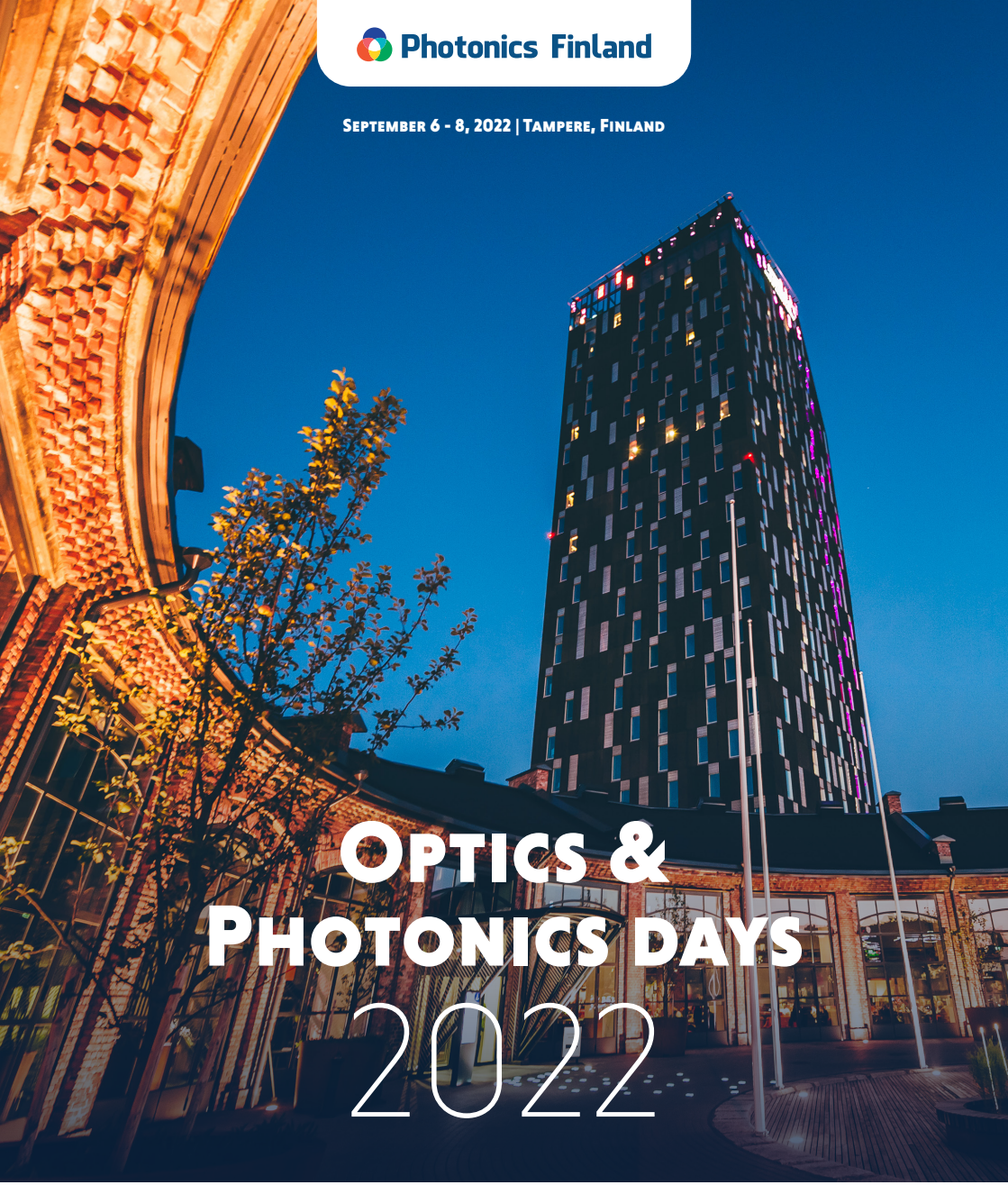
Photonics Finland

September 6 - 8, 2022 | Tampere, Finland



Optics & Photonics Days 2022

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Photonics Finland OPD2022

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OPD2022 Program

As a tradition, the OPD2022 program will include both the academy and industry sessions running in parallel.

Venue (6. - 8. September):

Sokos Hotel Torni/Paja kongressikeskus
Ratapihankatu 43, 33100, Tampere

Dinner Venue (7. September)

Sokos Hotel Ilves, Ballroom
Hatanpään Valtatie 1, 33100, Tampere

Academic Program Committee

Humeyra Caglayan (Chair), *Tampere University*

Konstantinos Daskalakis, *University of Turku*

Polina Kuzhir, *University of Eastern Finland (UEF)*

Sebastian van Dijken, *Aalto University*

Tapio Fabritius, *University of Oulu*

Industrial Program Committee

Jyrki Saarinen (Chair), *University of Eastern Finland (UEF)*

Jussi Hiltunen, *VTT*

Seppo Honkanen, *University of Eastern Finland (UEF)*

Oliver Hussey, *Business Tampere*

Juha Purmonen, *Photonics Finland*

Niklas Saxén, *Edmund Optics*

Organizing committee

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Tuukka Pakarinen

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TUESDAY 6.9.2022

12.00	Registration opens - Lobby	
13.00-14.00	Nordic Photonics Meeting – Raide 1	Bright Future ahead - Academy v/s Industry - Photonics Students Meet up - Pikku-Rusko & Heikki
14.00-15.00		
15.00-18.00	PREIN Flagship Networking Event - Raide 1, Pikku-Rusko & Heikki 15.15 - WP Research highlights poster session with coffee 16.45 - Panel discussion "How to attract (and keep) talented students to Finland"	
18.30 - 18.40	Welcome speech - Juha Purmonen - Raide 1	
18.40 - 21.00	Get together, Co-sponsored by Dispelix - Lobby	

WEDNESDAY 7.9.2022

08.00-8.45	Registration - Lobby
08.45-09.00	Welcome speech, Juha Toivonen, Photonics Finland - Raide 1&2
09.00-09.45	**Plenary talk (Chairperson: Juha Toivonen):** Optics and Photonics as Key enabling technologies for Metaverse gateways **Bernard Kress**, *President-Elect 2022, the International Society for Optics and Photonics (SPIE.org), Director, Optical engineering, Google AR.* - Raide 1&2
09.45-10.10	Exhibitors pitch session 1. Chairperson: Juha Purmonen - Raide 1&2
10.10-10.40	Coffee break, Co-sponsored by Dispelix, and Exhibition - Lobby and Exhibition area

PARALLEL SESSIONS: ACADEMIC / INDUSTRIAL TALKS

	Academic session – Metamaterial, Plasmonics, Optical nano-antennas - Risto & Ukko-Pekka ***Chairperson: Polina Kuzhir***	Industrial session – Imaging - Raide 1&2 ***Chairperson: Oliver Hussey***
10.40-12.00	Graphene-based terahertz range plasmonic interferometers, by **Georgy Fedorov**, *University of Eastern Finland* Linear all-optical switching via plasmonic analogue of Enhancement of Index of Refraction by **Rakesh Dhama**, *Tampere University* Spatial and Temporal Coherence in Strongly Coupled Plasmonic Bose-Einstein Condensates by **Jani Taskinen**, *Aalto University* Characterization of Topological Photonic Crystals with sSNOM, by **Charles Rambo**, *University of Jyväskylä*	The development of the Tampere Imaging Ecosystem, **Oliver Hussey**, *Business Tampere* Front-facing camera history and future directions, **Jarkko Viinikanoja**, *Microsoft* Liquid Lenses in Machine Vision, **Boris Lange**, *Edmund Optics* Machine learning to tune up the computer vision at paper web monitoring, **Marja Mettänen**, *Procemex*
12.00-14.00	Lunch and Poster session 1. - Lobby *(Posters in page 8)*	
14.00-14.45	**Plenary talk (Chairman: Humeyra Caglayan):** Nanoplasmonic and nanophotonics active devices, **Prof. Uriel Levy**, *Director of the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem* - Raide 1&2	
14.45-15.15	Exhibitors pitch session 2. Chairperson: Juha Purmonen - Raide 1&2	
15.15-15.45	Coffee break, Co-sponsored by Summa Semiconductor, and Exhibition - Lobby and Exhibition area	

PARALLEL SESSIONS: ACADEMIC / INDUSTRIAL TALKS

	Academic session – Imaging and Sensing - Risto & Ukko-Pekka ***Chairperson: Humeyra Caglayan***	Industrial session – Glass Photonics - Raide 1&2 ***Chairperson: Niklas Saxén***
15.45-17.05	Locating radioactive materials with rapid radioluminescence imaging in nitrogen-flushed gloveboxes, by **Martti Leino**, *Tampere University* Optoretinography – Functional imaging of the photoreceptors in vivo, by **Kari Veinola**, *University of Turku, Finland and University of California Davis, United States* On design of Hybrid Diffractive Optics via Hardware-in-the-Loop Methodology for Achro-matic Extended-Depth-of-Field Imaging, by **Seyyed Reza Miri Rostami**, *Tampere University* Utilizing variational autoencoders in the Bayesian inverse problem of photoacoustic tomography, by **Teemu Sahlström**, *University of Eastern Finland*	Hybrid Polymers: UV-curable organic-inorganic polymers for permanent micro-optical and photonics components using diverse manufacturing technologies, **Dr. Maria Russew**, *Micro Resist Technology* Development of communications optical fibers 1978 – 2022, **Tarja Volotinen**, *University of Eastern Finland* Active fiber fabrication by DND process, **Heikki Ihalainen,** *nLight* Wafer level glass packaging for smart implants, **Ville Hevonkorpi**, *SCHOTT Primoceler*
17.15-18.40	Women in Photonics (event is open for everyone) - Raide 1&2	
18.40-19.30	Photonics Finland Surveys & Projects - Raide 1&2	
20.00-23.00	Conference dinner Photonics Finland Awards for The Photonics Company of the Year and Best PhD Thesis Award. - Sokos Hotel Ilves, Ballroom	

THURSDAY 8.9.2022

09.15	OPD doors open
09.15-09.45	Coffee break and Exhibition - Lobby and Exhibition area
09.45-10.30	**Plenary talk (Chairman: Humeyra Caglayan):** Metaverse and XR **Evgeny Shirko**, *Senior optical designer and leading optical RnD engineer at Varjo Technologies, The Photonics Company of the Year 2021* - Raide 1&2

PARALLEL SESSIONS: ACADEMIC / INDUSTRIAL TALKS

	Academic session – Emission Control, Lasing - Risto & Ukko-Pekka ***Chairperson: Konstantinos Daskalakis***	**Industrial session – Panel discussion - Metaverse** - Raide 1&2 ***Moderator: Seppo Honkanen***
10.40-12.00	Emitter engineering on 2D materials by plasmonic Nanoantenna and Meta-Antennas, by **Carlos Rodríguez Fernández**, *Tampere University* Distributed Brag Reflectors for White Organic Light-Emitting Diodes, by **Manish Kumar**, *University of Turku* Highly uniform epitaxial quantum dots emitting at telecom wavelengths, by **Abhiroop Chellu**, *Tampere University* Quasi-BIC mode lasing in a quadrumer plasmonic lattice, **Rebecca Heilmann**, *Aalto University*	**Thomas Kerst**, *Optofidelity* **Antti Sunnari**, *Dispelix* **Bernard Kress**, *Google* **Evgeny Shirko**, *Varjo Technologies* **Juha Rantala**, *Pibond*
12.00-14.00	Lunch and Poster session 2. - Lobby *(Posters in page 10)*	
12.00-15.00	Job Fair and Exhibition - Lobby & Exhibition area	

PARALLEL SESSIONS: ACADEMIC / INDUSTRIAL TALKS

	Academic session – Non-classical applications - Risto & Ukko-Pekka ***Chairperson: Rebecca Heilmann***	**Industrial session – Laser & Medical technologies** - Raide 1&2 ***Chairperson: Jussi Hiltunen***
14.00-15.20	Non-Markovian Quantum Dynamics in Strongly Coupled Multimode Cavities Conditioned on Continuous Measurement, by **Kimmo Luoma**, *University of Turku, Finland* Observation of the quantum Gouy phase, by **Rafael Barros**, *Tampere University, Finland* Quantum complementarities in vector-light interference, by **Andreas Norrman**, *University of Eastern Finland, Finland* Strain effects in 31P bound exciton transitions in silicon, by **Antti Kanniainen**, *University of Jyväskylä, Finland*	Photoimmunotheraphy and other novel treatment modalities in personalized medicine, **Seppo Orsila**, *Modulight* New R2B laser technology eco-system from Tampere University: Picophotonics & Vexlum, **Mircea Guina**, *Picophotonics & Vexlum* Timegate Raman spectroscopy - Brining eyes to biologics manufacturing **Mari Tenhunen**, *Timegate Instruments* Upconverting nanoparticles: new method for diagnostic testing, **Ida Erling**, *Uniogen*
15.20-15.25	Best Poster Awards and Conference Farewell	

PI.01	*Broadband Frequency Conversion of Ultrashort Laser Pulses using high-Q Plasmonic Metasurfaces*	**Timo Stolt** Photonics Laboratory, Physics Unit, Tampere University
PI.02	*Nonlinear projection estimation in background-oriented schlieren imaging*	**Eero Koponen** | University of Eastern Finland, Joensuu
PI.03	*Composition-structure-properties interdependence study by the Eu3+ optical probe in phosphate, fluorophosphate, borosilicate, tellurite and germanate glasses*	**Bartosz Bondzior** Tampere University; Institute of Low Temperature and Structure Research PAS, Wrocław, Poland
PI.04	*Towards ultra-bright source of non-classical light based on single InAs/GaAs quantum dot in a hybrid metal-semiconductor nanopillar cavity*	**Abhiroop Chellu** Optoelectronics Research Centre, Physics Unit, Tampere University
PI.05	*Digital holographic microscopy for photolithographic surface patterning*	**Alex Berdin** Photonics Laboratory, Physics Unit, Tampere University
PI.06	*Short-wavelength-band tunable high-power Tm-doped fiber laser*	**Xinyang Liu** Photonics Laboratory, Physics Unit, Tampere University
PI.07	*Bloch surface pulses and their spatiotemporal properties*	**Lewis Asilevi** | University of Eastern Finland, Joensuu
PI.08	*Nonlinear optical response of Type-II Weyl fermions in two dimensions*	**Yaraslau Tamashevich** Photonics Laboratory, Physics Unit, Tampere University
PI.09	*Fourier transform provides computational advantages for time-domain diffuse optical tomography*	**Meghdoot Mozumder** University of Eastern Finland, Joensuu
PI.10	*Kings of Quantumness for quantum-enhanced multi-parameter estimation of rotations*	**Matias Eriksson** Photonics Laboratory, Physics Unit, Tampere University
PI.11	*Discretization of fluence in diffuse optic Monte Carlo simulations*	**Aki Pulkkinen** | University of Eastern Finland, Joensuu
PI.12	*Gravitational deflection of star light bypassing the Sun*	**Tomi Parviainen** Defence Forces Research Agency
PI.13	*Time-varying photonics*	**Matias Koivurova** Photonics Laboratory, Physics Unit, Tampere University
PI.14	*Bioimaging and temperature sensing with single crystal diamond needles enriched with SiV/NV color centers*	**Lena Golubewa** State research institute Center for Physical Sciences and Technology, Lithuania
PI.15	*Dispersion engineering of guided-modes in a square-lattice resonant grating*	**Reuben Amedalor** | University of Eastern Finland, Joensuu
PI.16	*Extreme nonlinear optics of twisted bilayer graphene*	**Leone Di Mauro Villari** Universty of Manchester, United Kingdom
PI.17	*Red-emitting AlGaInP-based membrane external-cavity surface-emitting lasers (MECSELs) for optical coherence tomography (OCT)*	**Jesse Koskinen** Photonics Laboratory, Physics Unit, Tampere University
PI.18	*Towards three-photon spatial-mode entanglement by cascaded spontaneous parametric down-conversion*	**Lea Kopf** Photonics Laboratory, Physics Unit, Tampere University

PI.19	*Stokes vector Monte Carlo modeling of circularly polarized light propagation in turbid tissue-like scattering medium*	**Ivan Lopushenko** University of Oulu
PI.20	*Optoelectronics properties of high repetition rate femtosecond-laser processed black silicon*	**Behrad Radfar** Aalto University, Espoo
PI.21	*Nonequilibrium Green's Function model of semiconductor electrodes in photoelectrochemical cells*	**Lassi Hällström** Aalto University, Espoo
PI.22	*Fabrication of solution-based distributed Bragg reflectors (DBR).*	**Michael Papachatzakis** Turku University
PI.23	*Strip-loaded slot waveguide for outcoupling from a microdisk laser*	**Igor Reduto** | University of Eastern Finland, Joensuu
PI.24	*Numerical Simulation of Selective Laser-Assisted Bonding (LAB) Process for Photonic Integration*	**Alp Eren Aydin** Photonics Laboratory, Physics Unit, Tampere University
PI.25	*Hybrid GaSb/Si3N4 Widely Tunable Vernier Laser Emitting Around 2.55 μm*	**Samu-Pekka Ojanen** Optoelectronics Research Centre, Physics Unit, Tampere University
PI.26	*Cantilever-enhanced photoacoustic spectroscopy for measuring aerosol light absorption*	**Juho Karhu** Metrology Research Institute, Aalto University, Espoo; Department of Chemistry, University of Helsinki
PI.27	*Endoscopic image denoising via super resolution*	**Vili Kellokumpu** VTT Technical Research Center of Finland
PI.28	*Single-laser feedback cooling of optomechanical resonators*	**Arvind Shankar Kumar** University of Jyväskylä
PI.29	*Low loss InP U-bend semiconductor optical amplifiers for hybrid integration on silicon on insulator platform*	**Heidi Tuorila** Optoelectronics Research Centre, Physics Unit, Tampere University
PI.30	*Bessel-correlated specular and antispecular beams*	**Atri Halder** | University of Eastern Finland, Joensuu
PI.31	*Interferometric approach to open quantum systems and non-Markovian dynamics*	**Olli Siltanen** University of Turku
PI.32	*Efficient light-emitting hydrogels via guest–host complexation: towards supramolecular hydrogel lasers*	**Matias Paatelainen** Photonics Laboratory, Physics Unit, Tampere University
PI.33	*Immersion through-focus microscopy for the analysis of biological structures*	**Aki Mäyrä** VTT Technical Research Centre of Finland
PI.34	*Extended Depth of Field and High-Resolution Microscopic Imaging with Metasurfaces and Deep Learning*	**Ipek Anil Atalay Appak** Photonics Laboratory, Physics Unit, Tampere University
PI.35	*Lasers for Quantum Computing with Ions and Atoms*	**Jussi-Pekka Penttinen** Vexlum Oy
PI.36	*Tunable laser absorption spectroscopy using a photoacoustic power detector*	**Jussi Rossi** Photonics Laboratory, Physics Unit, Tampere University
PI.37	*Fine-tuning of convolutional neural networks for improved retrieval of Raman signals from CARS spectra*	**Ali Saghi** LUT University, Lappeenranta
PI.38	*Local electron beam activation of color centers in diamond needles*	**Sergei Malykhin** | University of Eastern Finland, Joensuu

P2.01	*Detection of gaseous nerve agent simulants with broadband photoacoustic spectroscopy*	**Tommi Mikkonen** Photonics Laboratory, Physics Unit, Tampere University
P2.02	*Er3+ doped Ag2O containing glasses*	**Iuliia Shestopalova** Photonics Laboratory, Physics Unit, Tampere University
P2.03	*Gate Tunable Coupling of Epsilon-Near-Zero and Plasmonic Modes*	**Dipa Ghindani** Photonics Laboratory, Physics Unit, Tampere University
P2.04	*Influence of the surface roughness of graphene-based biosensing platforms for the living cells functional state monitoring*	**Hamza Rehman** Univerisity of Eastern Finland, Joensuu
P2.05	*Fast Method to Calculate the Spatial Dispersion of High-Q Surface Lattice Resonances*	**Anna Vesala** Photonics Laboratory, Physics Unit, Tampere University
P2.06	*3D-printed multimaterial components*	**Markku Pekkarinen** | University of Eastern Finland, Joensuu
P2.07	*Development of super-sensor read-out unit for proteomics analyses*	**Sanna Uusitalo** Sensing solutions, VTT Technical Research Centre of Finland
P2.08	*Optical characterization of DNA origami-shaped silver nanoparticles created through biotemplated lithography*	**Kabusure Kabusure** | University of Eastern Finland, Joensuu
P2.09	*Inter-modal phasematching of silicon waveguides for second-harmonic generation*	**Madona Mekhael** Photonics Laboratory, Physics Unit, Tampere University
P2.10	*Subpixel lensless quantitative phase imaging*	**Igor Shevkunov** Photonics Laboratory, Physics Unit, Tampere University
P2.11	*Revealing hierarchically structured domains of persistent luminescent microparticles using second-harmonic generation microscopy*	**Shambhavee Annurakshita** Photonics Laboratory, Physics Unit, Tampere University
P2.12	*Transmission properties of self-complementary metamaterials via Babinet principle*	**Anar Ospanova** | University of Eastern Finland, Joensuu
P2.13	*Graphene enhanced free-standing silicon anapole-type metasurface*	**Anar Ospanova** | University of Eastern Finland, Joensuu
P2.14	*Polymer-titanium dioxide hybrid nano-waveguides*	**Isaac Doughan** | University of Eastern Finland, Joensuu
P2.15	*Insights into Tailoring of Atomic Layer Deposition Grown TiO2 as Photoelectrode Coating*	**Jesse Saari** | Surface Science Group, Tampere University
P2.16	*Modified multipoles in nanophotonics*	**Alexey Basharin** | Univerisity of Eastern Finland, Joensuu
P2.17	*Testing Challenges with Augmented Reality Smart Glasses*	**Murat Deveci** | OptoFidelity
P2.18	*High efficiency interface between multi-mode and single-mode fibers*	**Oussama Korichi** Photonics Laboratory, Physics Unit, Tampere University
P2.19	*Optical Studies of High Performance Predictable Quantum Efficient Detector Based on Induced-Junction Photodiodes Passivated with SiO2/SiNx*	**Mikhail Korpusenko** Metrology Research Institute, Aalto University, Espoo
P2.20	*Single particle tracking for understanding intracelularcellular fate of nanomaterials*	**Feby Wijaya Pratiwi** University of Oulu

P2.21	*Tracking Polaritons in Organic Light-emitting Diodes*	**Hassan Ali Qureshi** University of Turku
P2.22	*Engineering radiation loss of collective resonances in arrays of nanoscatterers*	**Radoslaw Kolkowski** Department of Applied Physics, Aalto University, Espoo
P2.23	*Practical optics designer example study cases*	**Kai Ojala** VTT Technical Research Centre of Finland
P2.24	*Organic Light-Emitting Materials Strongly Coupled to the Vacuum Electro-Magnetic Field*	**Ahmed Gaber Abdelmagid** Department of Mechanical and Materials Engineering, University of Turku
P2.25	*Protonation of oxygen doped single walled carbon nanotubes*	**Timofei Eremin** | University of Eastern Finland, Joensuu
P2.26	*A double-clad ytterbium-doped tapered fiber with circular birefringence as a gain medium for structured light*	**Iuliia Zalesskaia** Photonics Laboratory, Physics Unit, Tampere University
P2.27	*Doping of single-walled carbon nanotubes defected by ion beams*	**Valentina Eremina** | University of Eastern Finland, Joensuu
P2.28	*Correlation-enhanced target detection in the optical range*	**Vladimir Kornienko** Department of Electronics and Nanoengineering, Aalto University, Espoo
P2.29	*Simulation tool for refractive index variation on molded aspheric glass lenses*	**Aki Mäyrä** | VTT Technical Research Centre of Finland
P2.30	*Spectroscopic measurement with cellulose optical fiber*	**Markku Kapulainen** VTT Technical Research Centre of Finland
P2.31	*Noise characterization of supercontinuum generation in multimode fibers*	**Arun Surendran** Photonics Laboratory, Physics Unit, Tampere University
P2.32	*Structure induced luminescence in all-inorganic manganese halide perovskite nanocrystals*	**Anastasia Matiuhina** Hybrid Solar Cells, Photonics Laboratory, Physics Unit, Tampere University
P2.33	*Coherent Differential Absorption Lidar for Carbon Dioxide detection at 1.57 μm*	**Kim Kalmankoski** Photonics Laboratory, Physics Unit, Tampere University
P2.34	*Spatial coherence measurement of multimode fiber-coupled supercontinuum light source*	**Jiaqi Li** Photonics Laboratory, Physics Unit, Tampere University
P2.35	*Observation of higher-order Kerr effect in epsilon-near-zero thin films*	**Subhajit Bej** | Institute for Quantum Science and Engineering, Texas A&M University, USA; Baylor University, Waco, TX, USA; Tampere University
P2.36	*All-fiber Mamyshev Oscillator for Dual Frequency Comb generation*	**Mikko Närhi** Photonics Laboratory, Physics Unit, Tampere University
P2.37	*Near-infrared rechargeable glassbased composites for green persistent luminescence*	**Evellyn Magalhães** Photonics Laboratory, Physics Unit, Tampere University

Exhibitors at Optics and Photonics Days 2022































































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