

# RIAO-OPTILAS 2023 Conference Program



## Conference room 1

	Monday, March 27th		Tuesday, March 28th		Wednesday, March 29th		Thursday, March 30th		Friday, March 31st
Hour	Number	Talk ID number	Number	Talk ID number	Number	Talk ID number	Number	Talk ID number	Poster session
7:00 - 8:00	Registration of participants								
8:00 - 8:30	<b>Opening</b>		13	3265	25	413	35	5739	<b>Poster session 1</b>
8:30 - 8:52	4	7408	14	5501	26	469	36	7117	
8:52 - 9:15	1	3087	15	6805	29	4955	37	7536	
9:15 - 9:37	2	4408	16	7175	24	123	38	8237	
9:37 - 10:00	3	7278	17	7630	28	3190	40	6063	Coffee break
10:00 - 10:15	Coffee break		Coffee break		Coffee break		Coffee break		<b>Poster session 2</b>
10:15 - 11:15	Plenary 1	<b>Katarina Svanberg</b>	Plenary 3	<b>Miguel Andrés</b>	Plenary 5	<b>Amalia Martínez</b>	Plenary 7	<b>Sune Svanberg</b>	
11:15 - 11:37	5	574	18	690	27	1192	41	3134	
11:37 - 12:00	6	6548	19	1089	30	6459	39	8588	
12:00 - 12:20	7	7778	20	3177	31	7552			<b>Closing Ceremony</b>
12:00 - 1:30	Lunch break		Lunch break		Lunch break		Lunch break		
1:30 - 1:51	8	3767	21	3722	32	8271	43	7128	
1:51 - 2:13	9	3874	22	4650	34	9639	45	4969	
2:13 - 2:34	10	9652	23	5409	33	8996	46	1206	
2:34 - 2:55	11	9119	Special Guest	<b>Zeev Zalevsky</b>	Special Guest	<b>Christian Cuadrado</b>	47	3012	
2:55 - 3:15	12	410					44	8837	
3:15 - 3:30	Coffee break		Coffee break		Coffee break		Coffee break		
3:30 - 4:30	Plenary 2	<b>Efraín Solarte</b>	Plenary 4	<b>Humberto Michinel</b>	Plenary 6	<b>Jose Tito Mendonça</b>	Penary 8	<b>Myrian Tebaldi</b>	
4:30 - 6:00			Panel: "Diversidad e inclusión". Directed by Ángeles Camacho		RIAO OPTILAS General Assembly		Panel: "Mujeres en óptica, fotonica y sus aplicaciones". Directed by Paola Vega		



## Conference Room 2

	Monday, March 27th		Tuesday, March 28th		Wednesday, March 29th		Thursday, March 30th		Friday, March 31st
Hour	Number	Talk ID number	Number	Talk ID number	Number	Talk ID number	Number	Talk ID number	Poster session
7:00 - 8:00	Registration of participants								
8:00 - 8:30	<b>Opening</b>		60	6796	71	1126	86	5097	<b>Poster session 1</b>
8:30 - 8:52	48	1221	61	2915	74	8846	87	5735	
8:52 - 9:15	49	1857	62	4810	75	9662	82	345	
9:15 - 9:37	50	2895	63	8870	73	6310	83	1688	
9:37 - 10:00	51	3022	64	8890	72	1667	84	676	Coffee break
10:00 - 10:15	Coffee break		Coffee break		Coffee break		Coffee break		<b>Poster session 2</b>
10:15 - 11:15									
11:15 - 11:37	52	3629	65	2863	76	1543	85	6275	
11:37 - 12:00	54	5345	66	3077	79	4019	88	6707	<b>Closing Ceremony</b>
12:00 - 12:20			67	5271	77	7518	89	5953	
12:00 - 1:30	Lunch break		Lunch break		Lunch break		Lunch break		
1:30 - 1:51	55	9251	Special Guest	<b>Martina Delgado</b>	Special Guest	<b>Miguel Castro</b>	91	2566	
1:51 - 2:13	56	9978					93	5572	
2:13 - 2:34	57	2651	68	8814	78	8402	94	8425	
2:34 - 2:55	58	3001	70	6503	80	6336	90	1856	
2:55 - 3:15	59	7078	69	6625	81	8660			
3:15 - 3:30									

## Plenary Talks

- Katarina Svanberg: Applications of laser spectroscopy to meet some challenges in medicine
- Efraín Solarte: Some applications of optical spectroscopy in the UV-NIR range in science and industry
- Miguel Andrés: In-fiber Acousto-Optics & Optomechanics
- Humberto Michinel: New topological structures in nonlinear optical media
- Amalia Martínez: Optical techniques for three-dimensional scanning of micro and macro objects
- Sune Svanberg: Laser spectroscopy applied to the environmental, ecological, agricultural, and food safety areas
- Jose Tito Mendonça: Bose-Einstein Condensation of Light and Superfluid Phenomena
- Myrian Tebaldi: Information processing by using speckle and optical vortices. Applications

## Special Guests:

- Zeev Zalevsky: Super resolved bio-medical imaging through scattering medium
- Christian Cuadrado : All polarization-maintaining passively modelocked thulium doped fiber lasers
- Miguel Castro Colín : Amorphous CN thin films deposited by laser ablation
- Martina Delgado: Fiber-based biosensors come to light

## Conference Room 1

**Monday, March 27th**

Number	Talk ID number	Topic	Authors	Title
4	7408	Atmospheric and ocean optics	Damian Gulich and <b>Myrian Cristina Tebaldi</b>	Deep learning for the study of the intensity of atmospheric turbulence
1	3087	Atmospheric and ocean optics	<b>Jennifer Torre-Mora</b> , Jimmy Castillo, Génesis González and Francisco Armas	Optical and microscopic study of bio-adsorbent nanoparticles for carbon dioxide (CO <sub>2</sub> ) sequestration.
2	4408	Atmospheric and ocean optics	Johonfri Mendoza, Eder Alfaro, Juan Vildary, Marlon Bastidas and Jose Sierra	Exergetic analysis of a parabolic trough solar collector under the Niño and Niña phenomena as a multipurpose energy source in the Department of La Guajira-Colombia
3	7278	Atmospheric and ocean optics	<b>Agustina Das Neves</b>	Optical and spectroscopy characterization of biogenic SiO <sub>2</sub> @Cu nanocomposites and catalytic activity in Rhodamine B reduction.
5	574	Atomic and molecular physics	Victor Contreras, Yanibia Lizarraga and Mohan Kumar Kesarla	Analysis of water hardness on acoustic levitated droplets by laser induced breakdown spectroscopy
6	6548	Atomic and molecular physics	<b>Carlos Salas</b> , Jimmy Castillo and Gensis Gonzalez	Optical and electronic properties of particles Cu, CuO and nanocomposites of SiO <sub>2</sub> @Cu.
7	7778	Atomic and molecular physics	Jan Hrabina, Simon Rerucha, Martin Hosek, Lenka Pravdova, Ondrej Cip and Josef Lazar	Sub-Doppler spectroscopy of HCN
8	3767	Bio photonics and biomedical applications	Misael Ruiz-Veloz, Gerardo Gutiérrez-Juárez, Luis Polo-Parada, Francisco Cortalezzi, David Kline, Heather A. Dantzer, Lorena Cruz-Alvarez, Rigoberto Castro-Beltrán and Carlos Hidalgo-Valadez	Laser-Induced Ultrasonic Imaging (LIUSI) through Single-Sensor Scanning Synthetic Aperture Focusing Technique
9	3874	Bio photonics and biomedical applications	Nayeli Fernanda Pérez-Pérez, María Guadalupe Delgado-Lopez, Juan Carlos Atenco-Cuautle, Julio Cesar Ramirez-San-Juan and Teresita Spezzia-Mazzocco	Morphological cell changes produced by PDT in the cancer cell line MDA-MB-231
10	9652	Bio photonics and biomedical applications	<b>Juan Pablo Cuanalo Fernández</b> , Svetlana Mansurova, Ruben Ramos García, Nikolai Korneev, María Beatriz De-la-Mora Mojica, Ismael Cosme Bolaños and Irving Gazga Gurrión	Study of gold nano islands-based transducer sensing characteristics: intensity vs phase sensitive scheme
11	9119	Bio photonics and biomedical applications	<b>Kirill Larin</b>	Optics Toolbox for Label-Free Early Embryonic Imaging

12	410	Bio photonics and biomedical applications	<b>José Antonio Cisneros Martínez</b> and Rubén Ramos García	Amplitude and Phase and Recovery with Single-Pixel Holography
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Conference Room 1				
Tuesday, March 28th				
Number	Talk ID number	Topic	Authors	Title
13	3265	Imaging systems	Alessandra Carmichael-Martins, Thomas J. Gast, Brett J. King and Stephen A. Burns	Maximizing Light Efficiency in Confocal and Dark Field Adaptive Optics Line Scanning Ophthalmoscope Imaging
14	5501	Fourier optics and signal processing	Leandro Buffarini, Hector Rabal, Nelly Lucia Cap, Eduardo Grumel, <b>Myrian Tebaldi</b> and Marcelo Trivi	Reading hidden drawing using multi-wavelength speckle images
15	6805	Fourier optics and signal processing	<b>Alejandro Velez</b> and John Fredy Barrera-Ramírez	Color augmented reality multilayer holographic display
16	7175	Fourier optics and signal processing	Astrid Lorena Villamizar Amado, <b>Alejandro Velez</b> Zea and Myrian Cristina Tebaldi	Object tracking from speckle fields using optical vortices and optical flow demon algorithm
17	7630	Fourier optics and signal processing	Juan Manuel Vilardy Ortiz, <b>María Sagrario Millán García-Varela</b> , Elisabet Perez-Cabre, Ronal Antonio Pérez Jiménez and Cesar Torres	Color image encryption system using a nonlinear fractional joint transform correlator
18	690	Instrumentation, measurement, and metrology	<b>Abrahan Alfaro Alvarado</b>	Implementation of a primary measurement method for the calibration of a high resolution ultraviolet-visible (UV/Vis) spectrophotometer for the establishment of a national standard in the wavelength scale at the Costa Rican Metrology Laboratory
19	1089	Instrumentation, measurement, and metrology	Orlando Medina-Cázares, Francisco Cortalezzi, Misael Ruiz-Veloz, Jonathan Álvarez-Martínez, Luis Polo-Parada, Rigoberto Castro-Beltrán, Arturo González-Vega and Gerardo Gutiérrez-Juárez	Fabrication and characterization of a needle hydrophone for photoacoustic imaging
20	3177	Instrumentation, measurement, and metrology	<b>Manuel Melgosa</b> , Francisco Jose Rodriguez-Pulido, Luis Gomez-Robledo and Francisco José Heredia	Instrumental color measurements of automotive samples with convex cylindrical curvatures under diffuse lighting
21	3722	Instrumentation, measurement, and metrology	<b>Telmo Echaniz</b> , Iñigo González de Arrieta, Mireia Sainz-Menchón, Jon Gabirondo-López, Raquel Fuente and Gabriel Alejandro López	Emissivity and Reflectivity Measurements of Materials for Solar Applications

22	4650	Instrumentation, measurement, and metrology	<b>Maria Nieto</b> and Pedro Torres	Packaging and testing of fiber Bragg gratings for Geotechnical inclinometer
23	5409	Instrumentation, measurement, and metrology	<b>Franco Gonzales</b> and Josep Arasa	Measure of convex reflective surfaces using Ronchi deflectometry

Conference Room 1				
Wednesday, March 29 <sup>th</sup>				
Number	Talk ID number	Topic	Authors	Title
25	413	Fiber optics, sensors and optical communications	<b>Brenda Vertti-Cervantes</b> , Raúl Delgado-Macuil, Georgina Beltrán-Pérez, Marcos García-Juárez, Omar Montes-Narváez, Valentín López-Gayou and Karina González-León	Long Period Fiber Grating biosensor to Interleukine 6 determination
26	469	Fiber optics, sensors and optical communications	Jose Roberto Santamaria Sandoval, Esteban Chanto Sanchez and <b>Alfredo Solano Alfaro</b>	Fiber optic characterization with EMONA TIMS platform: Telecommunication Engineering experience, UNED, Costa Rica
29	4955	Fiber optics, sensors and optical communications	<b>Karina González León</b> , Raúl Delgado Macuil, Marcos García Juárez, Omar Montes Narvaez and Georgina Beltrán Pérez	Development of long-period grating biosensors for detection of IL-10 in blood plasma of murine model with cerebral ischemia
24	123	Fiber optics, sensors and optical communications	Esteban Gonzalez-Valencia, Erick Reyes-Vera and Pedro Torres	Bloch surface wave excitation in photonic crystal fiber for biosensing applications
28	3190	Fiber optics, sensors and optical communications	Georgina Beltrán Pérez, J.L. Rodríguez-Garcíapiña, Juan Castillo-Mixcóatl and Severino Muñoz-Aguirre	Optical fiber sensor for acetone detection
27	1192	Fiber optics, sensors and optical communications	Marco A. Contreras-Teran, Juan M. Sierra-Hernandez, Daniel Jauregui-Vazquez, Julian M. Estudillo-Ayala and Roberto Rojas-Laguna	Strain Sensing Setup Based on Core-Offset Mach-Zehnder Interferometer with Single Mode Fiber
30	6459	Fiber optics, sensors and	Jorge Torres Arboleda, Jose Pamplona, Nelson Correa-Rojas, Juan Carrasquilla and Jorge Herrera-Ramirez	Evaluation of optimization algorithms for phase mask generation in modal division multiplexing

		optical communications		
31	7552	Fiber optics, sensors and optical communications	Julian Moises Estudillo-Ayala	Tunable laser based on a Sagnac loop tapered fiber coupler filter
32	8271	Fiber optics, sensors and optical communications	Silvia Ortin, Miguel C. Soriano, Apostolos Argyris and <b>Claudio Mirasso</b>	Study and implementation of optical dendritic units
34	9639	Fiber optics, sensors and optical communications	Heberley Tobon Maya, <b>Samuel Ignacio Zapata-Valencia</b> , Carlos Buitrago-Duque, Alejandra Gomez-Ramirez and Jorge Garcia-Sucerquia	3D printable open-source hardware for conical-shaped optical fiber tip fabrication.
33	8996	Bio photonics and biomedical applications	Christopher Espinoza-Araya, Jose Daniel Zelada-Ramírez, Dariana Aguilar, Alexandra Tames, Jesse Bergkamp, Ernesto Montero-Zeledón, Venkatesan Renugopalakrishnan, Barry D. Bruce, <b>Claudia C. Villarreal</b>	Improving the photoelectron transfer from photosynthetic proteins into TiO <sub>2</sub> electrodes for biosensitized solar cell application

## Conference Room 1

Thursday, March 30<sup>th</sup>

Number	Talk ID number	Topic	Authors	Title
35	5739	Instrumentation, measurement, and metrology	<b>Omar Ormachea</b> , Ramiro Escalera and Alex Villazón	A Smartphone-based Low-Cost Laser Fluorimeter for Arsenic Quantification in Water Solutions
36	7117	Instrumentation, measurement, and metrology	<b>Jesús Muñoz-Maciel</b> , Víctor M. Duran-Rámirez, Francisco G. Peña-Lecona, Miguel Mora-González and Francisco J. Casillas-Rodriguez	Iterative phase unwrapping by a fringe reduction method
37	7536	Instrumentation, measurement, and metrology	Ruth Dary Mojica Sepulveda, Luis Joaquin Mendoza Herrera, Mercedes Muñoz, Carmen Cabello, Guillermo Bertolini, Eduardo Grumel, <b>Myrian Tebaldi</b> and Marcelo Trivi	Hygroscopic properties of the mixture of porous and non-porous materials by using speckle techniques
38	8237	Instrumentation, measurement, and metrology	<b>Guillermo Baldwin</b> , Franco Gonzales and Alejandro Montoya	First Peruvian binoculars: Improvements.
40	6063	Bio photonics and biomedical applications	<b>Omar Ormachea</b> , Alex Villazón and Mirko Zimic	3D printed low-cost inverted laser fluorescence microscope for tuberculosis diagnosis

41	3143		<b>Luis Felipe Devia-Cruz</b> , Santiago Camacho-López, <b>Guillermo Aguilar</b> and Juan Carlos Gonzalez-Parra	MITIGATION OF CAVITATION EROSION IN NANO-STRUCTURED BRONZE TROUGH LASER-INDUCED PERIODIC SURFACE STRUCTURES (LIPSS)
39	8588	Instrumentation, measurement, and metrology	Melissa Rojas-Romero, Orlando Medina-Cázares, Francisco Javier García-Rodríguez, Rigoberto Castro-Beltrán, Misael Ruiz-Veloz and Gerardo Gutiérrez-Juárez	A 1D model for detecting an internal defect in metals using the laser-induced ultrasound technique
43	7128	Bio photonics and biomedical applications	Lorena María Durán-Riveroll, Mariela Flores-Castañeda, Luis Felipe Devia-Cruz, Victor Alfonso Cervantes-Urieta, Viviana Camacho-Bernal, Ana Vanessa González-Campista, Carlos Iván Escutia-Burgos, Eduardo Gauna-Gutiérrez and <b>Santiago Camacho-Lopez</b>	Nanoparticle-assisted photosynthesis stimulation in dinoflagellates
45	4969	Bio photonics and biomedical applications	Karina Acevedo-Díaz, Andrea Romo-Castañeda, Lidia Verduzco-Grajeda and Mariana Alfaro	Optical and chemical characterization of melanin supported by alginate biofilms
46	1206	Bio photonics and biomedical applications	<b>Luis Miguel Gomez</b> , José Fernando Pamplona, Mauricio Arias-Correa, Adriana Pabon, Carlos Trujillo, Jorge Herrera-Ramirez and Jorge Garcia-Sucerquia	Classification of malaria parasitemia levels using digital lensless in-line holographic microscopy and machine learning
47	3012	Bio photonics and biomedical applications	Juan Serna, Sergio Pardo, Raul Valencia and Yulieth Montoya	Dependence of temperature rise as function of synthesis process in Au nanorod for plasmon resonance photothermal therapy
44	8837	Bio photonics and biomedical applications	Lenin Alberto Nuñez Reales, Juan Manuel Vilardy Ortiz, Fabio Vega, Eberto Benjumea and Cesar Torres	Optoelectronic system based on the dynamic speckle for percentage estimate of the coffee seeds germination using digital image processing and machine learning



## Conference Room 2

**Monday, March 27th**

Number	Talk number	Topic	Authors	Title
48	1221	Diffraction and gratings	Carlos Jimenez, Juan Manuel Vilardy Ortiz and Eder Alfaro	Two color fractional Fourier interferometer
49	1857	Diffraction and gratings	<b>Sergio Reyes Barragán</b> , Ulises Ruíz Corona and María Concepción Alonso Casemiro	Analysis and generation of discrete Montgomery rings with polarization.
50	2895	Diffraction and gratings	<b>Luis Poveda-Wong</b> , Jiaxing Sun and Xianfeng Chen	High-order mode coupling by cascaded long- and short-period gratings for enhanced physical magnitude sensing
51	3022	Diffraction and gratings	Ricardo I. Alvarez-Tamayo, Alejandro J. Bravo-Parra, Patricia Prieto-Cortés and <b>Antonio Barcelata-Pinzón</b>	Design and implementation of an electromechanical system for optimization of the phase extraction from a double-aperture common path interferometer
52	3629	Diffraction and gratings	Pedro Moreno Acosta, Carmelo Rosales Guzman and Ruben Ramos Garcia	Generation of vector modes using a single digital micro mirror device.
54	5345	Diffraction and gratings	<b>Omar Ormachea</b> , Alex Villazón, Adriana Orellana and Ángel Zenteno	A low-cost 3D-printed spectrometer based on Raspberry Pi
55	9251	Diffraction and gratings	Sebastian Valencia Garzón, Erick Reyes Vera, José Pablo Montoya Velez, Nelson Gomez Cardona and Jorge Galvis Arroyave	Metrological characterization of a CO2 laser-based system for inscribing long-period gratings in optical fibers
56	9978	Diffraction and gratings	Walter Furlan, Anabel Martínez-Espert, Vicente Ferrando, Diego Montagud-Martínez and Juan A. Monsoriu	Numerical simulation of a new trifocal intraocular lens based on fractal profile in a model eye
57	2651	Diffraction and gratings	Tomás Lloret, Marta Morales-Vidal, José Carlos García-Vázquez, Belén Nieto-Rodríguez, Manuel G. Ramírez, Víctor Navarro-Fuster and Inmaculada Pascual	Shack-Hartmann wavefront sensor applications in holographic imaging systems
58	3001	Optoelectronics, Detectors and Sources	Armando Rojas, Alicia Vera, Dainet Berman, Roberto Gómez, Antonio Ramos and Ana Lilia Leal	Estudio de corriente en oscuridad en detectores de altas energías
59	7078	Other	Elias David Vides Ortiz, Marcela Osorio, Eder Alfaro and Juan Vilardy	Steam kitchen based on a parabolic trough collector in the department of La Guajira-Colombia

## Conference Room 2

**Tuesday, March 28<sup>th</sup>**

Number	Talk number	Topic	Authors	Title
60	6796	Geometric optics	Johnny Ochoa, <b>Franco Gonzales</b> and Guillermo Baldwin	Parabolization of reflecting optical surfaces using petal tools
61	2915	Integrated optics	<b>Thalía Domínguez Bucio</b> , Ilias Skandalos, Stefan Ilie, Joaquin Faneca, Teerapat Rutirawut, Lorenzo Mastronardi and Frederic Gardes	Silicon Nitride Integration for CMOS Photonics
62	4810	Laser and laser optics	<b>Hector Mauricio Reynoso de la Cruz</b> , Ignacio Rosas Román, Gerardo Gutiérrez Juárez, Gabriel Ramos Ortiz, Bernardo Mendoza Santoyo, Erato Ortiz Ricardo and Rigoberto Castro Beltrán	Study of transition between Amplified Spontaneous Emission and Lasing in Rhodamine-B doped micro-cylinders.
63	8870	Laser and laser optics	Felipe Reyes Osorio and Karen Rodriguez	Quadrupole-spin-charge separation and magnetic phases of a 1D interacting spin-1 gas
64	8890	Laser and laser optics	Juan David Lopez Vargas, Johan Sebastian Duque Buitrago and <b>Henry Riascos Landazuri</b>	Optical properties of TiFe <sub>2</sub> O <sub>4</sub> nanoparticles prepared by pulsed laser ablation in liquid ambient and its application in mercury removal
65	2863	Image processing	Enrique González-Amador, Justo Arines, Maximino Abrales and <b>Eva Acosta</b>	Detection of retinal features and pathologies by processing eye fundus images in different color spaces
66	3077	Image processing	Enrique González Amador, Eva Acosta and <b>Justo Arines</b>	Jacobi Fourier Polynomials: designing ophthalmic solutions.
67	5271	Image processing	Elizabeth Espitia-Romero, Misael Ruiz-Veloz, Francisco Javier García-Rodríguez, Luis Polo-Parada, Rigoberto Castro-Beltrán, Micael Gerardo Bravo-Sánchez and Gerardo Gutiérrez-Juárez	Measurement and PA imaging reconstruction technique to study the PA imaging capabilities.
68	8814	Nano photonics and metamaterials	<b>Sindi Horta</b> , Manuel Cortez, <b>Duber Avila</b> , Mario Flores and Cesar Torres	Green synthesis of gold nanoparticles: CMC stabilization analysis
70	6503	Nonlinear optics	<b>José Luis Paz</b> , Marcos Loroño, Ysaías Alvarado, Lenin González-Paz, José Mora and Edgar Márquez	Un modelo cinético para la dinámica de equilibrio de los procesos de absorción y dispersión en la espectroscopia de mezcla de cuatro ondas
69	6625	Nonlinear optics	Violeta Alvarez-Venicio, Rigoberto Castro Beltran, Gabriel Ramos-Ortiz, Mario Rodríguez, Jorge Enrique Alba-Rosales, Gerardo Gutiérrez-Juárez, Rosa Santillán, Maria Eugenia Ochoa, Lerida Liss Flores-Villavicencio and Myrna Sabanero-López	Organic Nanoparticles loaded with a benzothiadiazole derivative and different bio-functionalized end entities for bio-imaging applications

## Conference Room 2

**Wednesday, March 29<sup>th</sup>**

Number	Talk number	Topic	Authors	Title
71	1126	Optical devices	<b>Alvaro Guerra-Him</b> , Yaily Fernández-Arteaga, Maiby Valle, Uriel Sierra, Salvador Fernández, Bernardo Antonio Frontana-Uribe and José-Luis Maldonado	AN ALTERNATIVE GRAPHENE-BASED ELECTRODE FOR USE IN SOLAR DEVICES.
74	8846	Optical devices	<b>Felipe Guzman</b>	Precision laser interferometry for inertial sensing
75	9662	Optical devices	Erick Reyes Vera, <b>Tatiana Muñoz-Hernandez</b> , Esteban Gonzalez Valencia and Pedro Torres Trujillo	Whispering gallery mode microcavity based on photonic crystal fiber with internal electrodes: a novel platform for temperature sensing
73	6310	Bio photonics and biomedical applications	Rosalba Hernández-Delossantos, José Alejandro Hernández-Benítez, Samara Palacios-Barreto, Aída Verónica Rodríguez-Tovar, Blanca Estela García-Pérez and <b>Carlos Torres-Torres</b>	Light-induced damage to discrete random biological cells with backscattering
72	1667	Optical devices	Eder Alfaro, Juan Vilardy, Johonfri Mendoza, Marlon Bastidas and Carlos Jimenez	Electric power generation from solar irradiation by using a Fresnel lens and a thermoelectric generator
76	1543	Materials Processing with Lasers	<b>Paulina Segovia Olvera</b> , Abigail Fraijo Rodas and Santiago Camacho Lopez	Polarization effect on the fs-laser induced periodic surface structures formation on bismuth (Bi) film.
79	4019	Vision, color, and visual optics	<b>Francisco Javier Gantes Nuñez</b> , Matt Jaskulski, Norberto López Gil and Pete Kollbaum	Optical properties of novel myopia control spectacle lenses with multiple non-coaxial lenslet designs
77	7518	Materials Processing with Lasers	<b>Joaquin Ascencio</b> , Svetlana Mansurova and Rubén Ramos	Formation of micro-holes and manipulation of microbubbles with a CW low power laser on Ti nanofilms
78	8402	Medical optics and biotechnology	Juan Antonio Azor, Jesús Armengol, Fidel Vega and <b>María S. Millan</b>	Image degradation due to astigmatism in model eyes with a monofocal intraocular lens
80	6336	Vision, color, and visual optics	Alejandro Fernández-Rodríguez, Ana Gómez Varela, Nery García-Porta and <b>Justo Arines</b>	Elastomeric lenses for presbyopia and temporary correction of refractive errors for near vision tasks
81	8660	Vision, color, and visual optics	<b>Justo Arines</b> , José Luís Miranda-Santalla and Martina Rodríguez-López	Teaching methodologies of the subjective refraction process

## Conference Room 2

Thursday, March 30<sup>th</sup>

Number	Talk number	Topic	Authors	Title
86	5097	Spectroscopy	<b>Iñigo González de Arrieta</b> , Leire del Campo, Aurélien Canizarès, Cédric Blanchard and Olivier Rozenbaum	Far-infrared spectroscopy of oxide nanoparticles: CeO <sub>2</sub> and Al <sub>2</sub> O <sub>3</sub>
87	5735	Remote sensing and sensors	<b>Heileen Aguilar-Arias</b> and Cornelia Miller-Granados	Geospatial tools for decisions making: MOCUPP success story.
82	345	Physical optics	Patricia Martinez Vara, Elizabeth Saldivia Gomez and Gabriel Martinez Niconoff	PHYSICAL PROPERTIES OF THE 3D-GENERALIZED YOUNG INTERFEROMETER
83	1688	Physical optics	Marcela Osorio, Elias Vides, Eder Alfaro and Juan Vilardy	Description and analysis of an energy storage system based on a solar collector and a molten-salt tank for domestic use in the department of La Guajira-Colombia
84	676	Quantum optics	Freiman Triana-Arango, Gabriel Ramos-Ortiz and Roberto Ramírez-Alarcón	Assessment of entangled two-photon absorption through Hong-Ou-Mandel interference experiments: spectral considerations
85	6275	Quantum optics	John Alejandro Montilla Ortega, Felipe Reyes Osorio, Jalil Varela Manjarres and Karem Rodríguez Ramírez	Use of Schwinger bosons to represent a one-dimensional lattice system of spin-1 bosons
88	6707	Thin films	Luis Joaquin Mendoza Herrera, <b>Myrian Cristina Tebaldi</b> , Daniel Schinca and Lucia Scaffardi	Nanoscale thickness-dependent dielectric function for Au thin films
89	5953	THz, microwaves and millimeter-waves photonics	Jorge Mario Escobar, Brayán Fernando Díaz and Jesús María Calero	Study of the optical response of annular photonic crystals with two high-temperature superconductors and a dielectric
91	2566	Imaging systems	Heberley Tobon Maya, Samuel Ignacio Zapata-Valencia, Carlos A. Buitrago-Duque and Jorge Garcia-Sucerquia	Cost-effective, DIY and open-source digital lensless holographic microscopy with astigmatism correction and aberration reduction
93	5572	Imaging systems	Arturo Navarro Saucedo, Daniel Malacara Doblado, Daniel Malacara Hernández, Zacarías Malacara Hernández, Diego Torres Armenta, Ricardo Valdivia Hernández, Francisco Navarro Mendoza, Julián Navarro Saucedo and Juan Pablo Ramírez López	Wide-field fundus camera based on smartphone macro camera
94	8425	Imaging systems	Samuel I. Zapata-Valencia, Heberley Tobon Maya and Jorge Garcia-Sucerquia	Recovery of occluded objects in digital lensless holographic microscopy
90	1856	Optics at surfaces	<b>Fabian Camilo Cubillos Morales</b> , Gabriel Constantino Martínez Niconoff and Ilse Ivone Cazares Aguilar	Structured surface plasmon generated with interfered evanescent waves

## Poster session 1

Number	Poster ID Number	Authors	Title
1	103	Cipriano Guzmán-Cano, Sigifredo Marrujo-García, <b>Iván Hernández-Romano</b> , Daniel López-Cortés, Daniel A. May-Arrijoja, Miguel Torres-Cisneros, David Monzón-Hernández and Joel Villatoro	Temperature detection based on two parallel Mach-Zehnder interferometers using Optical Harmonic Vernier Effect
2	373	Bryan Louis Medina, Julio Cesar Martinez-Romo, Francisco Javier Luna-Rosas, David Asael Gutierrez-Hernandez and <b>Miguel Mora-Gonzalez</b>	Gray and white matter recognition in brain image segmentation using multilayer perceptron and superpixels
3	582	<b>Danielle Viviana Ochoa Arbeláez</b> , <b>Efraín Solarte Rodríguez</b> and Jose Oscar Gutiérrez Montes	Effects of optical irradiation with laser and LED light sources on cell cultures of leukemia
4	585	<b>Luis Espejo</b> , Sindi Horta and Duber Avila	Surface plasmon resonance in optical fibers for temperature measurement
5	762	<b>Alelhi del Carmen De Jesús-Hernández</b> , Raúl Jacobo Delgado-Macuil, Genaro Gustavo Amador-Espejo and Héctor Ruiz-Espinosa	Identification of trans molecules in canola (Brassica napus L.) seed oil by FTIR spectroscopy
6	960	Juan Carlos Bravo, <b>Cristian Neipp</b> , Joan Sivent, Jaume Colomina, Andrés Márquez, Jorge Francés, Sergi Gallego and Augusto Beléndez	Noise gratings in holographic waveguides recorded in photopolymers
7	1051	Mary Carmen Peña Gomar, Josue Cohenete, Jesus Rangel-Cárdenas, Dagoberto Cardona-Ramírez, Cipriano Guzman and Miguel Torres Cisneros	Experimental and Numerical Analysis of Roughness Variations in a Nanoparticle Film Surface Plasmon
8	1227	<b>Francis Segovia</b> , Herbert Vinck Posada and Erik Navarro Barón	Local density of states in a one-dimensional photonic crystal defective
9	1445	<b>Antonio Barcelata-Pinzon</b> , Rafael Limón-Bonilla, Patricia Prieto-Cortés, Ricardo Iván Álvarez-Tamayo, Uriel Rivera-Ortega, Marcos Espinosa-Martínez, Javier Andrey Moreno-Guzmán, Carlos Rangel-Romero and Griselda Saldaña-González	Automatic experimental optimization of capture of interference patterns of a DACPI to reduce negative effects of mechanical vibrations
10	1506	Chae Rin Yu, Jun Hee Jo and <b>Won Seok Chang</b>	Ultrafast laser induced liquid-metal repellent surface on flexible substrate
11	1719	Laura Clavé, Aurora Torrents and <b>Maria S Millan</b>	Visual acuity at varying distance compared to a defocus curve
12	1854	<b>Carlos Andrés Jaramillo Bedoya</b> , Omar Calderón-Losada and John Henry Reina	Photo-physical properties of individual organic molecules composed by a polymer conjugate with potential application in quantum technologies
13	2233	<b>Manuel F. M. Costa</b>	Microtopographic Inspection of Asphalt by Optical Triangulation
14	2351	<b>Maria Quesada-Mena</b> and <b>Ever Ortega-Calderón</b>	Forest densimeters with concave and flat mirrors: estimation of covered canopy area and suggested practices for their use
15	2718	<b>Juan Jose Nava Soto</b> and <b>Norberto Arzate-Plata</b>	First principles calculations of optical properties and electronic structure of blue phosphorene

16	3139	Víctor Manuel Durán-Ramírez, Jesús Muñoz-Maciel and Gerardo Peña Lecona	Focal lengths of a plan-concave thick lens
17	4104	Walter D. Furlan, Adrian Garmendía, Vicente Ferrando and Juan A. Monsoriu	Tetrafocal zone plate based on the silver mean sequence
18	3382	Francisco A. Zaragoza-Hernández, Alejandro E. Rodríguez-Sánchez, Daniel May-Arrijoa, Mary Carmen Peña Gomar, Iván Hernández-Romano, Cipriano Guzman and Miguel Torres Cisneros	Automatic Classification of Defective Welding in Automotive Parts using a Machine Learning approach
19	3671	Osmar Gil Salas, <b>Luis Alfonso Guerra Hernández</b> , Andrés Alejandro Reynoso and Jorge Enrique Rueda Parada	Resonance of localised surface plasmons in Au-film systems over nanospheres
20	4058	Juan Carlos Atenco Cuautle, Patricia Martinez Vara and Gabriel Martinez-Niconoff	Analysis of optical waves propagating in 2D close paths
21	4268	David Iván Loaiza Toscuento, <b>Julio Cesar Ramirez San Juan</b> , Teresita Spezzia Mazzocco, Jose Angel Arias Cruz, Hayde Peregrina Barreto and Ruben Ramos Garcia	Dynamic Speckle simulation to study microorganisms samples
22	4423	Mariana Lopera-Obando, <b>Erick Reyes-Vera</b> , Pedro Torres and Esteban Gonzalez-Valencia	Comparison of the performance of lossy mode resonance and surface plasmon polariton in planar waveguide for biosensing
23	4928	Natalia Ramirez, Miquel Ralló and Maria S Millan	Centring a retinography in the macula or in the optic disc may alter the distance factor (DF) tortuosity index
24	4987	José Daniel Ramírez Zelada, Cristopher Espinoza Araya, <b>Daniela Zúñiga Rivera</b> , Ernesto Montero Zeledón, Barry Bruce and Claudia Villarreal	Incorporación de CNT y nanopartículas en nanobarras de TiO2 para celdas solares sensibilizadas con la proteína fotosistema I
25	5167	<b>Luis Alfredo Carrillo-Aguilar, Esperanza Guerra-Rosas and Josue Alvarez-Borrego</b>	Identification of shark species based on their dried dorsal fins through image processing
26	5175	Luis A. Herrera-Piad, Sigifredo Marrujo-García, Iván Hernández-Romano, Daniel A. May-Arrijoa, Vladimir P. Minkovich, Miguel Torres-Cisneros and Miguel C. Guzmán-Cano	Dual-wavelength erbium-doped fiber ring laser using two MZIs
27	5185	Daniel Malacara-Doblado, <b>Francisco Javier Gantes-Nuñez</b> and Daniel Malacara-Hernández	Some concepts in a Gram-Schmidt Orthogonalization to Generate a Set of Orthogonal Polynomials in a Discrete Base
28	5236	<b>Isabella Aguilera Cuenca*</b> , <b>Efraín Solarte Rodríguez</b> , Danielle Viviana Ochoa Arbeláez and José Óscar Gutierrez Montes	Spectroscopy characterization of white blood cells
29	5742	Jose Luis Cruz, Juan A. Suica Huilca, Laureano A. Bulus Rossini, Juan Longhino, Leonardo Morbidel, <b>Miguel V. Andrés</b> and Pablo A. Constanzo Caso	Thermal monitorization in a nuclear reactor by fiber gratings.
30	1604	William Lasso, Juan Manuel Vilardy Ortiz and Cesar Torres	Cryptosystem for secure image encryption based on the Gabor transform

## Poster session 2

Number	Poster ID Number	Authors	Title
1	5874	<b>Cristian Hernández Cely</b> , Jhon Stivenson Pabon and <b>Rafael Torres Amaris</b>	Depolarization of elliptically polarized light through linear and elliptical retarders
2	6171	Alejandra Gomez-Ramirez, Heberley Tobon Maya, Samuel Ignacio Zapata-Valencia, Carlos Buitrago-Duque and Jorge Garcia-Sucerquia	High-quality open-source dataset of Digital Lensless Holographic Microscopy recordings and reconstructions.
3	6238	Samuel Ignacio Zapata-Valencia, Heberley Tobon Maya and Jorge Garcia-Sucerquia	Removal of perturbations from Optical-Pickup-Unit-based illumination for Digital Lensless Holographic Microscopy
4	6412	Omar Ortíz, Carlos A. Álvarez-Ocampo, Luis A. Sánchez, Antonio Díez, Jose Luis Cruz and <b>Miguel Vicente Andrés</b>	Resonantly opto-excited transverse acoustic modes in optical fibers
5	6431	Ricardo Zamudio, Valentin López Gayou and Maria Eugenia Jaramillo Flores	Characterization and differentiation of cervical cancer cell lines using ATR-FTIR spectroscopy
6	6611	<b>Doralycia Carranza</b> , Teresita Spezzia-Mazzocco, Rubén Ramos and Joaquín Ascencio	Effect of photodynamic therapy on the viscoelastic properties of <i>Candida tropicalis</i>
7	6991	<b>Taina Ramírez</b> , Jaime Cascante, Mavis Montero and Esteban Avendaño	Fabrication and characterization of a carbon nanotube saturable absorber for fiber laser passive mode locking
8	7059	C. Cuadrado Laborde, L.A. Sánchez, J.L. Cruz, A. Díez and <b>M.V. Andrés</b>	All polarization-maintaining passively modelocked thulium doped fiber lasers
9	7145	Andrés Plaza-Martínez, Irving Caballero-Quintana and José-Luis Maldonado	PHOTOVOLTAIC PERFORMANCE OF ORGANIC SOLAR CELLS BASED ON THE ACTIVE LAYER PM6:Y7
10	7160	<b>John Rosses</b> and Jaime Cascante	Supercontinuum generation in zero-dispersion wavelength decreasing microstructure fiber with Q-switch pump laser
11	7558	David Loaiza, Teresita Spezzia, Debora Vazquez, Rubén Ramos and Alejandra Espinosa	Effect of Methylene Blue in Antimicrobial Therapy against Different Species of <i>Candida</i>
12	7907	Juan Carlos Atenco Cuautle, Elizabeth Saldivia Gomez and <b>Gabriel Martinez Noconoff</b>	Topological charge generated with non-homogeneous optical modes
13	7961	Ana Maria Enriquez Zamudio and Karen Rodríguez	Two-sites Gutzwiller approach to study a spin-1 bosonic system
14	8370	José Luis López-González, Andrea Gutierrez-García, Daniel May-Arrijoja and <b>Mariana Alfaro</b>	Simulation of a THz multimodal interference switch based on refractive index modulation
15	8561	Christian Orlando Quintanar-Sotelo, Jesús Muñoz-Maciel, Francisco Javier Casillas-Rodriguez and <b>Miguel Mora-Gonzalez</b>	Análisis de algoritmos de optimización para demodulación de franjas interferométricas al utilizar FSD
16	9989	<b>Gonzalo Gálvez de la Puente</b> , Noely Calderon Ipanaque, Rolf Grieseler	Luminescence of terbium-doped silicon carbide thin films
17	8832	<b>Erick Reyes Vera</b> , Juan Soto Perdomo, Jorge Montoya Cardona, Sebastian Valencia Garzon, Pedro Torres Trujillo and Esteban Gonzalez Valencia	Fabrication and characterization of an optical mode converter based on Long Period Fiber Gratings written in few-mode fiber

18	9467	David Castelló-Lurbe, Antonio Carrascosa, Enrique Silvestre, Antonio Díez, Jürgen Van Erps, Nathalie Vermeulen and Miguel V. Andrés	Soliton-number measurement in fibers
19	9668	Mariela Flores Castañeda and Santiago Camacho López	Influence of liquid media on the synthesis of nanomaterials by laser ablation of solids in liquids.
20	9736	<b>Francis Segovia</b> and Sofyan Taya	Tunabilidad del modo defectivo con una cavidad infiltrada por escherichia coli en cristales fotónicos unidimensionales
21	9929	<b>Gilberto Gomez-Rosas</b> , Oscar Blanco-Alonso, Irvin A Guillen-Virgen, Denise N Castañeda-Castañeda, Jose G. Quiñones-Galvan, Carlos Molpeceres, Miguel Morales, David Canteli, David Muñoz, Diana Quintero-Gonzalez, Montserrat Gómez-Sepulveda and Maria F. Ron-Ruvalcaba	Cleaning of copper and bronze surfaces using high energy pulsed lasers
22	4758	<b>Natalia Quesada Fallas</b> , Joan Alfaro Zamora, José Abraham Alfaro Alvarado, Raziel Farid Sanabria Sandí and Ernesto Montero Zeledón	Verification of a measurement procedure in the determination of the coefficient of thermal expansion of standard blocks of dimensional magnitude using a Michelson Interferometer
23	655	Kaled Sequeira Aguilar, <b>Javier Fernández Gonazález</b> , José Abraham Alfaro Alvarado, Raziel Farid Sanabria Sandí and Ernesto Montero Zeledón	Evaluation of the uncertainty of the coefficient of thermal expansion of a ceramic dimensional gauge block measured by interferometry
24	8245	<b>Kevin Guerrero Calero</b> , Diego Obando Fonseca, José Abraham Alfaro Alvarado, Raziel Farid Sanabria Sandí and Ernesto Montero Zeledón	Adaptation and design of a device for the determination of the coefficient of thermal expansion by interferometry
25	8595	Bryan Barrantes Molina, <b>Fernando Monge Sánchez</b> , Dennis Murillo Salazar and Ernesto Montero Zeledón	Manufacturing of low-density diffraction grating for educational purposes
26	2073	<b>María Alejandra Sánchez Barquero</b> , Sebastián Mora Sánchez, Walter Vargas Segura, Mac Arturo Murillo Fernández, Ernesto Montero Zeledón and <b>Javier Fallas Fallas</b>	Gamma irradiation effect on the color of bird feathers for conservation purposes
27	8364	Boris Alvarado Vindas, Mac Arturo Murillo Fernández, Laura Rojas Rojas and Ernesto Montero Zeledón	Determination of textile color by digital image acquisition and processing
28	4299	Heriberto Salazar	FIBER OPTIC NETWORK FOR RURAL AND MOUNTAINOUS AREAS.
29	9978	Walter Furlan, Anabel Martínez-Espert, Vicente Ferrando, Diego Montagud-Martínez and Juan A. Monsoriu	Numerical simulation of a new trifocal intraocular lens based on fractal profile in a model eye
30	2326	Walter D. Furlan, Francisco M. Muñoz Pérez, Vicente Ferrando, Juan A. Monsoriu and Ricardo Arias-Gonzalez	Multiplexed vortices in an optical tweezers setup