

MONDAY SEPTEMBER 4 – Morning/1

SESSION 1: Integrated Photonics

Session Chair: MARCO GRANDE

Time	Speaker	Presentation Title
09:00 - 09:15	Vincenzo Spagnolo, Marco Grande and William Whelan Curtin	Opening
09:15 - 09:45	Mikhail Belkin (KEYNOTE) <i>Technical University of Munich, Germany</i>	Mid-infrared photonics integration on InP
09:45 - 10:05	Ilaria Cristiani (INVITED) <i>Università di Pavia, Italy</i>	Photonic integrated circuits for laser frequency stabilization
10:05 - 10:25	Remy Francis (INVITED) <i>University of St Andrews, Scotland</i>	Fiber-coupled CO2 sensor using photonic crystal waveguides
10:25 - 10:40	Jesus Hernan Mendoza Castro <i>Politecnico of Bari, Italy</i>	Control of Fano Spectral Profile based on a Silicon Nitride Photonic Crystal-Micro Ring Resonator structure



MONDAY SEPTEMBER 4 – Morning/2

SESSION 2: Infrared Sources and Detectors

Session Chair: ALEXEI BARANOV

Time	Speaker	Presentation Title
11:00 - 11:20	Paul Chevalier (INVITED) <i>Harvard University, United States</i>	The quantum cascade laser pumped molecular laser: a widely tunable source from 100 GHz up to more than 3 THz
11:20 - 11:40	Qijie Wang (INVITED) <i>Nanyang Technological University, Singapore</i>	Broadband Room-Temperature Mid-infrared Detection with Nanoparticles
11:40 - 11:55	Davide Pinto <i>Technische Universität Wien, Austria</i>	Long wavelength distributed feedback tapered quantum cascade lasers
11:55 - 12:10	Michele Paparella <i>University of Montpellier, France</i>	Numerical and experimental analyses of optical coupling for GaSb diode lasers grown on Silicon substrate
12:10 - 12:25	Jordan Fordyce <i>University of Montpellier, France</i>	Extended wavelength tuning of multi-section interband cascade lasers with slotted waveguides above 3 μm
12:25 - 12:40	Raffaele De Palo <i>University of Bari, Italy</i>	Surface Modification of Quartz-Tuning Forks for Light-Induced-Thermoelastic Spectroscopy



MONDAY SEPTEMBER 4 – Afternoon

SESSION 3: Hybrid Sources and Fibers

Session Chair: WILLIAM WHELAN CURTIN

Time	Speaker	Presentation Title
14:30 - 14:50	Ulrike Willer (INVITED) <i>Clausthal University of Technology, Germany</i>	Evanescence-field fiber sensors
14:50 - 15:05	Piotr Jaworski <i>Wroclaw University of Science and Technology, Poland</i>	Antiresonant Hollow-Core Fiber and Kagome Hollow-Core Fiber assisted Wavelength Modulation Spectroscopy of ethane in the mid-IR
15:05 - 15:20	Giovanna Ricchiuti <i>Technische Universität Wien, Austria</i>	Photothermal Spectroscopy (PTS) of PMMA thin layer using micro-ring resonators (MRRs)
15:20 - 15:35	Gautham Paikkath <i>Politecnico di Bari, Italy</i>	Photonic crystal hybrid lasers for intracavity Quartz Enhanced Photo-Acoustic Spectroscopy (QEPAS) and Photo-Thermal Spectroscopy (PTS)
15:35 - 15:50	Andrea Annunziato <i>Politecnico di Bari, Italy</i>	Optical Fiber Couplers Based on Indium Fluoride Optical Fibers



TUESDAY SEPTEMBER 5 – Morning/1

SESSION 4: Frequency Comb and Optical Power Build-up Approaches

Session Chair: PAOLO DE NATALE

Time	Speaker	Presentation Title
09:00 - 09:30	Jerome Faist (KEYNOTE) <i>ETH Zurich, Switzerland</i>	Integrated optical frequency combs for mid-infrared spectroscopy
09:30 - 09:50	Marco Marangoni (INVITED) <i>Politecnico of Milano, Italy</i>	High-speed dual-comb spectroscopy in the 8-12 um region
09:50 - 10:10	Kevin Cossel (INVITED) <i>NIST, United States</i>	Atmospheric measurements using open-path mid-infrared dual-comb spectroscopy
10:10 - 10:25	Maria Kotlyar <i>Munster Technological University, Ireland</i>	Photothermal spectroscopy of water vapour using a silicon nitride ring resonator transducer
10:25 - 10:40	Savda Sam <i>Munster Technological University, Ireland</i>	Bow-Tie Cavity for I-QEPAS for Isotope Analysis: Design and Optimization



TUESDAY SEPTEMBER 5 – Morning/2		
SESSION 5: Industrial Session		
Session Chair: ANGELO SAMPAOLO		
Time	Speaker	Presentation Title
11:00 - 11:20	Georg Ramer (INVITED) <i>Technische Universität Wien, Austria</i>	Mid-IR nanoscale imaging for next generation polymer recycling
11:20 - 11:35	Rolf Aidam <i>Eclypia, Germany</i>	Neogly, QCL-based continuous glucose monitoring device
11:35 - 11:50	Nicola Reusch <i>Thorlabs GmbH, Germany</i>	Gas Spectroscopy at Thorlabs – From Prisms to QEPAS
11:50 - 12:05	Giuseppe Canuti <i>MCQ Instruments, Italy</i>	All-in-one Gas mixer and pressure controlling system for spectroscopy
12:05 - 12:20	Robert Weih <i>Nanoplus Advanced Photonics GmbH, Germany</i>	Long Wavelength Cascade Laser Technology for Sensing Applications
12:20 - 12:35	Fabrizio Manassero <i>ETG Risorse e Tecnologia Srl, Italy</i>	TDL, ICL, QCL QEPAS gas analyzer



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WEDNESDAY SEPTEMBER 6 – Morning/1

SESSION 6: Direct Absorption Spectroscopy

Session Chair: ERIC TOURNIE'

Time	Speaker	Presentation Title
09:00 - 09:30	Simona Cristescu (KEYNOTE) <i>Radboud University, The Netherlands</i>	Optical absorption spectroscopy applied for trace gas sensing
09:30 - 09:50	Paolo De Natale (INVITED) <i>CNR-INO, Italy</i>	Molecular detection with a sensitivity of parts per quadrillion
09:50 - 10:10	Juha Toivonen (INVITED) <i>Tampere University, Finland</i>	Fourier transform photoacoustic spectroscopy with broadband supercontinuum lasers
10:10 - 10:25	Roderik Krebbers <i>Radboud University, The Netherlands</i>	Mid-infrared supercontinuum-based Fourier transform spectroscopy for multispecies open-path measurements
10:25 - 10:40	Mariagrazia Olivieri <i>University of Bari, Italy</i>	H2 detection based on wavelength modulation and multipass absorption spectroscopy



WEDNESDAY SEPTEMBER 6 – Morning/2		
SESSION 7: Photothermal Spectroscopy		
Session Chair: BERNHARD LENDL		
Time	Speaker	Presentation Title
11:00 - 11:30	Peter Burgholzer (KEYNOTE) <i>Recendt, Austria</i>	Fundamental limits to spatial resolution in photothermal imaging
11:30 - 11:50	Mladen Franko (INVITED) <i>University of Nova Gorica, Slovenia</i>	Recent Progress and Applications of Thermal Lens Spectrometry in Environmental and Bio-medical Sensing
11:50 - 12:05	Karol Krzempek <i>Wroclaw University of Science and Technology, Poland</i>	Photothermal gas detection using a miniaturized fiber Fabry-Perot cavity
12:05 - 12:20	Johannes Waclawek <i>Technische Universität Wien, Austria</i>	Compact Trace Gas Detection by Balanced-Detection ICAPS
12:20 - 12:35	Artem Vorobev <i>Politecnico of Bari, Italy</i>	Graphene Electrodes on Silicon Nitride Devices for Near-Infrared Wavelength Tuning
12:35 - 12:50	Yide Zhang <i>Technische Universität Wien, Austria</i>	Controlling Spatial Resolution and Sensitivity in Nanoscale Chemical Imaging by Photothermal-Induced Resonance Spectroscopy



WEDNESDAY SEPTEMBER 6 – Afternoon

SESSION 8: Photoacoustic Spectroscopy

Session Chair: PIETRO PATIMISCO

Time	Speaker	Presentation Title
14:30 - 14:50	Markus Sigrist (INVITED) <i>ETH Zurich, Switzerland</i>	Photoacoustic detection overview, from past to present
14:50 - 15:10	Thomas Ruck (INVITED) <i>Regensburg University of Applied Sciences, Germany</i>	From Lab to Application – Digital Twins of Photoacoustic Gas Sensors
15:10 - 15:30	Roberto Li Voti (INVITED) <i>Sapienza University of Roma, Italy</i>	Photoacoustic Characterization of Metal Nanoparticles Super-Aggregates
15:30 - 15:45	Simone Borri <i>CNR-INO, Italy</i>	A doubly-resonant cantilever-enhanced photoacoustic sensor for trace-gas detection
15:45 - 16:00	Janos Fekete <i>University of Szeged, Hungary</i>	Open photoacoustic cell for measurement of water vapor flux
16:00 - 16:15	Lei S. Li <i>Rice University, United States</i>	Multiscale photoacoustic tomography of genetically encoded photoswitchable proteins



THURSDAY SEPTEMBER 7 – Morning/1

SESSION 9: Spectroscopy for Atmospheric Applications

Session Chair: VINCENZO SPAGNOLO

Time	Speaker	Presentation Title
09:00 - 09:30	Gerard Wysocki (KEYNOTE) <i>Princeton University, United States</i>	Drone-assisted spectroscopic detection of trace-gas plumes – new technologies and emerging applications
09:30 - 09:50	Melanie Ghysels-Dubois (INVITED) <i>GSMA/CNRS, France</i>	Around the "atmospheric world" under a balloon: a long-duration observation of the equatorial tropopause with the Pico-SDLA tunable diode laser spectrometers
09:50 - 10:10	Weidong Chen (INVITED) <i>Université du Littoral Côte d'Opale, France</i>	Cavity enhanced optical sensing of the atmosphere
10:10 - 10:25	Bela Tuzson <i>Empa, Switzerland</i>	Recent advances in VOC analysis by mid-IR laser spectroscopy
10:25 - 10:40	Dominik Theiner <i>Technische Universität Wien, Austria</i>	Flexible molecular gas sensing platform in the terahertz domain



THURSDAY SEPTEMBER 7 – Morning/2		
SESSION 10: Quartz-Enhanced Photoacoustic Spectroscopy		
Session Chair: LEI DONG		
Time	Speaker	Presentation Title
11:00 - 11:20	Marcus Wolff (INVITED) <i>Hamburg University of Applied Sciences, Germany</i>	Photoacoustics analysis of methane isotopologues
11:20 - 11:35	Pietro Patimisco <i>University of Bari, Italy</i>	Multi-QCL Quartz-Enhanced Photoacoustic Sensor for Environmental Monitoring
11:35 - 11:50	Kumar Kinjalk <i>University of Montpellier, France</i>	Highly Selective Toluene Detection using Quartz Enhanced Photoacoustic Spectroscopy at $\lambda = 13.71 \mu\text{m}$
11:50 - 12:05	Marta Ruiz-Llata <i>University Carlos III of Madrid, Spain</i>	QEPAS sensor for Surveying the Atmospheric Carbon Cycle
12:05 - 12:20	Elena Kniazeva <i>University of Bari, Italy</i>	Ultra-compact QEPAS sensors for environmental detection of toxic gases and development of novel near-IR DFB laser diodes for photoacoustic spectroscopy
12:20 - 12:35	Gabriele Biagi <i>Munster Technological University, Ireland</i>	Study of ammonia adsorption and desorption phenomena in a QEPAS sensor

FRIDAY SEPTEMBER 8 – Morning/1

SESSION 11: Sensing for Bio, Food, and Petrochemical Applications

Session Chair: MARILENA GIGLIO

Time	Speaker	Presentation Title
09:00 – 9:20	Lei Dong (INVITED) <i>Shanxi University, China</i>	Calibration-free Mid-infrared Exhaled Breath Sensor based on BF-QEPAS for Non-invasive Diagnosis
09:20 - 09:40	Chiara Cordero (INVITED) <i>Università degli Studi di Torino, Italy</i>	Challenges and Opportunities from Food Volatilomics: Sensing the Quality
9:40- 9:55	Guillaume Aoust <i>Mirsense, France</i>	Innovative QCL building blocks for spectroscopy applications
9:55 - 10:10	Giansergio Menduni <i>Politecnico of Bari, Italy</i>	Quartz Enhanced Photoacoustic Spectroscopy and Light Induced Thermoelastic Spectroscopy for natural gas composition analysis
10:10 - 10:25	Harald Moser <i>Technische Universität Wien, Austria</i>	ATEX compliant, FPGA based three-channel quantum cascade laser sensor for sulfur species detection in petrochemical process streams



FRIDAY SEPTEMBER 8 – Morning/2

SESSION 12: Spectroscopic Applications

Session Chair: ULRIKE WILLER

Time	Speaker	Presentation Title
11:00 - 11:20	Antonio Castrillo (INVITED) <i>Università degli Studi della Campania, Italy</i>	Comb-assisted frequency-stabilized cavity ring-down spectroscopy: application to ultra-sensitive detection of water vapour and beyond
11:20 - 11:35	Iskander Gazivov <i>Technische Universität Wien, Austria</i>	Improved Heterodyne Spectroradiometer: A Leap Towards Precise XCO ₂ Measurements
11:35 - 11:50	Anton Walsh <i>Munster Technological University, Ireland</i>	Evanescent wave quartz enhanced photoacoustic spectroscopy employing a side-polished fibre for methane sensing
11:50 - 12:05	Gustavo Lukasiewicz <i>Technische Universität Wien, Austria</i>	Photothermal Lens and Photothermal Mirror Techniques: Effects and Applications for Material Characterization
12:05 - 12:20	Giulia Malvicini <i>Munster Technological University, Ireland</i>	Balanced – Interferometric Cavity Assisted Photothermal Spectroscopy for environmental and food analysis

