecture* **Single-mode ytterbium doped nanostructured core optical fibers for high power laser applications** M. FRANCZYK, D. PYSZ, K. STAWICKI, J. LISOWSKA, A. FILIPKOWSKI, D. MICHALIK, R. STĘPIEŃ, T. OSUCH, M. BIDUŚ, M.DŁUBEK, R. BUCZYŃSKI
17:40-18:00	**Silicon nitride based building blocks for integrated photonics - design, technology and characterization** M. LELIT, M. SŁOWIKOWSKI, A. KAŹMIERCZAK, K. ANDERS, S. STOPIŃSKI, M. JUCHNIEWICZ, B. STONIO, B. MICHALAK, M. FILIPIAK, K. PAVŁOV, P. WIŚNIEWSKI , R. B. BECK, R. PIRAMIDOWICZ
18:30	***Supper***
19:30	**MUSIC GLANCE**

25.02.2020 Tuesday

8:00	***Breakfast***
13:00	***Dinner***
14:30-15:00	*Plenary lecture:* **Twist induced mode confinement in partially open ring of holes** G. STATKIEWICZ-BARABACH, M. NAPIÓRKOWSKI, K. ŻOŁNACZ, M. BERNAŚ, A. KICZOR, P. MERGO, W. URBAŃCZYK
15:00-15:20	*Invited lecture* **Integrated multichannel transmitters for telecom and datacom applications** A. PAŚNIKOWSKA, S. STOPIŃSKI, A. KAŹMIERCZAK, R. PIRAMIDOWICZ
15:20-15:40	**Elimination of outliear and uncertain data in sensing devices aimed for in-situ and environmental use** M. BORECKI, P. PRUS, A. OLEJNIK, J. SZMIDT
15:40-16:00	**Generation optical vortex beam in Liquid media using novel nanostuctured vortex phase masks** H.T NGUYEN, K. SWITKOWSKI, R. KASZTELANIC, A. ANUSZKIEWICZ, A. FILIPKOWSKI, H.V LE, D. PYSZ, R. STEPIEN, W. KROLIKOWSKI, R. BUCZYNSKI
16:00-16:20	**Modeling of self-organized, one-dimensional periodic structures in a gold nanoparticle-doped nematic liquid crystal composite** P. LESIAK, K. BEDNARSKA, A. FRONCZAK, P. FRONCZAK, T. R. WOLIŃSKI
16:20-17:00	***Coffee break***
17:00-17:20	*Invited lecture* **Application of Artificial Intelligence for Optimization of Organic Solar Cells Production Process** G. LO SCIUTO
17:20-17:40	*Invited lecture* **Light depolarization by nematic liquid crystals** P. MARĆ, N. BENNIS, R. WĘGŁOWSKI, A. SPADŁO, K. GARBAT, D. WĘGŁOWSKA, E. PAWLIKOWSKA, A. PAKUŁA, L. R. JAROSZEWICZ
17:40:18:00	**Pattern formation in a gold nanoparticles-doped nematic liquid crystal composite by optical methods** K.BEDNARSKA, P. LESIAK, A.SITKIEWICZ, T.WOLIŃSKI
18:00-18:20	**The practice of accepting gas sensors for commercial purposes** A.PACHOLE
18:20-18:35	**Analysis of energy characteristics of the UV communication system based on LED matrices** G. S. VASILYEV, D. I. SURZHIK, O. R. KUZICHKIN
18:35-18:50	**Performance analysis of MIMO communication system with NLOS UV channel** D. I. SURZHIK, G. S. VASILYEV, O. R. KUZICHKIN
19:30	***Festive Supper (Banquet)***

26.02.2020 Wednesday

8:00	***Breakfast***
13:00	***Dinner***
14:30-15:00	*Plenary lecture:* **Optical properties of achromatic flat-surface gradient index microlenses** R. BUCZYNSKI, A. FILIPKOWSKI, H. T. NGUYEN, D. PYSZ, R. STEPIEN, A. WADDIE, M. R. TAGHIZADEH, R. KASZTELANIC
15:00-15:20	*Invited lecture* **Improvement properties of optical fibers for distributed sensors** P. MERGO, A. PAŹDZIOR, M. MAKARA, K. POTURAJ, G. WÓJCIK, L. CZYŻEWSKA
15:20-15:40	*Invited lecture* **Effect of thermal annealing on sensing properties of optical fiber sensors coated with indium tin oxide nano-overlays** B.MICHALAK, P. SEZEMSKY, V. STRANAK, M. SMIETANA
15:40-16:00	*Invited lecture* **Applicable ultrafast all-optical switching by soliton self-trapping in high index contrast dual-core fiber** M. LONGOBUCCO, P. STAJANČA, L. ČURILLA, D. PYSZ, R. BUCZYŃSKI, I. BUGÁR
16:00-16:20	**Response of a broadband differential interferometer to a change in waveguide thickness** K. GUT
16:20-17:00	***Coffee break***
17:00-17:20	*Invited lecture* **Ultra-dense endoscopic bundles** R. KASZTELANIC, D. PYSZ, R. STEPIEN, R. BUCZYNSKI
17:20-17:40	**Experimental analysis of axial stress distribution in nanostructured core fused silica fibers** A. ANUSZKIEWICZ, M. BIDUS, A. FILIPKOWSKI, D. PYSZ, M. DLUBEK, R. BUCZYNSKI
17:40-18:00	**Methodology for extraction of thin film properties based on semi-analytical optical parameters extraction approach** M. KIELISZCZYK, B. JANASZEK, P. SZCZEPAŃSKI
18:00-18:20	**Optical properties of realistic hyperbolic metamaterials** B. JANASZEK, M. KIELISZCZYK, A. TYSZKA-ZAWADZKA, P. SZCZEPAŃSKI
18:30	***Supper***
19:30-21:00	**POSTER SESSION**

27.02.2020 Thursday

8:00	***Breakfast***
13:00	***Dinner***
14:30-15:00	*Plenary lecture:* **Soft sensor design for measuring liquid volume** K. MURAWSKI
15:00-15:20	*Invited lecture* **The endomicroscopy probe based on micro-interferometer Mirau and 2-axis microscanner fabricated in MOEMS/MEMS technology for SS-OCT imaging** P. STRUK, F. E. GRACIA-RAMIREZ, S. BARGIEL, Q. TANGUY, O. GAIFFE, R. CHUTANI, N. PASSILLY, P. LUTZ, J-M. COTE, H. XIE, C GORECKI
15:20-15:40	**Photonic integrated circuits for portable OTDR systems** S. STOPIŃSKI, K. ANDERS, S. SZOSTAK, R. PIRAMIDOWICZ
15:40-16:00	**Direct ink writing of water-sensitive glass: towards optical application** P.GOŁĘBIEWSKI, B. NAN, R. BUCZYŃSKI, F.J. GALINDO-ROSALES, J.M.F. FERREIRA
16:00-16:20	**ASPIC-based photonic system for monitoring breath/respiratory rate of patient under MRI diagnosis** M. SŁOWIKOWSKI, A. KAŹMIERCZAK, M. BIENIEK, S. SZOSTAK, T. OSUCH, M. KREJ, Ł. DZIUDA, S. STOPIŃSKI, R. PIRAMIDOWICZ
16:20-17:00	***Coffee break***
17:00-17:20	*Invited lecture* **Methodology for measuring the size of gaps with an optical proximity sensor on the example of a centrifugal blood pump** M. GAWLIKOWSKI, P. KURTYKA, J. ZALEWSKI, M. ZARWAŃSKA-DOFFEK, A. KAPIS
17:20-17:40	**Analysis of neural networks parameters for improved face recognition performance** A. GRUDZIEŃ, M. KOWALSKI, N. PAŁKA
17:25-17:40	**Optoelectronic motion tracking system for virtual reality shooting symulator** M. MACIEJEWSKI, M. PISZCZEK, M. POMIANEK, N. PAŁKA
18:00-18:20	**Measurement setup for determination of spectral characteristics of leaves** A. MAZIKOWSKI, M. FELDZENSZTAJN
18:20	***Closing ceremony***
18:30	***Supper***

POSTER SESSION

Application of optical sensor for measurements of lightning strike currents
K. BARCZAK, D. DUDA

Model of the broadband interferometric optical biosensor in the planar configuration
M. BŁAHUT

Optical properties of achromatic flat-surface gradient index microlenses
R. BUCZYNSKI, A. FILIPKOWSKI, H. T. NGUYEN, D. PYSZ, R. STEPIEN, A. WADDIE, M. R. TAGHIZADEH, R. KASZTELANIC

Spectral properties of photonic crystal fibers infiltrated with nanoparticles-doped ferroelectric liquid crystals
D.BUDASZEWSKI, K. WOLIŃSKA, B. JANKIEWICZ, B. BARTOSEWICZ, T. R. WOLIŃSKI

Influence of electric field frequency on optical response of photonic crystal fibers infiltrated with NP-doped liquid crystals
M.S. CHYCHŁOWSKI, B. BARTOSEWICZ, B. JANKIEWICZ, T.R. WOLIŃSKI

Organic lanthanide complexes obtained from the recycling of nickel metal hydride batteries for active optical fiber technology
L. CZYŻEWSKA, M. GIL-KOWALCZYK, D.KOŁODYŃSKA, Z. HUBICKI, P. MERGO

The influence of selected gases on reduced graphene oxides
S. DREWNIAK, M. PROCEK, R. MUZYKA

Purification of tellurite glasses for mid-infrared applications
X. FORESTIER, M. KLIMCZAK, R. BUCZYŃSKI

Optimization of PMMA and PS granulates extrusion process for polymer optical fiber technology
M. JÓŹWICKI, **M. GIL-KOWALCZYK**, M. GARGOL, P. MERGO

The direct laser writing system for mask-based lithography based on confocal microscopy
K. GUT, S. STUDENT

Novel directional coupler utilizing hyperbolic metamaterial: coupled mode formulation by reciprocity
A. TYSZKA-ZAWADZKA, **B. JANASZEK**, M. KIELISZCZYK, P. SZCZEPAŃSKI

Study of sensing properties of UV activated organic-inorganic blend of graft comb copolymer and ZnO nanomaterial for room temperature NO_2 gas sensing applications in ppm and sub-ppm range
P. KAŁUŻYŃSKI, M. PROCEK, A. STOLARCZYK

Optical fiber sensors for rotational seismology – field measurements for data comparability analysis
A. T. KURZYCH, L. R. JAROSZEWICZ, M. DUDEK, J. K. KOWALSKI

Bending loss analysis in silica hollow core antiresonant fibers fabricated with single capillary or nested capillary claddings
B. LOU, G. STĘPNIEWSKI, D. PYSZ, L. ZHAO, R. BUCZYŃSKI, M. KLIMCZAK

Perimeter protection of east EU border rivers

N. PAŁKA, J. MŁYŃCZAK, M. ŻYCZKOWSKI, M. KAROL, **M. MACIEJEWSKI**, M. KOWALSKI, P. MARKOWSKI, M. SZUSTAKOWSKI, K. CICHULSKI, S. BRAWATA, G. GRZECZKA, A. ADAMCZYK

Design of displacement sensor based on Fiber Bragg Grating for long-range extension measurements of pipeline compensators

E. MACIAK, W. KOSTOWSKI, G. GŁUSZEK, D. ADAMECKI, Z. OPILSKI, T. PUSTELNY

Optical fiber distributed sensors in objects subject to conservation protection

A. PAŹDZIOR, **M.Z MAKARA**, J. KOPEĆ, P. MERGO

Fusion splicing and termination of silica hollow core anti-resonant fibers with single mode fibers

Y. MIN, A. FILIPKOWSKI, G. STĘPNIEWSKI, M. KLIMCZAK, L. ZHAO, R. BUCZYŃSKI

Effects of cladding modification tapered optical fiber on optical properties of propagated light

J.MOŚ, K. A. STASIEWICZ, L.R. JAROSZEWICZ

The use of silk fibroin in a fiber optic humidity sensor

Z. OPILSKI, M. PROCEK, S. AZNAR-CERVANTES, J. LUIS CENIS, X. MUÑOZ BERBEL

The importance of monitoring the vergence eye movements for solutions using virtual technologies

M. PISZCZEK, **M. POMIANEK**, M. MACIEJEWSKI, L. JODŁOWSKI, P. KRUKOWSKI

The stability of the MEMS 2D mirror's operating point in terms of eye tracking systems

M. POMIANEK, M. PISZCZEK, M. MACIEJEWSKI, L. JODŁOWSKI, P. KRUKOWSKI

Sensing applications of LC:PDMS photonic systems

K.A. RUTKOWSKA, P. SOBOTKA, SZ. BACZYŃSKI, K. MARCHLEWICZ, A. DYBKO

Methodology for assessing near-infrared absorption properties of historical materials and microorganisms from objects in the collections of the Auschwitz-Birkenau State Museum in Oświęcim

D. RYBITWA, E. MACIAK, M. PROCEK, P. KAŁUŻYŃSKI, A. WAWRZYK

Fabrication aspects of silicon nitride photonics integrated circuits

M. SŁOWIKOWSKI, M. LELIT, M. JUCHNIEWICZ, B. STONIO, B. MICHALAK, M. FILIPIAK, K. PAVŁOV, P. WIŚNIEWSKI, S. STOPIŃSKI, R. PIRAMIDOWICZ, R. B. BECK

Optical properties of one-dimensional tin oxide nanostructures

W.SMOK, W.MATYSIAK, T. TAŃSKI

Numerical analysis of integrated photonics structures obtained by FDTD method

P. STRUK

Evanescent wave transducers based on grating couplers embossed in silica-titania waveguide films

C. TYSZKIEWICZ, P. KARASIŃSKI, A. KAŹMIERCZAK

Chromatic dispersion engineering in nanostructured graded-index silica fiber tapers for supercontinuum generation

J. ZHOU, A. FILIPKOWSKI, G. STĘPNIEWSKI, D. MICHALIK, M. KLIMCZAK, L. ZHAO, R. BUCZYŃSKI