9th International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2021)

Online 11 – 13 February 2021

Editors:

Maria Raposo Paulo Ribeiro

ISBN: 978-1-7138-4020-6

Printed from e-media with permission by:

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



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2021) by SCITEPRESS – Science and Technology Publications, Lda. All rights reserved.

Printed with permission by Curran Associates, Inc. (2021)

For permission requests, please contact SCITEPRESS – Science and Technology Publications, Lda. at the address below.

SCITEPRESS – Science and Technology Publications, Lda. Avenida de S. Francisco Xavier, Lote 7 Cv. C, 2900-616 Setúbal, Portugal

Phone: +351 265 520 185 Fax: +351 265520 186

info@scitepress.org

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

Email: curran@proceedings.com Web: www.proceedings.com

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS	
Energy Efficient Multi Terabit Photonics: Quantum Dots at Work Dieter Bimberg	5
Tailoring Light Emission with Metasurfaces Jean-Jacques Greffet	7
Nanostructures, Few Molecules Detection and Imaging Enzo Di Fabrizio	9
Quantum Optical Heat Machines: Engines, Refrigerators, Transistors Gershon Kurizki	11
PAPERS	
FULL PAPERS	
Feature Extraction and Neural Network-based Analysis on Time-correlated LiDAR Histograms Gongbo Chen, Pierre Gembaczka, Christian Wiede and Rainer Kokozinski	17
Numerical Simulated Concept and Mechanical Proof of Concept for a Transmission OCT (tOCT) Andreas Drauschke, Katharina Dettelbacher, Michaela Kienberger, Sarah Nagl and Christian Milz	23
Moving Solitons in Coupled Bragg Gratings with a Uniform and a Nonuniform Bragg Gratings Md. Bellal Hossain and Javid Atai	32
Effect of Phase Mismatch between the Bragg Gratings on the Stability of Gap Solitons in Semilinear Dual-core System <i>Shuvashis Saha and Javid Atai</i>	36
Strong Modulation of Absorption and Third-Harmonic Generation in Resonant Metasurfaces based on VO2 Margherita Marni and Domenico de Ceglia	40
Nanosphere Photolithography: The Influence of Nanopore Arrays Disorder on Extraordinary Optical Transmission Andrei Ushkov, Olivier Dellea, Isabelle Verrier, Thomas Kampfe, Alexey Shcherbakov, Jean-Yves Michalon and Yves Jourlin	46
A Study on Enhanced Fluorescence Signal-to-noise by using the Stray Light Shutter for Quantitative	

Liang-Chieh Chao, Chun-Han Chou, Hsin-Yi Tsai, Kuo-Cheng Huang and Dar-Bin Shieh

54

SHORT PAPERS

Metrology and Standardization of High Speed Pluggable Optical Interconnects Robert Ferguson, Irshaad Fatadin, Ka-Ming Liu, Irene Barbeito, Christian Hart, Richard Pitwon and David Robinson	63
High Uniformity Design of UV LED Illuminators for Exposure Equipment Chun-Han Chou, Yu-Hsuan Lin, Hsin-Yi Tsai, Ray-Ching Hong and Yi-Yung Chen	68
2D and 3D Measurement Algorithms for Real Front and Back Curved Surfaces of Contact Lenses Kentaro Saeki, Decai Huyan, Akira Nakamura, Shin Kubota, Kenji Uno, Kazuhiko Ohnuma and Tatsuo Shiina	73
A Novel Approach for Experimental Earthquake Engineering Utilizing Mirror Reflections of Point Clouds Collected by Laser Scanner Shakhzod Takhirov, Mukhady Israilov and Sultan Kudratov	81
Evaluation of Thermal Resistance of Surface-emitting Quantum Cascade Laser using Structural Function and 3D Thermal Flow Simulation Shigeyuki Takagi, Hirotaka Tanimura, Tsutomu Kakuno, Rei Hashimoto, Kei Kaneko and Shinji Saito	88
Performance Analysis of PAM4 Signal Transmission in Inter-datacenter Multicore Fiber Links Impaired by Inter-Core Crosstalk Rafael A. Dias, João L. Rebola and Adolfo V. T. Cartaxo	94
Sparse Image Reconstruction for the SPIDER Optical Interferometric Telescope Luke Pratley and Jason D. Mcewen	104
Junction Temperature Measurement in Optically-Controlled Power Mosfet Sandro Rao, Elisa D. Mallemace, G. Cocorullo, L. Dehimi and Francesco G. Della Corte	110
Boundary Burr Phenomenon for Long-path Time Domain OCT <i>Tatsuo Shiina</i>	115
Short-reach 200 Gb/s SDM Network Employing Direct-detection and Optical SSBI Mitigation <i>Tiago D. Freitas M., Tiago M. F. Alves and Adolfo V. T. Cartaxo</i>	122
Formation of Hybrid Resonators in the Semiconductor Circular Ring Laser Diode and Its Output Characteristics Chun Ting Tsen, Ming Chang Shih and Wen Ho Lan	131
Measuring Centers of Special Targets in Digital Still Images and Movie Frames: Approach and Evaluation Shakhzod Takhirov	136
AUTHOR INDEX	143