

24th CZECH-POLISH-SLOVAK OPTICAL CONFERENCE

ON WAVE AND QUANTUM ASPECTS OF CONTEMPORARY OPTICS



CONFERENCE PROGRAMME

14-18 September 2026 · Hotel Horizont · Pec pod Sněžkou, Czech Republic

ORGANISERS AND CO-ORGANISERS



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Monday, 14 September 2026

FULL DAY

TIME	REGISTRATION	WELCOME PROGRAMME
14:00-16:00	REGISTRATION 14:00-20:00 · Open continuously	
16:00-17:30		WELCOME PARTY 16:00-17:30
17:30-19:00		DINNER 17:30-20:00
19:00-20:00		

Tuesday, 15 September 2026

07:00-08:00	Breakfast (available until 9:30)	
08:00-08:30	Opening of the conference · Main Hall	
08:30-10:00	Plenary Session 1 · Quantum and ultrafast photonics Main Hall · 08:30-10:00 · Chair: Petr Kužel	
08:30-09:15	08:30-09:15 PL-01 · PLENARY · R. Filip · Quantum Non-Gaussian Optics	
09:15-10:00	09:15-10:00 PL-02 · PLENARY · M. Kozák · Ultrafast valleytronics in bulk semiconductors	
10:00-10:30	Coffee Break	
TIME	Terahertz spectroscopy, ultrafast currents and spin dynamics Main Hall · 10:30-12:20 · Chair: Jan Chochol	Nonclassical states, quantum correlations and measurements Modular Hall · 10:30-12:25 · Chair: Ivan Richter
10:30	10:30-10:55 IN-01 · INVITED · P. Kužel · Ultrafast dynamics of terahertz plasmons in epitaxial graphene nanostructures	10:30-10:55 IN-03 · INVITED · K. Thapliyal · Engineering Nonclassical Light for Quantum Technology from Gaussian States
10:55	10:55-11:20 IN-02 · INVITED · Ł. Sterczewski · Ultra-broadband THz time-domain spectroscopy using organic nonlinear crystals	10:55-11:10 OT-05 · ORAL · J. Fiurášek · Characterization of quantum states of light with multiplexed binary click detectors – stellar rank, nonclassicality, and photon statistics
11:10		11:10-11:25 OT-06 · ORAL · J. Peřina, Jr. · Quantum Correlations in Three-Beam Symmetric Gaussian States Accessed via Photon-Number-Resolving Detection and Quantum Universal Invariants
11:20	11:20-11:35 OT-01 · ORAL · M. Mičica · Terahertz electronic and spin currents in wafer-scale van der Waals Bi ₂ Se ₃ /WSe ₂ heterostructures and polymorphs	11:25-11:40 OT-07 · ORAL · P. Pavlíček · Experimental investigations of non-classical properties of a structured twin-beam
11:25		
11:35	11:35-11:50 OT-02 · ORAL · J. Liu · Terahertz time-domain spectroscopic ellipsometric determination of dopant concentration in 4H-SiC	11:40-11:55 OT-08 · ORAL · J. Kadlec · Resource-efficient entanglement detection in high-dimensional states via two-qubit witnesses
11:40		
11:50	11:50-12:05 OT-03 · ORAL · J. Toběrný · Modeling of ultrafast spin dynamics for enhancement of spintronic terahertz emission	11:55-12:10 OT-09 · ORAL · T. Sowiński · Entanglement of photons produced by positronium annihilation
11:55		
12:05	12:05-12:20 OT-04 · ORAL · P. Machnikowski · Controlling quantum dot charge and spin states with sound	12:10-12:25 OT-10 · ORAL · P. Zemánek · Quantum and classical nanoparticle levitodynamics
12:10		
12:20		
12:25-14:00	Lunch	

Tuesday, 15 September 2026

AFTERNOON · AFTER LUNCH

14:00-15:30	Plenary Session 2 · Holographic and computational bioimaging Main Hall · 14:00-15:30 · Chair: Lukas Halagacka	
14:00-14:45	14:00-14:45 PL-03 · PLENARY · T. Čižmár · Holographic Endoscopy for Neuroscience Advancements	
14:45-15:30	14:45-15:30 PL-04 · PLENARY · M. Rogalski · Lensless holographic microscopy and tomography from deep UV to near IR for enhanced bioimaging on a standard sensor	
15:30-16:00	Coffee Break	
TIME	Advanced optical fibres, modal control and distributed sensing Main Hall · 16:00-17:25 · Chair: Katarzyna Krupa	Computational holography, lensless imaging and microfabrication Modular Hall · 16:00-17:25 · Chair: Jan Popelek
16:00	16:00-16:25 IN-04 · INVITED R. Buczynski · Analysis of the Optical Properties of Free-Form Nanostructured-Core Fibers for Data Transmission Systems	16:00-16:25 IN-05 · INVITED L. Kotačka · Microoptics in every pocket – the most frequent use of optics in our lives
16:25	16:25-16:40 OT-11 · ORAL M. Napiórkowski · Efficient perturbation-based optimization of individual spatial modes in nanostructured optical fibers	16:25-16:40 OT-15 · ORAL T. Kohut · New achievements in holographic gray-scale structures fabrication using direct laser writing lithography
16:40	16:40-16:55 OT-12 · ORAL T. Martynkien · Design and experimental characterization of conventional and microstructured D-type optical fibers	16:40-16:55 OT-16 · ORAL R. Kotyński · Optimizing Diffraction in Digital Micromirror Devices for Single-Pixel Imaging and Incoherent Holography
16:55	16:55-17:10 OT-13 · ORAL A. Bednarek · Single optical fiber line setup using K-type side-hole fiber for simultaneous Rayleigh-based distributed measurements of hydrostatic pressure and temperature	16:55-17:10 OT-17 · ORAL J. Dudek · Extending the Field of View in Lensless Holotomography via Limited Projection Reconstruction
17:10	17:10-17:25 OT-14 · ORAL P. Perehinec · Antiresonant Hollow-Core Fibers: Overcoming Practical Challenges in Gas Sensing	17:10-17:25 OT-18 · ORAL K. Glinka · Gigapixel-Scale Lensless Holography with Robust Spatially Varying Numerical Refocusing
17:25-19:00	Poster Session 1	
19:00-21:00	Dinner	

Wednesday, 16 September 2026

07:00-08:30	Breakfast (available until 9:30)
08:30-15:00	Hiking Trip / Free Programme
15:00-16:35	Plenary session 3 - Quantum, Photonic & Glass Technologies Main Hall · 15:00-16:35 · Chair: Kamil Postava
15:00-15:45	15:00-15:45 PL-05 · PLENARY J. Chochol · Enabling Quantum Technologies with Wide-Bandgap Semiconductors: Progress and Challenges
15:45-16:10	15:45-16:10 IN-06 · INVITED I. Richter · Photonics Research at the Department of Laser Physics and Photonics FNSPE CTU in Prague
16:10-16:35	16:10-16:35 IN-07 · INVITED J. Kočárek · Glass-moulded optics – design and challenges
16:35-17:00	Coffee Break
17:00-18:30	Opening of the Czech–Polish Photonics 2026 workshop · Main Hall K. Postava / R. Silber / P. Přikryl
17:00–17:30	Introduction of the Czech Optical Cluster and the Polish Technological Platform on Photonics
17:30–18:30	Pitch session: introduction of workshop participants and members of COC and PTPP
18:30-01:00	Conference & Workshop Gala Dinner

Thursday, 17 September 2026

07:00-08:30	Breakfast (available until 9:30)	
08:30-10:30	Czech–Polish Photonics 2026 Workshop Main Hall · 08:30-10:30 · Chair: K. Postava / R. Silber / P. Přikryl	
08:30-08:45	08:30-08:45 WT-01 · WORKSHOP · T. Kolcon	AI-Powered Precise Positioning Workstation
08:45-09:00	08:45-09:00 WT-02 · WORKSHOP · K. Nejezchleb	Innovative Laser and Scintillation Materials for Modern Applications
09:00-09:15	09:00-09:15 WT-03 · WORKSHOP · P. Psota	Advanced Fizeau Interferometry for Complex Optics: Wavelength Tuning, Absolute Metrology and Subaperture Stitching
09:15-09:30	09:15-09:30 WT-04 · WORKSHOP · O. Pavelka	Laser switching of phase change materials for active photonic devices - a custom solution
09:30-09:45	09:30-09:45 WT-05 · WORKSHOP · V. Kulas	LIBA 2000+: The only glass with optic parameters produced in the Czech Republic
09:45-10:00	09:45-10:00 WT-06 · WORKSHOP · D. Štys	The idealized digital optical microscope and other hyperspectral camera applications
10:00-10:15	10:00-10:15 WT-07 · WORKSHOP · P. Kowalczewski	Maskless micro-deposition for photonics: from reticles to high-frequency interconnects
10:15-10:30		
10:30-11:00	Coffee Break	
TIME	Chiral sensing, optical metrology and computational diagnostics Main Hall · 11:00-12:25 · Chair: Ioachim Pupeza	Nonlinear photonics, plexcitonic materials and photoinduced dynamics Modular Hall · 11:00-12:25 · Chair: Tibor Fordos
11:00	11:00-11:25 IN-08 · INVITED · D. Vala · ROAspect: A Raman Optical Activity platform for chirality determination in research and pharmaceutical analysis	11:00-11:25 IN-09 · INVITED · K. Krupa · Recent advances in the development and fundamental study of spatiotemporal multimode fiber lasers
11:25	11:25-11:40 OT-19 · ORAL · B. Górski · Lensless Holographic Detection of Circular Dichroism for High-throughput High-resolution Chiral Sensing	11:25-11:40 OT-23 · ORAL · P. Wróbel · Nanogap plexcitonic structures for tailoring strong light-matter coupling
11:40	11:40-11:55 OT-20 · ORAL · M. Rogalski · Algorithm for minimizing the replica overlap problem in common-path shearing microscope	11:40-11:55 OT-24 · ORAL · M. Brzoska · Temperature-Dependent Optical Properties of Two-Dimensional Hybrid Perovskites for Plexcitonic Systems
11:55	11:55-12:10 OT-21 · ORAL · J. Řeháček · Optimizing measurement tradeoffs in multiparameter spatial superresolution	11:55-12:10 OT-25 · ORAL · O. Kochanowska · Optical sensing with hyperbolic nanodisks
12:10	12:10-12:25 OT-22 · ORAL · W. Forjasz · Attention-Enhanced Deep Learning Approach for Optical Vortex Localization	12:10-12:25 OT-26 · ORAL · D. Pudiš · Dielectric mirrors for on-chip applications inspired by blue morpho
12:25-14:00	Lunch	

Thursday, 17 September 2026

AFTERNOON · AFTER LUNCH

14:00-15:30	Plenary Session 4 · Biomedical spectroscopy and plasmonic biosensing Main Hall · 14:00-15:30 · Chair: Lukas Halagacka	
14:00-14:45	14:00-14:45 PL-06 · PLENARY · I. Pupeza · Electric-field-resolved infrared spectroscopy for biology and medicine	
14:45-15:30	14:45-15:30 PL-07 · PLENARY · J. Homola · Advances in plasmonic biosensors and their biomedical applications	
15:30-16:00	Coffee Break	
TIME	Biomedical optical modelling, microscopy and phase imaging Main Hall · 16:00-17:25 · Chair: Daniel Vala	Integrated Photonics for Sensing and Spectroscopy Modular Hall · 16:00-17:25 · Chair: Maciej Dems
16:00	16:00-16:25 IN-10 · INVITED P. Koleják · Full-Wave Modeling of the Electric-Field-Resolved Mid-Infrared Response of Biological Cells	16:00-16:25 IN-11 · INVITED M. Feiler · Nanophotonic Membrane Waveguides for Mid-Infrared Gas Sensing: From Device Physics to Integrated System
16:25	16:25-16:40 OT-27 · ORAL B. Krajník · Overcoming ensemble limitations in upconverting nanoparticles using single-particle fluorescence microscopy	16:25-16:40 OT-31 · ORAL J. Olszewski · GaAs-based Integrated Photonics: From Near-IR Waveguide Validation to Mid-IR Gas Sensing
16:40	16:40-16:55 OT-28 · ORAL M. Krysa · The mixture of glycerin and tartrazine: a solution to reversibly increase tissue transparency for in vitro quantitative phase imaging	16:40-16:55 OT-32 · ORAL P. Chmielowski · Laser-based gas sensing – simplifying and accelerating data analysis using neural networks
16:55	16:55-17:10 OT-29 · ORAL W. Ogonowski · Dynamic Loss Weighting for Improved High-Frequency Reconstruction in Single-Frame Phase Retrieval	16:55-17:10 OT-33 · ORAL M. Gryga · A metal-dielectric photonic crystal-based gas sensor with phase response of exceptionally high in both sensitivity and FOM
17:10	17:10-17:25 OT-30 · ORAL L. Lu · Physics-Unrolled Deep Learning Framework for Accurate Quantitative Phase Imaging	17:10-17:25 OT-34 · ORAL N. Tarjányi · Binary organic mixture detection using PDMS swelling
17:25-18:55	Poster Session 2	
19:00-21:00	Dinner	

Friday, 18 September 2026

FULL DAY

07:00-08:30		Breakfast (available until 9:30)	
TIME	Integrated Photonics and Semiconductor Lasers Main Hall · 08:30-10:20 · Chair: Lukasz Sterczewski	Magneto-optics and quantum light-matter interactions Modular Hall · 08:30-10:20 · Chair: Robin Silber	
08:30	08:30-08:55 IN-12 · INVITED · M. Ziman · System-Level Photonic Integration of WERS Circuits on Silicon Nitride	08:30-08:55 IN-14 · INVITED · J. Hamrle · Quadratic and cubic magneto-optical Kerr effect	
08:55	08:55-09:20 IN-13 · INVITED · M. Dems · Multiphysics Modelling of Photonic Structures with Photonic Laser Simulation Kit (PLaSK)	08:55-09:20 IN-15 · INVITED · Y. Dadoenkova · Magneto-optic sol-gel nanocomposites for the functionalization of micropatterned structures for integrated photonics	
09:20	09:20-09:35 OT-35 · ORAL · A. Trajnerowicz · A Comprehensive Technology Platform for VCSEL Development at Łukasiewicz-IMiF	09:20-09:35 OT-39 · ORAL · D. Javůrek · Magnetically tunable cutoff of the odd LRSP mode in a double-slab magneto-plasmonic waveguide at 1.55 μm	
09:35	09:35-09:50 OT-36 · ORAL · O. Hejtman · Quantum Cascade Surface-Emitting Laser	09:35-09:50 OT-40 · ORAL · N. Ghangas · Non-classical optical dynamics of periodic dielectric layers embedded with multi-level atoms	
09:50	09:50-10:05 OT-38 · ORAL · L. Hvozďara · Concept of a monolithic photonic integrated circuit for precision frequency comb control	09:50-10:05 OT-41 · ORAL · W. Leoński · Generation and transfer of entanglement in a hexagonal spin system	
10:05	10:05-10:20	10:05-10:20 OT-42 · ORAL · P. Machnikowski · Fano profile in the resonance fluorescence spectrum of a quantum dot coupled to phonons	
10:20-10:50		Coffee Break	
TIME	Machine learning and collective measurements in quantum optics Main Hall · 10:50-11:50 · Chair: Dalibor Javurek	Adaptive and reconfigurable photonic materials and systems Modular Hall · 10:50-11:50 · Chair: Jan Popelek	
10:50	10:50-11:05 OT-43 · ORAL · R. Machulka · Machine learning as a tool in quantum optics: nonclassicality quantification and detection-efficiency estimation	10:50-11:05 OT-47 · ORAL · T. Stefaniuk · Adaptive optical systems enabled by ionic and electronic transport	
11:05	11:05-11:20 OT-44 · ORAL · A. Kowalewska-Kudłaszyk · Non-classical State Preparation in Driven Hybrid Optomechanical Systems: From Blockade to Squeezing	11:05-11:20 OT-48 · ORAL · K. Brańko · Light-driven control of subwavelength metallic filament dynamics in ECM-based memristive structures	
11:20	11:20-11:35 OT-45 · ORAL · K. Lemr · Adaptive Negativity Estimation via Collective Measurements	11:20-11:35 OT-49 · ORAL · P. Wytrych · PDMS-based nano- and microstructures for strain-tunable photonics	
11:35	11:35-11:50 OT-46 · ORAL · J. Soubusta · Deep-learned classification of quantum correlations from collective measurements	11:35-11:50 OT-50 · ORAL · P. Ják · High-Fidelity 3D Microfabrication using Adaptive Wavefront Shaping	
11:50-12:05		Conclusion of the conference · Main Hall	
12:05-14:05		Lunch	

Tuesday, 15 September 2026

17:25-19:00 · 19 posters

NO.	PRESENTER	TITLE
P-01	O. Galkina	Stabilized Two-photon-level Interference: A Classical Mach–Zehnder Platform and Its Application in Quantum Communication
P-02	M. Krupová	Microwave Field Detection Using a Rydberg-Atom Quantum Receiver
P-03	M. Zeman	Experimental verification of complementary relations of tri- and bi-partite correlation measures in three-qubit states
P-04	S. Rudnicki	Evaluating the Impact of Optical Element Imperfections on Entanglement Quality and Brightness of a Sagnac-based type-II SPDC Entangled Photon Source Using Jones Formalism
P-05	F. Dłużewski	Motion-compensated 3D refractive index reconstruction in limited-angle tomography with sample rotation using holographic optical tweezers
P-06	K. Kalinowski	Hybrid Spectral-Spatial Domain Registration for Nanometric Tracking in Digital In-Line Holographic Microscopy
P-07	A. Güneş	Comparison of Non-Blind and Blind Deconvolution Methods Applied to Coded Aperture Imaging
P-08	W. Wróblewski	A Hybrid Digital Holography and Fourier Ptychographic Microscopy Approach for Quantitative Phase Imaging
P-09	M. Machalová	Design and fabrication of integral imaging security features for polymer banknotes
P-10	P. Kostka	Complete polarization characterization of anisotropic samples using Terahertz time-domain spectroscopic ellipsometry
P-11	S. Drobczyński	The Comparative Study of Quadrant Photodiodes and 2D Lateral Effect Detectors in Optical Tweezers Application
P-12	A. Güneş, Z. Iwaniuk	A Hierarchical Differentiable-Optics Model for Automated Calibration of an LC-SLM-Camera Diffraction System and Hologram Optimization
P-13	A. Popiołek-Masajada	One-way generation of vector beams using the spatial light modulator
P-14	I. Lettrichova	Optical characterization of chiral polymer plasmonic structures
P-15	M. Zdurienciák	Bioinspired 3D Nanoprinting of Photonic Structures Mimicking Peacock Spider Structural Color
P-16	R. Cichowski	Simulations of Polarized Supercontinuum Generation in an All-Normal-Dispersion Birefringent Honeycomb PCF
P-17	R. Švejkár	Numerical and Experimental Evaluation of Fe:ZnSe Lasers at 4.1 μm
P-18	B. Švejkarová	Structured-core thulium-doped fiber for high-power fiber lasers
P-39	Z. Gelnarova	Optical Mueller matrix ellipsometry of silicon carbide

Thursday, 17 September 2026

17:25-18:55 · 20 posters

NO.	PRESENTER	TITLE
P-19	A. Bohdan	Photoluminescence Imaging and Spectroscopy of 2D Perovskites
P-20	M. Šetina	Plasma-Deposited DLC and SiO _x Thin Films for Optical Fiber Sensing Structures
P-21	A. Stach	Implementation of Simplified Optoelectronic Architectures for Rapid Point-of-Care Hemoglobin Diagnostics in Small Ruminants
P-22	A. Borodkin	Resonant interaction of acoustic waves with light in optical fibers
P-23	D. Kacik	Low-Coherence Interferometric Monitoring of Interface Stability and Dynamic Surface Changes in PDMS-Coated Fiber Sensors
P-24	E. Wątfła	Dual-core side-hole polarization-maintaining fibers for distributed and point multiparameter sensing
P-25	P. Gaso	Polymer-Based 4-Channel AWG: Prototype Fabrication and Optimization
P-26	M. Goraus	Fabrication Technology of Broad-Spectrum Antibacterial Surfaces
P-27	H. Chmeličková	Substrate preheating and the powder composition influence on the clad bead properties
P-28	J. Hrabina	Visible Wavelengths Optical Fiber Infrastructure for Laser Interferometry and Spectroscopy Applications
P-29	I. Martinček	Long-term measurement of the sensing properties of the PDMS Fabry-Perot cavity
P-30	D. Jandura	Preparation of polymer Mach–Zehnder interferometer using 3D laser micro-printing
P-31	J. Zaporowska	Tunable Aluminum-Based Metal-Insulator-Metal Nanocavities for UV-Vis SERS Applications
P-32	K. Kliczewska	Peering into ECM-based memristive structures: uncovering factors governing their opto-electrical response
P-33	L. Šušlik	Grating waveguide on polymer base
P-34	U. Malecka	Wrinkled PDMS platforms for tunable photonics
P-35	S. Michal	Precise optics manufacturing and measurement in JLO
P-36	N. Tarjányi	Studying reflection of light at the interface of two dielectric media using Ansys Speos simulation – support for laboratory exercise
P-37	T. Stefaniuk	Multiphysical insights into strain-tunable photonics in PDMS-based micro- and nanostructures
P-38	M. Zdurienčík	Demonstration of β -Ga ₂ O ₃ optical strip waveguides for UV-NIR applications