

XVII Reunion Iberoamericana de Optica & X Encuentro de Optica, Laseres y Aplicaciones

(RIAO-OPTILAS)

Journal of Physics: Conference Series Volume 274

**Lima, Peru
20-24 September 2010**

Volume 1 of 2

**ISBN: 978-1-61782-659-7
ISSN: 1742-6588**

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© (2010) by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2011)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.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: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Volume 1

DIDACTICS OF OPTICS AND PHOTONICS

012001 Mirages Above the Sea Waters	1
<i>Jesús Blanco-García, Fernando A Ribas-Pérez</i>	
012002 Optics and Children	8
<i>Manuel F M Costa, J Ayres De Campos, Madalena Lira, Sandra Franco, José B Vazquez-Dorrio</i>	

DIFFRACTIVE OPTICS

012003 Color Multiplexing Using Directional Holographic Gratings and Linear Polarization	14
<i>L I Lugo, A Rodríguez, G Ramírez, S Guel, O F Núñez</i>	
012004 Ghost Imaging and Ghost Diffraction with Pseudo-thermal Light Generated by Means of a Programmable SLM	19
<i>M G Capeluto, H Duisterwinkel, C T Schmiegelow, D Francisco, S Ledesma, C Iemmi</i>	
012005 Implementation of the Coupled-wave Method for V-shaped Groove Characterization with a Scanning Differential Heterodyne Microscope	27
<i>I M Akhmedzhanov, D V Baranov, E M Zolotov</i>	
012006 Study of the Diffraction in the Microscope: Annular Condenser	34
<i>L Ciocci, J M Simon, R M Echarri</i>	
012007 Understanding the Physical Optics Phenomena by Using a Digital Application for Light Propagation	39
<i>Daniel-Esteban Sierra-Sosa, Luciano Ángel-Toro</i>	

FIBER OPTICS AND COMMUNICATIONS

012008 Coherent Demodulation of Microwave Signals by Using Optical Heterodyne Technique with Applications to Point to Point Indoor Wireless Communications Systems	51
<i>A García-Juárez, I E Zaldívar-Huerta, G Aguayo-Rodríguez, J Rodríguez-Asomoza, M R Gómez-Colín, A G Rojas-Hernández</i>	
012009 Micro-deformation Measurement on the Concrete Roadway Surface Slabs Using Fiber Bragg Grating and Analysis by Computational Simulation	60
<i>C M Serpa, N D Gomez, F J Velez</i>	
012010 Refractive Index Sensor Using a Two-Hole Fiber	66
<i>D Lopez-Cortes, W Margulis, J J Sanchez-Mondragon, R Dominguez-Cruz, D A May-Arrijo</i>	
012011 Fiber Optic Temperature Sensor Based on Multimode Interference Effects	71
<i>J G Aguilar-Soto, J E Antonio-Lopez, J J Sanchez-Mondragon, D A May-Arrijo</i>	
012012 Modeling the Video Distribution Link in the Next Generation Optical Access Networks	75
<i>F Amaya, A Cárdenas, I Tafur</i>	
012013 Design and Implementation of a Sensor for Environmental Control Based on Fiber Optics	84
<i>Yamelys Navarro Becerra, Cesar Orlando Torres, Francisco J Giacometto</i>	
012014 Photonic Filtering of Microwave Signals in the Frequency Range of 0.01-20 GHz Using a Fabry-Perot Filter	93
<i>G Aguayo-Rodríguez, I E Zaldívar-Huerta, A García-Juárez, J Rodríguez-Asomoza, L Larger, N Courjal</i>	
012015 Experimental Arrangement to Measure Dispersion in Optical Fiber Devices	98
<i>Iván Armas Rivera, Georgina Beltrán Pérez, Juan Castillo Mixcóatl, Severino Muñoz Aguirre, Plácido Zaca Morán</i>	
012016 Supercontinuum Generation in Ge-doped Y-shaped Microstructured Tapered Fiber	104
<i>J Cascante-Vindas, A Díez, J L Cruz, M V Andrés</i>	
012017 Practical Method for Engineering Erbium-doped Fiber Lasers from Step-like Pulse Excitations	110
<i>J D Causado-Buelvas, N D Gomez-Cardona, P Torres</i>	
012018 Study of Lineal and Non-lineal Transmission of an Optical Fiber SAGNAC Interferometer as a Bidirectional Device	118
<i>J Ramos-Beltrán, G Beltrán-Pérez, J Castillo-Mixcóatl, S Muñoz-Aguirre, P Zaca-Morán, C Felipe</i>	

012019 Pulse Processing in Optical Fibers Using the Temporal Radon-Wigner Transform	124
<i>L A Bulus-Rossini, P A Costanzo-Caso, R Duchowicz, E E Sicre</i>	
012020 Refractometric Sensor Based on All-fiber Coaxial Michelson and Mach-Zehnder Interferometers for Ethanol Detection in Fuel	134
<i>L Mosquera, Jonas H Osório, Juliano G Hayashi, Cristiano M B Cordeiro</i>	
012021 Multipoint Sensor Based on Fiber Bragg Gratings	141
<i>O Méndez-Zepeda, S Muñoz-Aguirre, G Beltrán-Pérez, J Castillo-Mixcóatl</i>	
012022 Optically Coupled Cavities for Wavelength Switching	146
<i>Pablo A Costazo-Caso, Sergio Granieri, Azad Siahmakoun</i>	
012023 Hybrid Optoelectronic Device with Multiple Bistable Outputs	155
<i>Pablo A Costazo-Caso, Yiye Jin, Michael Gelh, Sergio Granieri, Azad Siahmakoun</i>	
012024 Secure Optoelectronic Communication Using Laser Diode Driving by Chaotic Rössler Oscillators	166
<i>R Jaimes-Reátegui, R Sevilla-Escoboza, A N Pisarchik, J H García-López, G Huerta-Cuellar, F Ruiz-Oliveras, D Lopez Mancilla, C E Castañeda-Hernandez</i>	
012025 Fiber Optic Pressure Sensor Using Multimode Interference	173
<i>V I Ruiz-Pérez, M A Basurto-Pensado, P Likamwa, J J Sánchez-Mondragón, D A May-Arrijoja</i>	

HOLOGRAPHY AND INTERFEROMETRY

012026 Design of a Phase Shifting Interferometer in the EUV for High Precision Metrology	180
<i>M G Capeluto, M C Marconi, C Lemmi</i>	
012027 Two References Modulation of Polarization for Phase-shifting Holographic Interferometry	189
<i>G Rodriguez-Zurita, N I Toto-Arellano, J F Vazquez-Castillo, C Meneses-Fabian</i>	
012028 Pfaff Equation and Fourier Analysis to Phase Extraction from an Interferogram with Carrier Frequency	195
<i>Francisco Lara-Cortez, Cruz Meneses-Fabian, Gustavo Rodriguez-Zurita</i>	
012029 Amplitude and Phase Characterization by Diffracted Beam Interferometry: Blind DBI	201
<i>E López Lago, H González Núñez, R De La Fuente</i>	
012030 Characterization of Uniaxial Crystals Through the Study of Fringe Patterns	207
<i>F E Veiras, G Perez, M T Garea, L I Perez</i>	
012031 Two-dimensional Characteristic Polynomials in the Direct Calculation of Optical Phase Sum and Difference	213
<i>M Miranda, B V Dorrió, J Blanco, J Diz-Bugarín, F Ribas</i>	
012032 The Monte Carlo Method as a Tool for Statistical Characterisation of Differential and Additive Phase Shifting Algorithms	221
<i>M Miranda, B V Dorrió, J Blanco, J Diz-Bugarín, F Ribas</i>	
012033 Characterization of the Structure of the Coating of Multilayers Using AFM and Interferometric Microscopy	230
<i>Martha I Jerez-A, Laura Lara-O, Luz D Morantes-M, Arturo Plata-G, Yezid Torres, Petr Tsygankov</i>	
012034 Holograms Recorded in Dichromated with Simple Sugars	235
<i>N Y Mejias-Brizuela, A Olivares-Pérez, A Grande-Grande</i>	
012035 Simple Optical Setup Implementation for Digital Fourier Transform Holography	239
<i>G N De Oliveira, D M C Rodrigues, P A M Dos Santos</i>	
012036 Dynamic Moiré Patterns for Profilometry Applications	244
<i>G N De Oliveira, M E De Oliveira, P A M Dos Santos</i>	
012037 Environmental Conditions Influence for Real-time Hologram Formation on Dichromated Polyvinyl Alcohol NiCl₂·6H₂O Doped Films	249
<i>R C Fontanilla-Urdaneta, A Olivares-Pérez, I Fuentes-Tapia, M A Ríos-Velasco</i>	
012038 Holograms Preparation Using Commercial Fluorescent Benzyl	253
<i>V Dorantes-García, A Olivares-Pérez, M J Ordoñez-Padilla, N Y Mejias-Brizuela</i>	

OPTICAL AND DIGITAL IMAGE PROCESSING

012039 Retinal Image Analysis: Preprocessing and Feature Extraction	257
<i>Andrés G Marrugo, María S Millán</i>	
012040 Digital Approximation to Extended Depth of Field in No Telecentric Imaging Systems	265
<i>J E Meneses, C R Contreras</i>	
012041 Fractional Hartley Transform Applied to Optical Image Encryption	271
<i>C Jimenez, C Torres, L Mattos</i>	

012042 Design and Implementation of an Algorithm for Creating Templates for the Purpose of Iris Biometric Authentication Through the Analysis of Textures Implemented on a FPGA	277
<i>F J Giacometto, J M Vilardy, C O Torres, L Mattos</i>	
012043 Template Characterization and Correlation Algorithm Created from Segmentation for the Iris Biometric Authentication Based on Analysis of Textures Implemented on a FPGA	290
<i>F J Giacometto, J M Vilardy, C O Torres, L Mattos</i>	
012044 Unsupervised Defect Segmentation of Patterned Materials Under NIR Illumination	300
<i>María S Millán, Jaume Escofet, Miquel Ralló</i>	
012045 Evaluation of Hybrids Algorithms for Mass Detection in Digitalized Mammograms	308
<i>José Cordero, Johnson Garzón Reyes</i>	
012046 Study of Interhemispheric Asymmetries in Electroencephalographic Signals by Frequency Analysis	320
<i>J F Zapata, J Garzón</i>	
012047 Image Encryption Using the Fractional Wavelet Transform	331
<i>Juan M Vilardy, J Useche, C O Torres, L Mattos</i>	
012048 Design and Implementation in VHDL Code of the Two-dimensional Fast Fourier Transform for Frequency Filtering, Convolution and Correlation Operations	338
<i>Juan M Vilardy, F Giacometto, C O Torres, L Mattos</i>	
012049 Digital Correlation Based on Wavelet Transform for Image Detection	345
<i>L Barba, L Vargas, C Torres, L Mattos</i>	
012050 Optical Implementation of Multifocal Programmable Lens with Single and Multiple Axes	358
<i>Lenny A Romero, María S Millán, Elisabet Pérez-Cabré</i>	
012051 Sign Language Recognition System Using Neural Network for Digital Hardware Implementation	367
<i>Lorena P Vargas, Leiner Barba, C O Torres, L Mattos</i>	
012052 Implementation of the 2-D Wavelet Transform into FPGA for Image	374
<i>M León, L Barba, L Vargas, C O Torres</i>	
012053 Image Processing, Application to the Characterization of Thin Films	382
<i>Manuel F M Costa</i>	
012054 Experimental Color Encryption in a Joint Transform Correlator Architecture	391
<i>Myrian Tebaldí, Sergi Horrillo, Elisabet Pérez-Cabré, María S Millán, Dafne Amaya, Roberto Torroba, Néstor Bolognini</i>	
012055 Phase Alteration Compensation in Reflection Digital Holography	397
<i>O Rincon, R Amézquita, F Monroy</i>	
012056 Diameter and Axial Position Measurement of Micrometric Particles by In-line Digital Holography Using Wavelet Transform	403
<i>Y M Torres, R Amézquita, F Monroy</i>	

OPTICAL APPLICATIONS IN INDUSTRY, MINING, ENGINEERING, BIOLOGY AND MEDICINE

012057 Characterization of a FEL Lamp Type Source Towards a Blue Light Irradiance Intercomparison in Medical Field	410
<i>A F G Ferreira Jr</i>	
012058 Design and Performance of a Sealed CO₂ Laser for Industrial Applications	417
<i>G Botero, D Gomez, D Nisperuza, A Bastidas</i>	
012059 PC-based Systems for Experiments in Optical Characterization of Materials	425
<i>C C López-Mora, M Trejo-Duran, E Alvarado-Méndez, R Rojas-Laguna, E Vargas-Rodríguez, J M Estudillo-Ayala, R Mata-Chavez, I Sukhoivanov, A García-Pérez, O G Ibarra-Manzano, J A Andrade-Lucio</i>	

OPTICAL FABRICATION AND TESTING

012060 Estimation and Compensation of Aberrations in Spatial Light Modulators	431
<i>Augusto Arias, Roman Castaneda</i>	
012061 Techniques for the Construction of an Elliptical-Cylindrical Model Using Circular Rotating Tools in Non CNC Machines	439
<i>Brenda Villalobos Mendoza, Alberto Cordero Dávila, Jorge González García</i>	
012062 Evaluation of the Increment of the Sampling in Optical Testing Using Substructured Ronchi Gratings	450
<i>D Aguirre-Aguirre, F S Granados-Agustín, M Campos-García, A Cornejo-Rodríguez</i>	

012063 Optical Testing with a Knife Edge Interferometer	456
<i>Nikolai Korneev, Fermín S Granados Agustín, Pedro Cebrian Xochihuila, Rufino Díaz Uribe, Alejandro Cornejo Rodríguez</i>	

OPTICAL METROLOGY

012064 Sizing Colloidal Particles from Their Contribution to the Effective Refractive Index: Experimental Results	463
<i>C Sánchez-Pérez, A García-Valenzuela, R Y Sato-Berrú, J O Flores-Flores, R G Barrera</i>	
012065 Hilbert Transform and Optical Tomography for Anisotropic Edge Enhancement of Phase Objects	470
<i>Areli Montes-Perez, Cruz Meneses-Fabian, Gustavo Rodriguez-Zurita</i>	
012066 Digital Holography Microscopy in 3D Biologic Samples Analysis	476
<i>J O Ricardo, M Muramatsu, F Palacios, M Gesualdi, O Font, J L Valin, M Escobedo, S Herold, D F Palacios, G F Palacios, A Sánchez</i>	
012067 Potentialities of the Digital Holography in the Study of the Fraunhofer Diffraction Pattern of Microscopic Objects	485
<i>J O Ricardo, M Muramatsu, F Palacios, M Gesualdi, O Font, J L Valin, M Escobedo, S Herold, D F Palacios, G F Palacios</i>	
012068 A Hand-held 3D Laser Scanning with Global Positioning System of Subvoxel Precision	494
<i>Néstor Arias, Néstor Meneses, Jaime Meneses, Tijani Gharbi</i>	
012069 Diffractive Elements Performance in Chromatic Confocal Microscopy	501
<i>J Garzón, D Duque, A Alean, M Toledo, J Meneses, T Gharbi</i>	
012070 Nanocharacterization of TiN Films Obtained by Ion Vapor Deposition	509
<i>L Lara-O, M Jerez-A, L Morantes-M, A Plata, Y Torres, M Lasprilla, V Zhabon</i>	
012071 Stress and Deformation in Tubular Metallic Parts of Auto Seats	513
<i>Manuel F M Costa, José B Vazquez-Dorrio, Francisco J Queirós De Melo, Joaquim A O Carneiro</i>	
012072 Phase-shifting Real-time Holographic Microscopy Applied in Micro-structures Surface Analysis	526
<i>I V Brito, M R R Gesualdi, M Muramatsu, J Ricardo</i>	
012073 Shear Strain Determination of the Polymer Polydimethylsiloxane (PMDS) Using Digital Image Correlation in Different Temperatures	531
<i>G N De Oliveira, L C S Nunes, P A M Dos Santos</i>	

OPTICAL SPECTROSCOPY, LIBS

012074 Nonlinear Optical Spectroscopy of Isotropic and Anisotropic Metallic Nanocomposites	537
<i>R C Fernández-Hernández, R Gleason-Villagran, C Torres-Torres, J C Cheang-Wong, A Crespo-Sosa, L Rodríguez-Fernández, A López-Suarez, R Rangel-Rojo, A Oliver, J A Reyes-Esqueda</i>	
012075 Hybrid Titanium-Sapphire: Dye Laser	545
<i>Carlos Gerardo Treviño-Palacios, Oscar Javier Zapata-Nava, M David Iturbe-Castillo</i>	

Volume 2

012076 Characterization of Laser-Induced Plasmas by Atomic Emission Spectroscopy	549
<i>Diego M Díaz Pace, Graciela Bertucelli, Cristian A D'Angelo</i>	
012077 Pencil Lead Scratches on Steel Surfaces as a Substrate for LIBS Analysis of Dissolved Salts in Liquids	570
<i>D Jijón, C Costa</i>	
012078 On the Use of Shockwave Models in Laser Produced Plasma Expansion	579
<i>E De Posada, M A Arronte, L Ponce, E Rodríguez, T Flores, J G Lunney</i>	
012079 Self-absorption Influence on the Optical Spectroscopy of Zinc Oxide Laser Produced Plasma	592
<i>E De Posada, J G Lunney, M A Arronte, L Ponce, E Rodríguez, T Flores</i>	
012080 Enhancement of the Stimulated Raman Scattering of Benzene, Acetonitrile and Pyridine	602
<i>L Muñoz, W A Contreras, R Cabanzo, O Aya-Ramírez, E Mejía-Ospino</i>	
012081 Analysis Si/Al Ratio in Zeolites Type FAU by Laser Induced Breakdown Spectroscopy (LIBS)	606
<i>W A Contreras, R Cabanzo, E Mejía-Ospino</i>	
012082 New Proposal to Measure NO₂ Formation Rate from NO Emissions in the Atmosphere	611
<i>Erna Frins, Matías Osorio, Nicolás Casaballe, Thomas Wagner, Ulrich Platt</i>	

012083 Ground Based Measurements of SO₂ and NO₂ Emissions from the Oil Refinery "la Teja" in Montevideo City	616
<i>Erna Frins, Ossama Ibrahim, Nicolás Casaballe, Matías Osorio, Federico Arismendi, Thomas Wagner, Ulrich Platt</i>	
012084 Multiwavelength Lidar Node Development and Simulation for a Regional Tropospheric Aerosol Monitoring Network	624
<i>E E Pawelko, P R Ristori, L A Otero, J V Pallotta, E J Quel</i>	
012085 Time Resolving Imaging Spectroscopy Applied to the Analysis of Plasmas Generated by Pulsed Lasers	635
<i>F C Alvira, L Ponce, M Arronte, G M Bilmes</i>	
012086 Photoacoustic Spectroscopy of CO₂ Laser in the Detection of Gaseous Molecules	642
<i>G R Lima, M S Sthel, M G Da Silva, D U S Schramm, M P P De Castro, H Vargas</i>	
012087 Measurements of Two-photon Absorption Cross-section of Xe for Laser Spectroscopic Techniques Calibration	650
<i>C Pérez, M I De La Rosa, K Grützmacher, L M Fuentes</i>	
012088 Development of Pulsed UV Lasers and Their Application in Laser Spectroscopy	654
<i>M I De La Rosa, C Pérez, K Grützmacher, D García, A Bustillo</i>	
012089 Soliton Filtering from a Supercontinuum: A Tunable Femtosecond Pulse Source	658
<i>Jacob Licea-Rodríguez, Karina Garay-Palmett, Raúl Rangel-Rojo</i>	
012090 Development of a DOAS System for ToTAL-DOAS Applications with Temperature Control	668
<i>Javier A Ramos, Erna Frins</i>	
012091 Optimization of the Infrared Multiple-photon Dissociation of SiF₄ to Increase the Isotopic Selectivity	674
<i>A N Alcaraz, J Codnia, M L Azcárate</i>	
012092 Biomass Burning Aerosol Detection Over Buenos Aires City, August 2009	683
<i>L A Otero, P R Ristori, E E Pawelko, J V Pallotta, R L D'Elia, E J Quel</i>	
012093 Portable LIBS System for Determining the Composition of Multilayer Structures on Objects of Cultural Value	693
<i>Lesther Moreira Osorio, Luis V Ponce Cabrera, Miguel A Arronte García, Teresa Flores Reyes, Ivette Ravelo</i>	
012094 Remote Sensing of Stratospheric O₃ and NO₂ Using a Portable and Compact DOAS Spectrometer	699
<i>M M Raponi, R Jiménez, E Wolfram, J O Tocho, E J Quel</i>	
012095 Luminescence Features from Conical Bubble Collapse in 1,2 Propanediol and Its Perturbation Adding Sulfuric Acid	707
<i>M Navarrete, C Sánchez, F A Godínez, E V Mejía, M Villagrán</i>	
012096 Analysis of the Absorption Coefficient by Annealing in Carbon Implanted Nd: YV04	725
<i>M E Sánchez-Morales, G V Vázquez, G Lifante, E Cantelar, J Rickards, R Trejo-Luna</i>	
012097 Implementation of Laser Induced Fluorescence Technique to Study the Kinetics of Radicals Generated in the IR Multiphoton Dissociation of Chloroform	731
<i>N D Gómez, V M Freytes, J Codnia, F A Manzano, M L Azcárate</i>	
012098 FTIR Characterization of Mexican Honey and Its Adulteration with Sugar Syrups by Using Chemometric Methods	739
<i>M A Rios-Corripio, E Rios-Leal, M Rojas-López, R Delgado-Macuil</i>	
012099 Synthesis of Vitamin D and Erythral Irradiance Obtained with a Multiband Filter Radiometer and Annual Variation Analysis in Río Gallegos, Argentina	744
<i>P F Orte, E A Wolfram, J Salvador, R D'Elia, N Paes Leme, E J Quel</i>	
012100 Time Dependent Density Functional Study of the Absorption Spectra of 1,3-benzoxazole and Three Substituted Benzoxazole in Gas Phase and Liquid Phase	752
<i>Rafael J Carrasquilla, Oscar L Neira</i>	

OPTICAL SYSTEMS, INSTRUMENTS AND OPTICAL DESIGN

012101 Comparison Between Liquid and Solid Tunable Focus Lenses	764
<i>A Santiago-Alvarado, S Vazquez-Montiel, J Munoz-López, V M Cruz-Martínez, G Díaz-González, M Campos-García</i>	
012102 Characterization and Control of a Microdisplay as a Spatial Light Modulator	774
<i>A Burman, M T Garea, A Lutenberg, F Perez Quintián</i>	
012103 Leds Used As Spectral Selective Light Detectors in Remote Sensing Techniques	783
<i>C Weber, J O Tocho, E J Rodríguez, H A Acciaresi</i>	
012104 Building a Parabolic Solar Concentrator Prototype	789
<i>J F M Escobar-Romero, S Vázquez Y Montiel, F Granados-Agustín, V M Cruz-Martínez, E Rodríguez-Rivera, L Martínez-Yáñez</i>	

012105 Design of a Test Bench for Intraocular Lens Optical Characterization	795
<i>Francisco Alba-Bueno, Fidel Vega, María S Millán</i>	
012106 Design, Calibration and Assembly of an Offner Imaging Spectrometer	802
<i>Héctor González-Núñez, Carmen Vázquez-Vázquez, Elena López Lago, M Dolores Mouriz, Carlos Montero-Orille, Xesús Prieto-Blanco, Raúl De La Fuente</i>	
012107 An Alternative Method for Calibration of Narrow Band Radiometer Using a Radiative Transfer Model	809
<i>J Salvador, E Wolfram, R D'Elia, F Zamorano, C Casiccia, A Rosales, E Quel</i>	
012108 Designing Fresnel Microlenses for Focusing Astigmatic Multi-Gaussian Beams by Using Fractional Order Fourier Transforms	816
<i>A Patiño, P-E Durand, É Fogret, P Pellat-Finet</i>	
012109 Corneal Aberrations in Keratoconic Eyes: Influence of Pupil Size and Centering	829
<i>S A Comastri, L I Perez, G D Pérez, G Martin, A Bianchetti</i>	
012110 Design and Implementation of a Data Acquisition System for the Study of Dynamics Signals in the Time Domain	838
<i>Arnoldo Daza, Ana Hinojosa, Xavier Díaz, Oscar Neira</i>	
012111 Aberration Compensation Using a Spatial Light Modulator LCD	844
<i>R Amézquita, O Rincón, Y M Torres</i>	

OPTICAL THIN FILMS

012112 Design and Fabrication of a Bidimensional Microbolometer Array for Terahertz Detection Characterized at Different Temperatures	848
<i>A Orduña-Díaz, E Castillo-Domínguez, A Torres-Jacome, F J De La Hidalga-Wade, C G Treviño-Palacios</i>	
012113 Determination of the Optical Bandgap and Disorder Energies of Thin Amorphous SiC and AlN Films Produced by Radio Frequency Magnetron Sputtering	853
<i>J A Guerra, L Montañez, O Erlenbach, G Galvez, F De Zela, A Winnacker, R Weingärtner</i>	
012114 Modeling and Calculation of Light Absorption in Silicon/Metal Nanocomposites	860
<i>Luis Andrés Santacruz, Efraín Solarte, Hernando Garcia</i>	
012115 Quantum Dots Obtained by LPE from Under-saturated In-As Liquid Phases on GaAs Substrates	866
<i>F E Ortiz, V Mishurnyi, A Gorbachev, F De Anda, T Prutskij</i>	
012116 Emission Pattern of an Aluminium Nitride Target for Radio Frequency Magnetron Sputtering	870
<i>G Gálvez De La Puente, S Zitzlsberger, J A Guerra Torres, O Erlenbach, R Weingärtner, F De Zela, A Winnacker</i>	
012117 Using Photosensitive Dye To Improve Multi Walled Carbon Nanotubes Dispersion	874
<i>Guadalupe Díaz Costanzo, Silvia Goyanes, Silvia Ledesma</i>	
012118 Fabrication of PDMS/SWCNT Thin Films as Saturable Absorbers	881
<i>I Hernandez-Romano, J Davila-Rodríguez, D A May-Arriola, J J Sanchez-Mondragon, P J Delfyett</i>	
012119 Optical Properties Dependence with Gas Pressure in AlN Films Deposited by Pulsed Laser Ablation	886
<i>J A Pérez, H Riascos, J C Caicedo, G Cabrera, L Yate</i>	
012120 Morphological Study of Palladium Thin Films Deposited by Sputtering	895
<i>K L Salcedo, C A Rodríguez, F A Perez, H Riascos</i>	
012121 Light Emission in Forward and Reverse Bias Operation in OLED with Amorphous Silicon Carbon Nitride Thin Films	901
<i>R Reyes, M Cremona, C A Achete</i>	
012122 Cooperative Emission in Ion Implanted Yb:YAG Waveguides	908
<i>G V Vázquez, H Desirena, E De La Rosa, E Flores-Romero, H Márquez, J Rickards, R Trejo-Luna</i>	
012123 Study of Er³⁺ Fluorescence on Tellurite Glasses Containing Ag Nanoparticles	914
<i>V A G Rivera, D Manzani, Y Messaddeq, L A O Nunes, E Marega Jr</i>	

PHYSICAL OPTICS

012124 Propagation of Gaussian Beams Through Active GRIN Materials	919
<i>A I Gomez-Varela, M T Flores-Arias, C Bao-Varela, X De La Fuente, C Gomez-Reino</i>	
012125 An Assessment of Saunderson Corrections to the Diffuse Reflectance of Paint Films	927
<i>A García-Valenzuela, F L S Cuppo, J A Olivares</i>	
012126 Third Order Effects Generated by Refractive Lenses on Sub 20 Femtosecond Optical Pulses	937
<i>F C Estrada-Silva, M Rosete-Aguilar, J Garduño-Mejía, M A González-Galicia, N C Bruce, R Ortega-Martínez</i>	

012127 Single Reflection Quarter-wave Device Design	946
<i>G Raffa, A Bianchetti, M T Garea, S A Comastri, L I Perez</i>	
012128 Scattering of Particles with Inclusions. Modeling and Inverse Problem Solution in the Rayleigh-Gans Approximation	954
<i>F A Otero, G L Frontini, G E Eliçabe</i>	
012129 Experimental Evidence of an Effective Medium Seen by Diffuse Light in Turbid Colloids	963
<i>H Contreras-Tello, A García-Valenzuela</i>	
012130 The Use of a Conical Lens to Find the Refractive Index of Liquids	970
<i>Marcelino Anguiano-Morales, Didia P Salas Peimbert, Gerardo Trujillo-Schiaffino</i>	
012131 Reflection and Refraction in Active Dielectric Materials	976
<i>María Celeste Duplaá, Liliana I Perez, Claudia L Matteo, María Teresa Garea</i>	
012132 Alternative Coherent-mode Representation of a Random Source	985
<i>A S Ostrovsky, A M Zemliak, M Á Olvera, P C Romero</i>	
012133 Simple Technique for Generating the Partially Coherent and Partially Polarized Electromagnetic Source	992
<i>A S Ostrovsky, G Rodríguez, C Meneses, M Á Olvera, E Juárez</i>	
012134 Implementation and Comparison of Dynamic and Static Light Scattering Techniques for Polidisperse Particle Sizing Using a CCD Camera	999
<i>Natalia C Alvarez, María T Garea, Fernando Perez Quintián</i>	
012135 Design of a Scanning Polarimetric Scatterometer for Rough Surface Scattering Measurements	1007
<i>N C Bruce, Alejandro Dominguez Báez, Tonatiuh Santana Sánchez, Xanat Téllez Díaz, Arturo Nogueira Jiménez, Rigoberto Nava Sandoval</i>	
012136 Double Scatter of Vector Electromagnetic Waves from Rough Metal and Dielectric Surfaces Using the Kirchhoff Approximation	1014
<i>N C Bruce</i>	

QUANTUM OPTICS AND NON-LINEAR OPTICS

012137 Asymptotic Mean Excitation Numbers Due to Anti-rotating Term (AMENDART) in Markovian Circuit QED	1021
<i>A V Dodonov</i>	
012138 Impact of Dyes on the Nonlinear Optical Response of Liquid Crystals Implementing the Z-scan Technique	1030
<i>A A Rodríguez-Rosales, R Ortega-Martínez, O G Morales-Saavedra</i>	
012139 Modification to the Z-scan Technique by Widths Measurements. Journal of Physics: Conference Series	1041
<i>A Balbuena, J A Dávila, E Reynoso</i>	
012140 Measurement of Geometric Phases by Robust Interferometric Methods	1048
<i>J C Loredo, O Ortíz, A Ballón, F De Zela</i>	
012141 Phase-space Representation of Non-classical Behaviour of Scalar Wave-fields	1055
<i>Gustavo Cañas-Cardona, Román Castañeda, Herbert Vinck-Posada</i>	
012142 Even and Odd Combinations of Nonlinear Coherent States	1066
<i>O De Los Santos-Sánchez, J Récamier</i>	
012143 Conditional Control of Quantum Beats in a Cavity QED System	1076
<i>D G Norris, A D Cimmarusti, L A Orozco</i>	
012144 Photorefractive Axicon: Study of Light-induced Effect by Bessel Beam in Photorefractive Crystal	1085
<i>T A Vieira, M R R Gesualdi, M Muramatsu, M Zamboni-Rached</i>	
012145 Enhancement of the Optical Kerr Effect Exhibited by an Integrated Configuration of Silicon Quantum Dots and Silver Nanoparticles	1090
<i>A López-Suárez, R Rangel-Rojo, C Torres-Torres, A Benami, L Tamayo-Rivera, J A Reyes-Esqueda, J C Cheang-Wong, L Rodríguez-Fernández, A Crespo-Sosa, A Oliver</i>	
012146 Teleportation of Displaced Fock States: Fidelity and Their Teleported Photon Number Distributions	1099
<i>William Quintero, Celso L Ladera</i>	
012147 A Key Experiment of Quantum Optics: The Transfer of Spin Angular Momentum from Photons to a Birefringent Particle	1108
<i>E Frins, W Dultz, H Schmitzer</i>	
Author Index	