2026 Photonics North (PN 2026)

Quebec City, QC, Canada
2-5 June 2026

IEEE Catalog Number: CFP2609V-POD
ISBN: 979-8-3195-0833-1

IEEE Advancing Technology for Humanity

Copyright © 2026, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP2609V-POD
ISBN (Print-On-Demand):	979-8-3195-0833-1
ISBN (Online):	979-8-3195-0832-4
ISSN:	2693-8324

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com



TABLE OF CONTENTS

Where to Place a Photodetector to Make a Robust Atomic Receiver 1
Javane Rostampoor, Raviraj Adve

Deterministic Generation of a Three-Qutrit GHZ State 3
Jinwon Yoo, Stefania Sciara, Nicola Montaut, Agnes George, Roberto Morandotti

Plasmonic Hot Carriers and Their Applications 5
Pierre Berini

All-Dielectric Terahertz Phased Array Antennas Based on Substrateless Waveguide Platforms 7
Weijie Gao, Masayuki Fujita

Discrete Longitudinal-Mode Parallel Amplification of High-Repetition-Rate Pulsed Fiber Lasers 9
L. Desbiens

All-Optical Convolution Using Four-Wave Mixing 11
Md Mahadi Masnad, Imtiaz Alamgir, Luigi Di Lauro, Nicolas Perron, Benjamin Wetzel, Brent E. Little Sai T. Chu, David J. Moss, Roberto Morandotti

112 Gb/s Low Power Hybrid PDM-DWDM FSO Link for Terrestrial Optical Wireless Communication 13
Shivam Bhutiani, Winnie N. Ye

Impact of MZM Extinction Ratio and Atmospheric Attenuation on a 112 Gb/s Hybrid PDM-DWDM Direct Detection FSO Communication Link 15
Shivam Bhutiani, Winnie N. Ye

Optical Design of an Unobscured 101.6 mm Off-Axis Newtonian Telescope for FSO Communication 17
Shivam Bhutiani, Winnie N. Ye

Physical Origin of Spatiotemporal Instabilities in Multidimensional Solitary States 19
M. Arshadipirlar, B. Azizi, F. Légaré, R. Safaei

Optical Reservoir Computing for Ultrafast Signal Processing 21
Imtiaz Alamgir, Md Mahadi Masnad, Luigi Di Lauro, Nicolas Perron, Zhuohong Li, Benjamin Wetzel Brent E. Little, Sai T. Chu, David J. Moss, Roberto Morandotti

Transmission THz Spectroscopy of Different Eggshells 23
S. Iqbal, M. Nadimi, A. Major

Terahertz Spectroscopy of Natural Minerals 25
A. Major, A.R. Chakhmouradian

Physics-Informed Graph Neural Network for Inverse Design of Integrated Photonic Biosensors 26
Yasaman Torabi, Amirali Ekhteraei, Mohammad Khajezadeh

Unidirectional Mid-Infrared Laser Demonstration Using Single-Mode 3 × 3 ZBLAN Optical Fiber Coupler 28
Gebrehiwot Tesfay Zeweldi, Nasrollah Karampour, Jean-Christophe Lamanque, Martin Rochette

Enhancing the Coupling Ratio and Reducing the Excess Loss of Single-Mode ZBLAN Optical Fiber Couplers 30
Gebrehiwot Tesfay Zeweldi, Nasrollah Karampour, Martin Rochette

High-Speed Terahertz Time-of-Flight and Hyperspectral Imaging 32
Andreea Aura Paraipan, Giacomo Balistreri, Robin Helstein, Luca Zanotto, Mostafa Shalaby Roberto Morandotti, Luca Razzari

Open-System Quantum Noise Analysis in the Vicinity of a Quadrature-Squeezing Exceptional Point 34
Polina Blinova, Kai Wang

Towards a Multifunctional Biocompatible Needle-Based Surface-Enhanced Raman Scattering Probe 36
Clement Yuen, Quan Liu, Chui Ping Ooi

On-Chip Synthesis of Surface-Enhanced Raman Scattering Nanoparticles for Malaria Field Diagnosis 38
Clement Yuen, Quan Liu, Chui Ping Ooi

Selective Area Growth-Based InP/InGaAs Geigermode Avalanche Photodiode Arrays for Single-Photon Imaging 40
O. J. Pitts, A. W. Walker, C. Flueraru, C. Storey, M. Hisko, A. J. Spring Thorpe, E. Kizilkan, H. K. Yildirim C. Bruschini, E. Charbon

A Python-based Electro-Optic Simulation Framework for Photonic Neuromorphic Systems 42
Mostafa Elshazly, Ahmad Hassan

Nonlinear Dynamics of Dual-Pumped Degenerate Optical Parametric Oscillators 44
Juan Diego Mazo-Vásquez, Luca O Trinchão, Miguel Nienstedt, Luiz Peres, Eduardo S. Gonçalves Alekhya Ghosh, Arghadeep Pal, Julius T. Gohsrich, Laís Fujii dos Santos, Paulo F. Jarschel Thiago P. M. Alegre, Nathalia B. Tomazio, Pascal Del'Haye, Flore K. Kunst, Lewis Hill Gustavo S. Wiederhecker

Analytical Characterization of State Bifurcations in Kerr Resonators 46
Juan Diego Mazo-Vásquez, Julius T. Gohsrich, Flore K. Kunst, Lewis Hill

All-Fiber Brillouin Spectrometer 48
M. Khosravi, S. Chagnon-Lessard, O. Kutova, G. K. Palsson, H. Jean-Ruel

Tunable Photonic Devices Based on Mixed Ionic- Electronic Conductors 50
Alicia Ruiz-Caridad, Francesco Chiabrera, Paul Nizet, Ana-Maria Statie, Christian Lafforgue Daniel Navarro-Urrios, Lluís Yedra, Sergi Hernandez, Paolo Pellegrino, Laurent Vivien, Albert Tarancon

Down-Conversion Emission of Rare-Earth Doped Silicon Oxide Thin Films 53
Parnia Badkoubeh Hezaveh, Peter Mascher, Zahra Khatami

Optisystem Software Enabling Photonic Integrated Circuits Simulation from Mask Layout to System Characterization 55
Khaled Atia, Scott Newman, Saurabh Bedi, Cem Bonfil, Ahmad Atieh

Steady-State Optical-Diffraction-Based CO_2 Concentration Sensor Using Polymer-Coated Diffraction Gratings 57
Abdulaziz H. Albdowi, Waseem S. M. Faheem, Ahmed Kreta, Christen Tharwat, Amany Khalifa Mohamed A. Swillam

Inner Canthi Temperature Mapping Using Single-Pixel Infrared Imaging Thermometry 62
Cheng Jiang, Patrick Kilcullen, Yingming Lai, Tsuneyuki Ozaki, Jinyang Liang

Design of a Low-Loss Narrowband Frequency Demultiplexer Using Multimode Waveguide Gratings 64
Leila Mehrvar, Thomas Jenniwein, Ahmad Atieh, Chang-qing Xu

Photonic Wire Bonding-Enabled Hybrid Integration of Multi-Wavelength Coherent Comb Lasers 66
Guocheng Liu, Philip J. Poole, Jiaren Liu, Xiaoran Xie, Yang Qi, Pedro Barrios, Daniel Poitras, Ping Zhao Martin Vachon, Boris Lamontagne, Mathieu Lebeuf, Fahimeh Armin, Francis Duhamel, Issam Boughanmi Hamza Jidi, Jean-Michel Fortier, Neda Nouri, Annabelle Gascon, Damien Michel, Zhenguo Lu

Toward the Deployment of Mid-IR Gb/s FSO Links: Laboratory Validation of a Packaged DFG-SFG Transceiver 68
S. S. Rizi, T. Guo, F. Yuan, L. Flannigan, R. Cheriton, D. Poitras, G. Liu, X. Xie, Z. Lu, C.-H. Chen L. Graham, A. Atieh, C. Q. Xu

Frequency-Bin Photon-Pair Comb Generation via Cavity-Enhanced SPDC in a Grating-Based Waveguide 70
S. S. Rizi, L. Mehrvar, M. Wu, S. Oghbaey, T. Firdous, W. Wu, A. Atieh, T. Jennewein, C. Q. Xu

Direction-Dependent Mode Selectivity in Surface Nanoscale Axial Photonic Resonators 72
Emily Eadie, Sophia Padvaiskas, C. Peer-Groves, Pablo Bianucci

Simulating a Free Space Optical Link Model for Simultaneous Data and Power Transmission in the C-band 74
Idriss Amadou Ali, Harry W. Wu, Ross Cheriton, Ahmad Atieh, Karin Hinzer

Cascaded Brillouin-Seeding of Kerr Microcombs in SNAP Resonators 76
Emily Eadie, Juan Diego Mazo-Vásquez, Sophia Padvaiskas, Flore K. Kunst, Lewis Hill, Pablo Bianucci

Gain Switched Widely Tunable Fiber Laser with Cascaded Thulium and Bismuth Doped Fiber for 1700 nm Band 78
Ali Roohforouz, M. R. K. Soltanian, Pin Long, Lawrence R. Chen

An 80 Gbps Free Space Optics Transmission System Enabled by Dual-Polarized Orbital Angular Momentum Multiplexed Beams: Impact of Indian Weather Conditions 80
Sonam Khattar, Rohit Sharma, Mehtab Singh, Somia A. Abd El-Mottaleb

High-Capacity Optical Transmission: An Integrated MMF-FSO Transmission System with PDM and OAM Multiplexing 82
Sonam Khattar, Mehtab Singh, Rohit Sharma, Somia A. Abd El-Mottaleb

Sub-Diffraction Mapping of Single NV Centers Using Tunable Electric Field Saddle Points 84
Kimy S Jaimes, Joe A Smith, Zahra Khatami

Enhancing Laser Lifetime and Performance Through in Situ Cleaning and Doping Techniques 86
Spencer McDermott, Bernard Paquette, Muhammad Mohsin, Omid Salehzadeh Einabad, Ping Zhao Mohamed Rahim, Yanen Guo, Grzegorz Pakulski

30-Fold Enhancement of Quantum-Dot-Based Extended Short-Wavelength Infrared Detectors via Plasmonic Nanostructure Arrays 87
A. W. Walker, S. Bin-Alam, C. Storey, J. Lapointe, A. J. Springthorpe, O. Reshef, R. W. Boyd, K. Dolgaleva O. J. Pitts

Distributed Birefringence Measurement in Single Shot Using Chirped Pulse Based on BDG Mechanism 89
Yuelang Huang, Juntong Yang, Liang Chen, Xiaoyi Bao

Semiconductor-Based Photonic Crystal Waveguides for Efficient Time-Resolved Terahertz Platforms 91
Hesam Heydarian, Aswin Vishnuradhan, Ariana Rodríguez Escamilla, David Girard, Graham Killaire Arnaud Weck, Angela Gamouras, Jean-Michel Ménard

Direct Dispersion Characterization Technique for Short Single-Pass Waveguides 93
Nathalie Vermeulen, Ryu Niigaki, Takashi Inoue, Hugo Thienpont, Koyo Watanabe

Modeling and Experimental Study of Proton-Induced Transient Effects in Silicon Photonic Integrated Circuits 95
Purvaja Karthikeyan, Brett Poulsen, Stephen Amey, Aref Bakhtazad, Jayshri Sabarinathan

Structured Light Meets Structured Matter Over a Length Scale of Nine Orders of Magnitude 97
Akshay Rairakhia, Dylan Gordon, Ilya Golub

Measurement Basis Determines Observation: Optical Chirality-Induced Rotation Sense of a Structured Light Beam Depends on the Type of Polarization Vortex Used 99
Danica Allen, Devon Clermont-Gauer, Ilya Golub

Three for the Price of One: Reconfigurable Generation of Gaussian, Flattop and Vortex Beams 101
Owen Stewart, Dean Smith, Ilya Golub

Complex Bragg Grating Sensor Design Based on Parity-Time and Anti-Parity-Time Symmetry State Evolution 103
Tianyi Hao, Pavel Cheben, Jens H. Schmid, Pierre Berini

Photonic Crystal-Based Polarization Beam Splitter on SOI Platform 105
Dilsha Appu-Hennadi, Khaled Mnaymneh, Winnie N. Ye

Enhanced Photon Extraction from GaN Point Defect Single-Photon Emitters via Top-Down Fabricated Nanowires 107
A F M Iftekhar Rasul, Md Fardin Ahmed, Dipon Kumar Ghosh, Nirmal Anand, Sharif Md. Sadaf

Heterogeneously Integrated Quantum Dash-on-Silicon Semiconductor Optical Amplifiers 109
Ibrahim Elmallah, Boris Lamontagne, Pedro Barrios, Simon Wingar, Seid Jebril Mohammed Kelly Laliberte, Zhenguo Lu, Sylvie Menezo, Florian Denis-Le Coarer, Olivier Girard, Apolline Puaud Sharon Hsu, Joyce Poon, Philip J. Poole, Torrey Thiessen

Generalized Angular Momentum Conservation in Discrete Systems with Nonlinear Band-Touching 111
Yihan Wang, Domenico Bongiovanni, Dario Jukić, Sihong Lei, Zhichan Hu, Daohong Song, Jingjun Xu Roberto Morandotti, Hrvoje Buljan, Zhigang Chen

Higher-Order Topological Insulators and Bound States in the Continuum with Arbitrary Dimensions 113
Domenico Bongiovanni, Ziteng Wang, Zhichan Hu, Roberto Morandotti, Zhigang Chen

Frequency- and Time-Domain Fiber-based and Integrated Photonics for Quantum Applications 115
Domenico Bongiovanni, Xutong Wang, Hao Yu, Stefania Sciara, Nicola Montaut, Benjamin Crockett Brent E. Little, Zhiming Wang, Ulf Peschel, Sai T. Chu, José Azaña, David J. Moss, Roberto Morandotti

Saturation Effects in DSTMS Pumped by Raman- Shifted Pulses 117
Malte L. Welsch, Luca Zanotto, C. Praise Anyanwu, Merlyn J. Juarez, Andreea-Aura Paraipan Young-Gyun Jeong, Roberto Morandotti, Mostafa Shalaby, Bruno E. Schmidt, Riccardo Piccoli Luca Razzari

Terahertz Identification of Black Pigment Concentration in Plastics 119
André-Louis Morneau, Niranjan Jadhav, Nourin Sultana, Emna Helal, Maksim Skorobogatiy Mariia Zhuldybina

Ultra-Compact and Highly Efficient Inverse-Designed Taper for Fiber-to-TFLN Nanowaveguide Coupling 122
Tayyaba Firdous, Mulei Wu, Thomas Jennewein, Ahmad Atieh, Chang-qing Xu

Plasmonic Ag NPs Anchored on 2D Bismuth Oxybromide for Improved Visible Light Harvesting 124
Md Masud Rana, Kazi M. Alam, John C. Garcia, Karthik Shankar

Hydrostatic Pressure Monitoring with Optical Telecom Fibers by Means of Forward Stimulated Brillouin Scattering 126
Carlos Álvarez-Ocampo, Aleksander S. Paterno, Antonio Díez, Martina Delgado-Pinar, Jose Luis Cruz Miguel V. Andrés

Forward Stimulated Brillouin Scattering for Remote Sensing in Harsh Environments 128
Carlos Álvarez-Ocampo, Aleksander S. Paterno, Antonio Díez, Martina Delgado-Pinar, Jose Luis Cruz Miguel V. Andrés

Purcell Enhancement of Efficient Single Photon Sources in Bullseye Cavity for O-Band Communication 130
Rezoana Bente Arif, Arez Nosrat Pour, Zahra Khatami

Augmented Low-Index Waveguides for Active Silicon Photonic Devices 132
Golden Sun, J. Stewart Aitchison

A Cautionary Tale for Photonic-State-Quality Metrics 134
Aaron Z. Goldberg

Comparative Performance of 1.6 µm and 3.4 µm Wavelengths for Methane Detection via Cavity Enhanced Absorption Spectrometry 136
Alexandre Chiasson, Saeed Salimian Rizi, Joshua Kneller, Tianyi Guo, Fred Maly, Chang-Qing Xu

Volumetric Bio-Imaging Using Zeroth-Order Bessel Beams in Second Harmonic Generation Microscopy 138
Bhawna Bhawna, Fariborz Ehteshami, Jysiane Cardot, Isabelle Plante, François Légaré, Arash Aghigh

Deterministic Photon Subtraction in a Chiral Waveguide QED Platform 140
Abdolreza Pasharavesh, Supratik Sarkar, Sai Sreesh Venuturumilli, Michal Bajcsy

Performance Enhancement of Ge/Si APDs by Electric Field Engineering in the Multiplication Region 143
Feng Guo, Andrew P. Knights

Electro-Optic Imaging of Terahertz Vector Fields 145
Jonathan Lafreniere-Greig, Xavier Ropagnol, Salim Hmidi, Rebeca Tudor, François Blanchard

THz Generation via Tilted-Pulse-Front Scheme in $LiNbO_3$ Slab Pumped by Yb-Laser 147
J. E. Nkeck, S. Mine, G. Gandubert, J. Lafreniére-Greig, S. Himdi, X. Ropagnol, K. Murate, F. Blanchard

AI-Enhanced Terahertz Spectroscopy for Real-Time Classification of Plastics for Recycling and Sorting Applications 149
Rejeena R Sebastian, Charles Simard, Redwan Ahmad, Leyla Agosti Cagalli Burri, Christian Tardif Francois Blanchard

Broadband THz Pulse Non-Colinear Parametric Detection in Slab Lithium Niobate Waveguide 151
Gabriel Gandubert, Joel Edouard Nkeck, Jonathan Lafrenière-Greig, Xavier Ropagnol, François Blanchard

Polarimetric Characterization of Quarter-Wave Plate in the Terahertz Range 153
Salim Hmidi, Rebeca Tudor, Xavier Ropagnol, Octavian Simionescu, Jonathan Lafrenière-Greig François Blanchard

Impact of Semiconductor Surface Roughness on Terahertz Emission from Photoconductive Antennas 155
Leyla Agosti Cagalli Burri, Gabriel Gandubert, Joel Edouard Nkeck, Xavier Ropagnol, François Blanchard

Scaleable Silicon-on-Insulator Based Metasurfaces for Mid-Infrared Polarization Control 157
Victoria Leaker, Mitchell Semple, PierreBerini

Giant Teraherz Kerr Response in Semiconductors: Intensity Measurement, Imaging and Nonlinear Spectroscopy Applications 161
Xavier Ropagnol, Jonathan Lafrenière-Greig, Gabriel Gandubert, Carlos Miguuel Garcia Rosas Tsuneyuki Ozaki, François Blanchard

Time-Resolved THz System Using BNA Crystals and a Single-Ring-Fiber Pulse Compressor to Reach a 25 THz Bandwidth 163
W. Cui, A. Vishnuradhan, M. Lippl, E. K. Yalavarthi, A. Gamouras, N. Y. Joly, J.-M. Ménard

Compact Terahertz Polarization-Resolved Measurements Using Frequency-Selective Intensity Detection 165
Redwan Ahmad, Charles Simard, Rejeena R. Sebastian, Jonathan Lafrenière-Greig, Xavier Ropagnol François Blanchard

Excimer Laser Induced Graphene Interdigitated Electrodes for Sensors 167
James Botte, Hubert Jean-Ruel, Ravi Prakash

Scaling Limits in Green InGaN Nanoscale Light-Emitting Diodes 169
Nirmal Anand, Arnob Ghosh, Sharif Sadaf

Photophysics and Light-Matter Interactions for Enhanced Optical and Optoelectronic Properties of Organic Materials and Two-Dimensional Magnets 171
Roshell Lamug, Kevin Dimmitt, Piper Aislinn, Anthony Winchell, Ahasan Ullah, Tasnim Sarker Li-Jing Cheng, Oksana Ostroverkhova

Thermo-Optic Properties of Nitrogen-Rich Silicon Nitride Measured using Spectroscopic Ellipsometry 173
Gregory Thomas, Fahmida Azmi, Peter Mascher, Andrew P. Knights

Engineering the Surface Recombination Velocity in Nanoscale InGaN p-i-n Photodiodes 175
Arnob Ghosh, Nirmal Anand, Sharif Sadaf

Optimizing Differential Control to Reduce Switching Time in Asymmetric TO-MZI Optical Switches 177
Mohammad Rezaul Islam, Manuel Mendez-Rosales, Ranjan Das, Andrew P. Knights

Impact of Interfacial Oxidation on Sputter-Deposited Al_{1-x} Sc_x N Thin Films for Photonic Applications 179
Dipon Kumar Ghosh, Christy Giji Jenson, Nirmal Anand, A F M Iftekhar Rasul, Sharif Sadaf

Random Plasmonic Metasurface for Enhanced Second Harmonic Generation 181
M.R. Mohammadpour, S. Aghili, A. Thulaseedharan, L Fujii Dos Santos, P. Ghavami, A. Staudte L. Ramunno, K. Dolgaleva

Imaging MHz Acoustic Microbubble Dynamics using Compressed Ultrahigh-Speed Microscopy 183
Miguel Marquez, Yingming Lai, Miao Liu, Elahe Memari, Brandon Helfield, Jinyang Liang

Evaluation of Surgical Surface Topography Effects in Deep Learning-Enabled 3D Fluorescence Imaging 185
Arthur Zhou, Sujit Patil, Leyla Rana Copty, Maryam Abdella, Jonathan C. Irish, Michael J. Daly

Deep Learning-Enabled 3D Fluorescence Imaging for Surgical Guidance: Optimization Across Wavelength and Spatial Frequency 187
Leyla Rana Copty, Sujit Patil, Arthur Zhou, Maryam Abdella, Jonathan C. Irish, Michael J. Daly

Accessible Two-Dimensional Animated Raytracing Based on Scalable Vector Graphics Illustration 189
Patrick Kilcullen, Tsuneyuki Ozaki, Jinyang Liang

Optimizing the Photoluminescence Properties of CdSe/CdS Colloidal Quantum Dots Doping Nanocomposites for Use in Fabricating All-Fiber Single-Photon Sources 191
William Forrester, Xavier Mathieu, Wei Shi, Claudine Allen

Real Time Distributed Temperature Sensing of Long Laser Cooled Glass Samples and Fiber Lasers 195
M. Aïssaoui, T. Meyneng, A. Roberge, Y. Messaddeq, R. Kashyap

Fisher-Optimized Multiplane Light Conversion for Quantum Parameter Estimation 197
Abhinav Sinha, Kai Wang

Cobalt Oxide-Modified GaN Nanowires for Photodetection in Underwater Optical Communication 199
Samuel Olakunle Adigbo, Md. Afjalur Rahman, Md. Moinul Islam, Dipon Kumar Ghosh, Md. Fardin Ahmed Christy Giji Jenson, Nirmal Anand, Sharif Md. Sadaf

Reconfigurable Optical Crosshaul Networking for Future Wireless Communication Networks 201
Christina Lim, Yijie Tao, Chathurika Ranaweera, Sampath Edirisinghe, Ampalavanapillai Nirmalathas

High Performance Silicon Nitride Passive Optical Components and Tunable Active Filter on Monolithic Silicon Photonics [Invited] 203
Ahmed Abumazwed, Niharika Kohli, Sujith Chandran, Henry Frankis, Won Suk Lee, Hanyi Ding Abdel-salam Aboketaf, Michal Rakowski, Kevin Dezfulian, Arman Najafi, Takako Hirokawa, Qidi Liu Andy Stricker, Subramanian Krishnamurthy, Kate McLean, Ryan Sporer, Michelle Zhang, Shenghua Song Helen Wong, Salman Mosleh, Janet Tinkler, Jae Gon Lee, Vikas Gupta, Anthony Yu, Ken Giewont Ted Letavic

Efficient Optical Chip Interfacing in Silicon Nitride Photonics 206
Daniel Benedikovic, Radovan Korcek, William Fraser, Adam Petrovic, Quentin Willmart, David Medina Samson Edmond, Thalia Dominguez Bucio, Frederic Gardes, Cameron Horvath, Shurui Wang Martin Vachon, Rubin Ma, Dan-Xia Xu, Jan Litvik, Ivan Glesk, Pavel Cheben, Jens H. Schmid Laurent Vivien, Carlos Alonso-Ramos, Winnie N. Ye

NIR to Visible Spectral Upconversion Nanomaterials Based Luminescent Solar Concentrator for Smart Window Photonic Device 208
Mayank Gupta, Paramsinh Zala, Brijesh Tripathi, Prakash Chandra

Thermal Compensation and Sensitivity Enhancement in Vernier Paired Ring Resonator Biosensor 210
Md Omar Faruque, Andrew G. Kirk

LUQIA's Fabrication Platform for Nonlinear Integrated Photonic Circuit Using Thin Film Lithium Niobate on Insulator (LNOI) 212
H. Oulachgar, F. Provencal, J. E. Paultre, J. P. Dery, C. Lemieux-Luduc, F. Genereux, M. Poirier A. Paquet, C. Alain, A. Fougères

Impact of Thickness on Device Performance in Thin-Film Lithium Niobate Photonic Integrated Circuits 214
C. Lemieux-Leduc, F. Généreux, S. Boudreau, P. Jean, H. Oulachagar

Performance Investigations of a Curved-Edge Ridge Design in InAs/InP Quantum-Dash SOA 216
Y. Qi, M. Rahim, M. Mohsin, O. Salehzadeh Einabad, D. Poitras, P. Poole, G. C. Liu, J. R. Liu, X. R. Xie M. Vachon, J. Weber, P. Barrios, P. Zhao, Z. G. Lu

Ultra-Narrow Linewidth, Feedback-Robust U-Shaped Laser 218
Jeppe H. Surrow, Jesper H. Kirkegaard, Chris Hoede, Nick Volet

Towards High-Power and Low-Loss Adiabatic Fiber Couplers Fabricated by 4.6 um Quantum Cascade Laser Irradiation 220
Sébastien Quatresooz, François Gonthier, Patricia Cristina Manarazan, Sébastien Loranger

The Monolithic Topology of Quasi-BIC Resonances in Dimer Metasurface 222
Abdullah Bin Shams, J Stewart Aitchison

Wafer Scale Laser Integration to Resonators Using Photonic Wire Bonding for Portable Biosensing 224
Sheri Jahan Chowdhury, Ben Cohen-Kleinstein, Rhiannon Evans, Samantha M. Grist, Peter van den Doel Ella Yan, Sudip Shekhar, Karen C. Cheung, Lukas Chrostowski

Exploring Molecular Dynamics Using Molecular Dynamics at ALLS 227
Yonghao Mi, Pooya Ghavami, Nida Haram, André Staudte, Andrea Carolina Vilcacundo Tulcanaza Zeming Dai, Joseph Sanderson, Mayank Kumar, Maghsoud Arshadipirlar, Reza Safaei, Marie Ouillé Stephen Londo, François Légaré, Heide Ibrahim

Quantum-Dash Gain Medium Based Millimeter-Wave Over Fiber Fronthaul Transmission System 229
Xiaoran Xie, Guocheng Liu, Jiaren Liu, Philip J. Poole, Yang Qi, Daniel Poitras, Penghui Ma Pedro Barrios, John Weber, Martin Vachon, Xiupu Zhang, Zhenguo Lu

AI-Based Parametric Optimization of Multi-Mode Multi-Slot Interference 231
Passant Hesham, Mariam M. Elkoddosy, Mohamed A. Swillam

Zinc Oxide- Silver for Ethanol Detection 233
Ahmed Kreta, Mohamed A. Swillam

Design and Simulation of Photonic Ring Resonator for Propanol Detection 237
Ahmed Kreta, Mohamed A. Swillam

Wavelength-Dependent Contrast in Deep Ultraviolet Photon Absorption Remote Sensing of Fixed Animal Tissue 239
Muhammad Umar Ali, Muhammad Mohsin Qureshi, James E. D. Tweel, Benjamin R. Ecclestone James A. T. Simmons, Parsin Haji Reza

Self-Supervised Permutation and Interpolation-Based Noise2Noise Denoiser (SPIN) for High-Speed Voltage Imaging 243
Derek Li, Guangrui Ding, Carolyn Marar, Ji-Xin Cheng

Spectral Overlap-Induced Sign Inversion in UV-Vis Antioxidant Monitoring 245
Solomiia Dyka, Anastasiia Sosnovska, Antonina Tarnovska, Anastasiia Heneha, Yaryna Shalai Oleksii Kolomoitsev, Konstantin Beloshenko, Oleg Glukhov, Ronald E. Miller, Iuliia Riabenko

UV Reflectance Optical Diagnostics of Temperature-Dependent Structural Organization in Lubricating Oil 248
Alina Popova, Renata Naumenko, Konstantin Beloshenko, Oleg Glukhov, Mykyta Shevelev, Jeff Manthorpe Ronald E. Miller, Iuliia Riabenko

Matrix-Normalized SERS Detection of Antioxidant Additives in Lubricating Oils 251
Renata Naumenko, Alina Popova, Konstantin Beloshenko, Oleg Glukhov, Jeff Manthorpe, Ronald E. Miller Iuliia Riabenko

Entropy-Guided Binary Fingerprinting of Raman Spectra for Rapid Classification of Oil Additive Concentrations 254
Iuliia Riabenko, Hlib Kalashnikov, Maksym Opilat, Sergey Shulga, Ronald E. Miller, O.V. Glukhov Konstantin Beloshenko

Nonlinear Degradation Kinetics in HEFA-Jet A-1 Blends Revealed by Photonic Spectroscopy 257
V. Tkachenko, O. Bets, A. Tarnovska, S. Tistechok, K. Beloshenko, R.E. Miller, O.V. Glukhov Iuliia Riabenko

Tunable Doped-Silicon Plasmonic Metasurfaces for Mid-IR Super-Absorption and Enhanced Sensing (Invited Paper) 260
Abdelrahman M. Ghanim, Mohamed A. Swillam

Epsilon-Near-Zero Metamaterial for Refractive Index Sensing 261
Moataz. M. Farouk, Abdelrahman M. Ghanim, Mohamed A. Swillam

Compact Metamaterial-Based 90-Degree Optical Hybrid for Coherent Detection 263
Ruxin Zhang, Andrew Anuichi, Minu Sunny, Winnie N. Ye