

2015 International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2015)

**Berlin, Germany
12-14 March 2015**

**Volume 1
Pages 1-178**



**IEEE Catalog Number: CFP1547X-POD
ISBN: 978-1-4673-8407-0**

**Copyright © 2015, SCITEPRESS – Science and Technology Publications
All Rights Reserved**

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

IEEE Catalog Number:	CFP1547X-POD
ISBN (Print-On-Demand):	978-1-4673-8407-0
ISBN (Online):	978-989-758-141-0

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

CURRAN ASSOCIATES INC.
proceedings
.com

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Fundamentals and Applications of Plasma Filaments <i>Ludger Wöste</i>	IS-5
New Advances in Fabry-perot Cavity for Sensing Applications <i>Orlando Frazão</i>	IS-7
Nonlinear Optics in Silicon Photonics <i>Klaus Petermann</i>	IS-9
Varying Speed of Light, Cosmic Structure and the Quest for Quantum Gravity <i>João Magueijo</i>	IS-11
FiberLab – A Multi-sensing Approach in a Single Optical Fiber <i>Wolfgang Schade</i>	IS-13

OPTICS

FULL PAPERS

Design of an Optimized Distal Optic for Non Linear Endomicroscopy <i>Claire Lefort, Hussein Hamzeh, Liu Wei, David Sevrain, Philippe Leproux, Frédéric Pain and Darine Abi Haidar</i>	5
DPSK Signals Demodulation Based on a Graded-index Multimode Fiber Mismatch Spliced between Two Single-mode Fibers <i>Xiaoyong Chen and Paloma R. Horche</i>	13
Periodic and Metallic Nano-structures Patterned by Contact Transfer Lithography with Application on Localized Surface Plasmon Resonance <i>Hao-Yuan Chung, Chun-Ying Wu and Yung-Chun Lee</i>	20
Spectroscopic Study of Some IED's Precursors by Means of Laser Photoacoustic Spectroscopy Combined with Multivariate Analysis <i>A. Puiu, G. Giubileo and A. Palucci</i>	26

SHORT PAPERS

Scattering of a Partially Coherent Pulse from a Sphere with Semisoft Boundaries <i>Hai Xia Wang, Chao Liang Ding, Yong Tao Zhang, Zhi Guo Zhao and Liu Zhan Pan</i>	
A Quick Method to Determine the Impurity Content in Gold Ornaments by LIBS Technique <i>A. F. M. Y. Haider, S. Sengupta and K. M. Abedin</i>	41
Optical Measurement of Temperature in Tissue Culture Surfaces under Infrared Laser Light Excitation at 800nm using a Fluorescent Dye <i>Claire Lefort, David Moreau, Philippe Lévêque and Rodney O'Connor</i>	47

Spatiotemporal Complex Geometrical Optics (CGO) of N 3D Interacting Asymmetric Gaussian Wave Packets in Nonlinear Medium - CGO as the Simplest and Efficient Method for Spatiotemporal Evolution <i>Pawel Berczynski and Slawomir Marczyński</i>	53
TE Modes in Liquid Crystal Optical Fibers Embedded with Conducting Tape Helix Structure <i>Masih Ghasemi and P. K. Choudhury</i>	61
Kinetics of Photosensitivity in Ge-Sb-Se Thin Films <i>M. Olivier, R. Boidin, P. Hawlová, P. Němec and V. Nazabal</i>	67
High Performance Silicon-on-Sapphire Subwavelength Grating Coupler for 2.7 μ m Wavelength <i>Jingjing Zhang, Junbo Yang, Wenjun Wu, Honghui Jia and Shengli Chang</i>	73
Latest Achievements in Chemical Composition Optimization of Photo-Thermo-Refractive Glass and Its Applications <i>S. A. Ivanov, N. V. Nikonorov and A. I. Ignatiev</i>	78
Measuring Distance by Angular Domain Filtering <i>Wei-Jun Chen</i>	85
High Resolution Spectroscopy of Sweeteners <i>G. Giubileo, I. Calderari and A. Puiu</i>	91
Mechanical Characterisation of the Four Most Used Coating Materials for Optical Fibres <i>Yazmin Padilla Michel, Massimiliano Lucci, Mauro Casalboni, Patrick Steglich and Sigurd Schrader</i>	96
Amorphous Ge-As-Te Thin Films Prepared by Pulsed Laser Deposition - A Photostability Study <i>M. Bouška, P. Hawlová, V. Nazabal, L. Beneš and P. Němec</i>	103
Copper-containing Potassium-Alumina-Borate Glass - Structure and Nonlinear Optical Properties Correlation <i>Pavel Shirshnev, Nikolaj Nikonorov, Anastasiya Babkina, Alexander Kim, Dmitrij Sobolev, Ivan Kislyakov, Svyatoslav Povarov, Inna Belousova and Elena Kolobkova</i>	108
Performance Evaluation of the Clustering Based Sequence Equalizer in Direct Detection Optical Communication Links <i>Kristina Georgoulakis and George-Othon Glentis</i>	113
Holographic Recording of Surface Relief Gratings on As ₄₀ S ₆₀ -xSe _x Thin Films <i>L. Loghina, J. Teteris and M. Vlcek</i>	121
Detection of Tumour Containing Sentinel Lymph Node in Breast Cancer by Injection of Fluorescence Tracer through “Dual Route” in Breast Tissue and Intravenously <i>Darakhshan Qaiser, Anurag Srivastava, D. S. Mehta, A. Sharma, Anita Dhar, V. Seenu, K. Dalal, S. Mathur and S. Anand</i>	125

SPECIAL SESSION ON OPTICAL SENSORS

FULL PAPERS

Crack Growth Monitoring by Embedded Optical Fibre Bragg Grating Sensors - Fibre Reinforced Plastic Crack Growing Detection <i>G. Pereira, L. Mikkelsen and M. McGugan</i>	133
Fiber Optic Sensor Configurations <i>R. A. Perez-Herrera and M. Lopez-Amo</i>	140

Cones-assembled Grating for Long-range Fiber-optic Linear Displacement Sensor <i>Zeina El Rawashdeh, Philippe Revel, Christine Prella and Frédéric Lamarque</i>	147
Enhanced Stability and Re-usability of the Optical Sensor for pH Monitoring Using a Layer-by-layer Deposition Technique <i>Nahid Raoufi, Frederic Surre, Muttukrishnan Rajarajan, Tong Sun and Kenneth T. V. Grattan</i>	156
SHORT PAPER	
Development of the Fiber-Optic Sensor with a Large Surface Area to Measure Radioactive Contamination in Soil at Nuclear Facility Site <i>Arim Lee, Chan Hee Park, Rinah Kim, Hanyoung Joo and Joo Hyun Moon</i>	171
AUTHOR INDEX	177

2015 International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2015)

**Berlin, Germany
12-14 March 2015**

**Volume 2
Pages 1-185**



**IEEE Catalog Number: CFP1547X-POD
ISBN: 978-1-4673-8407-0**

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Fundamentals and Applications of Plasma Filaments <i>Ludger Wöste</i>	IS-5
New Advances in Fabry-perot Cavity for Sensing Applications <i>Orlando Frazão</i>	IS-7
Nonlinear Optics in Silicon Photonics <i>Klaus Petermann</i>	IS-9
Varying Speed of Light, Cosmic Structure and the Quest for Quantum Gravity <i>João Magueijo</i>	IS-11
FiberLab – A Multi-sensing Approach in a Single Optical Fiber <i>Wolfgang Schade</i>	IS-13

PHOTONICS

FULL PAPERS

Millimetre-wave Electro-Optic Modulator with Quasi-Phase-Matching Array of Orthogonal-Gap-Embedded Patch-antennas on Low-k Dielectric Material <i>Yusuf Nur Wijayanto, Atsushi Kanno, Hiroshi Murata, Sinya Nakajima, Tetsuya Kawanishi and Yasuyuki Okamura</i>	5
Combination of Characteristic Green's Function Technique and Rational Function Fitting Method for Computation of Modal Reflectivity at the Optical Waveguide End-facet <i>Abdorreza Torabi and Amir Ahmad Shishegar</i>	14
Tunable Mirror and Multi-channel Filter Based on One-dimensional Exponentially Graded Photonic Crystals <i>Bipin Kumar Singh and Praveen Chandra Pandey</i>	22
3-D Analysis of Terahertz Frequency Multiplier Excited Due to Interaction of Convection Electron Beam and Surface Waves - (Smith-Purcell Effect) <i>Alireza Tavousi, Ali Rostami, Ghasem Rostami and Mahboubeh Dolatyari</i>	34
Stochastic Resonances in Photon Number Resolving Detectors <i>Shree Krishnamoorthy, Harish Ravishankar, Pradeep K. Kumar and Anil Prabhakar</i>	40
Silicon-on-Insulator Slot-waveguide Design Trade-offs <i>Patrick Steglich, Claus Villringer, Silvio Dümcke, Yazmin Padilla Michel, Mauro Casalboni and Sigurd Schrader</i>	47

SHORT PAPERS

Bragg Grating Solitons in Semilinear Dual-core System with Cubic-Quintic Nonlinearity <i>Jahirul Islam and Javid Atai</i>	55
Nanophotonic Biosensors Within Lab on Chip Optical Systems <i>Daniel Hill</i>	60

Spatial Mode Conversion by Non-degenerate Four Wave Mixing <i>Sh. Zandi, A. Rostami, Gh. Rostami and M. Dolatyari</i>	69
The Influence of Structure Parameters on Terahertz Wave Filter based on Photonic Crystal Ring Cavity <i>Xiaoying Wei, Heming Chen and Wen Zhou</i>	73
Automatic Waveguide-fiber Alignment Algorithm based on Polynomial Fitting <i>Yu Zheng, Baibing Li and Ji-an Duan</i>	77
Broadband Absorption in the Cavity Resonators with Changed Order <i>Agata Roszkiewicz</i>	81
Creating AlGaAs Photodetectors <i>O. Rabinovich, S. Didenko, S. Legotin and M. Basalevskiy</i>	87
Optical Properties of Coated Nanospheres in Visible Wavelength Range <i>A. Rostami, M. Dolatyari, G. Rostami, S. Khosravi and M. Keshavarz</i>	
Temperature Effect on Intermediate Band Solar Cells (IBSCs) <i>M. Esgandari, H. Heydarzadeh, A. Rostami, M. Dolatyari and G. Rostami</i>	96
A Novel Multiband Filter Design based on Ring Resonators and DSP Approach <i>M. R. Mokhtari, G. Rostami, M. Dolatyari and A. Rostami</i>	101
Simulation and Implementation of a Poly Methyl Methacrylate based Whispering Gallery Mode Ring Resonator in Microwave Range <i>A. Malekpour, A. Rostami, M. Sarmadi, M. Dolatyari and G. Rostami</i>	108
Broadband Negative Refractive Index in the Visible Spectrum <i>M. Keshavarz, S. Khosravi, A. Rostami, G. Rostami and M. Dolatyari</i>	113
Dynamical Diffraction Area Applicability in Case of 1D Photonic Crystals with Sinusoidal Permittivity Profile <i>K. O. Romanenko and A. V. Sel'kin</i>	118
Whole Life-cycle of Superfilament in Water - From Femtoseconds up to Microseconds <i>F. V. Potemkin, E. I. Mareev, A. A. Podshivalov and V. M. Gordienko</i>	122
The Basis of “Atom in the External Field” Eigenfunctions to the Problem of High Harmonic and Terahertz Radiation Generation Study <i>Sergey Stremoukhov and Anatoly Andreev</i>	128
Fabrication of Surface Relief Optical Elements in Ternary Chalcogenide Thin Films by Direct Laser Writing <i>I. Voynarovych, R. Poehlmann, S. Schroeter and M. Vlcek</i>	134
Optical Limiting Characteristics of Fabry–Perot Microresonators at Third-order Nonlinear Absorption and Refraction of the Intracavity Medium <i>A. A. Ryzhov and I. M. Belousova</i>	140

LASERS

FULL PAPERS

Specific Electrodynamical Features of a Plasma Channel Created in Gas by Powerful Femtosecond UV Laser Pulse - Application to the Problem of Guiding and Amplification of Microwave Radiation 149
A. V. Bogatskaya, A. M. Popov and E. A. Volkova

High-power Simultaneously Q-switched and Kerr-lens Mode-locked Eye-safe Nd:YAP/YVO₄ Intracavity Raman Laser Based on Injection Locking 157
Zaijun Chen, Yumeng Liu, Zhenqiang Chen, Hao Yin, Zhen Li and Weidong Chen

SHORT PAPERS

On the Sol-gel Preparation of Selected Lanthanide Aluminium Garnets Doped with Europium 165
L. Pavasaryte, B. J. Lopez and A. Kareiva

Over Ten-millijoule Eye-safe Laser Generation by Extra-cavity Optical Parametric Oscillator Driven with a Diode-pumped Nd:YAG/Cr⁴⁺:YAG Q-Switched Laser 172
Y. P. Huang, Y. J. Huang and Y. F. Chen

Study on Influence of Pumping Spectrum on Stable Uniform Pumping in a Side-Pumped Nd:YAG Amplifier 177
Tianzhuo Zhao, Hong Xiao, Ke Huang and Zhongwei Fan

AUTHOR INDEX 185