

Session VI: Workshop (room AF4)

09:00	10:30	Workshop	Photonics Explorer workshop	Amrita Prasad, Vrije Universiteit Brussel, Brussels, Belgium
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Parallel session, Session VII: Special Session on "educational laboratories with single photon" (room AF3)

Chair: Enrique J. Galvez

09:00	09:25	Keynote	Single-photon laboratories to rethink how we quantum mechanics	Enrique J. Galvez	Department of Physics and Astronomy, Colgate University, U.S.A.
09:25	09:50	Keynote	Looking at experiments first: Curricular and technical approaches to teaching elementary quantum physics	Jan-Peter Meyn	Physics Institute, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
09:50	10:15	Keynote	Quantum Optics Laboratories for Undergraduates	Mark Beck	Department of Physics, Whitman College, USA
10:15	10:40	Keynote	The Hong–Ou–Mandel interferometer: an undergraduate experience	V́ctor Velázquez	Facultad de Ciencias, Universidad Nacional Autónoma de México, México

Parallel session, Session VIII: Hands-On & outreach (room AF2)

Chair: Andrew Forbes

09:00	09:15	Oral	The “LuNa” Project: experimental didactic modules exploiting portable setups to teach optics in Primary and Secondary Schools	Maria Bondani ^{1,2} , Alessia Allevi ¹ , Luca Nardo ^{1,3} and Fabrizio Favale ¹	1- Dipartimento di Scienza e Alta Tecnologia – Università degli Studi dell’Insubria, Como, Italy 2- Istituto di Fotonica e Nanotecnologie – Consiglio Nazionale delle Ricerche, Como, Italy 3- Dipartimento di scienze della salute – Università degli Studi di Milano Bicocca, Milano, Italy
09:15	09:30	Oral	Light on the Waves – Science, music, poetry... and light!	Marta García-Matos	ICFO – The Institute of Photonic Sciences, Mediterranean Technology Park, Av. Carl Friedrich Gauss Castelldefels (Barcelona), Spain.
09:30	09:45	Oral	The Galileoscope Project: Community-Based Technology Education in Arizona	Stephen M. Pompea ¹ , Leonard W. Fine ² , Constance E. Walker ¹ , Robert T. Sparks ¹ , Chuck Dugan ¹ and Erin F. C. Dokter ³	1- National Optical Astronomy Observatory 2- Science Foundation Arizona 3- The University of Arizona
09:45	10:00	Oral	Following the path of light: recovering and manipulating the information about an object	Maria Bondani ^{1,2} , and Fabrizio Favale ¹	1- Dipartimento di Scienza e Alta Tecnologia – Università degli Studi dell’Insubria, Como, Italy 2- Istituto di Fotonica e Nanotecnologie – Consiglio Nazionale delle Ricerche, Como, Italy
10:00	10:15	Oral	The PHOTON Explorations: Sixteen Activities, Many Uses	Judith Donnelly ¹ , Kathryn Amatrudo ² , Kathleen Robinson ³ , and Fenna Hanes ⁴	1-Three Rivers Community College, New London Turnpike, Norwich, CT 2-The Optical Society of America, Washington, DC 3-SPIE, Bellingham, WA 4-New England Board of Higher Education, Boston, MA
10:15	10:30	Oral	HANDS-ON OPTICS AND PHOTONICS OUTREACH IN RIGA	Natalija Lesina, Janis Spigulis	Institute of Atomic Physics and Spectroscopy, University of Latvia, Riga, Latvia

Parallel session, Session IX: General concepts (room AF1)

Chair: Anna Consortini

09:00	09:15	Oral	Study History of Optics: Achievements of Middle Ages	S.K. Stafeev, M.G. Tomilin	St.-Petersburg National Research University of Information Technologies, Mechanics and Optics, Physics Department, St.-Petersburg, Kronverksky, Russia
09:15	09:30	Oral	Astronomical phenomena: Events with high impact factor in teaching Optics and Photonics	Dan Curticapean	Offenburg University of Applied Sciences

09:30	09:45	Oral	Towards a Research Pole in Photonics in Western Romania	Virgil-Florin Duma ¹ , Meda L. Negru ² , Cosmin Sinescu ² , Mihai Rominu ² , Eftimie Miutescu ³ , Amelia Burlea ³ , Miomir Vlascic ⁴ , Nicolae Gheorghiu ⁵ , Octavian Cira ¹ , Gheorghe Hutiu ¹ , Corina Mnerie ¹ , Dorin Demian ¹ , Corina Marcauteanu ² , Florin Topala ² , Jannick P. Rolland ⁶ , Ioana Voiculescu ^{1,7} , and Adrian Gh. Podoleanu ⁸	1-3OM Optomechatronics Group, Aurel Vlaicu University of Arad, Arad, Romania 2-School of Dentistry, Victor Babes Medicine and Pharmacy University of Timisoara, Timisoara, Romania 3-Arad County Emergency University Hospital, Calea Victoriei, Arad, Romania 4-S.C. Intelliform S.R.L., Calea Mosnitei, Timisoara, Romania 5-S.C. Bioclinica S.A., Cetatii Ave., Timisoara 6- Institute of Optics, University of Rochester, 275 Hutchison Rd., Rochester, NY, USA 7-City College Nanofabrication Facility, Mechanical Engineering Department, City University of New York, N.Y., USA 8-School of Physical Sciences, University of Kent, Canterbury, U.K.
09:45	10:00	Oral	The Puerto Rico Photonics Institute	Jonathan S. Friedman	Department of Environmental Sciences Universidad Metropolitana San Juan
10:00	10:15	Oral	Concept of the International Project University "Learning without borders"	Irina Livshits, and Vladimir Vasilyev	National Research University of Information Technologies, Mechanics and Optics, Saint Petersburg, Russia
10:15	10:30	Oral	Formulation of didactic interest of the laws of refraction of light	Guadalupe Martínez ¹ , Ángel Luis Pérez ² , María Isabel Suero ² , Francisco L. Naranjo ²	1- Dept. of Didactic of Experimental Sciences and Mathematics, Faculty of Education, University of Extremadura, Badajoz, Spain; 2- Dept. of Physics, Faculty of Sciences, University of Extremadura, Badajoz, Spain

Joint Special Session ETOP2013 RIAO/OPTILAS2013
Entrepreneurship in Optics & Photonics (room AC1)

11:00	12:45	Keynote	Entrepreneurship in optics and photonics session	Duncan Moore	University of Rochester, USA
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Session XI: Hands-On Session (rooms AF4, AF3, AF1)

14:45	16:30	Hands-On	Hands-on Holography	Pedro Pombo	Physics Department, University of Aveiro, Portugal
14:45	16:30	Hands-On	"The magic of light!" – An entertaining optics and photonics awareness program	Carlos Florensa	ICFO-The Institute of Photonic Sciences, Mediterranean Technology Park, Spain
14:45	16:30	Hands-On	The Hands-on Optics project	Stephen M. Pompea	National Optical Astronomy Observatory, USA

14:45 16:30 **Poster Session (room PF1)**

N°	Title	Authors	Affiliation
1	Predicting scientific oral presentation scores in a high school photonics program	Pamela Olivia Gilchrist ^{1*} , Eric D. Carpenter ² , Asia Gray-Battle ¹ , Tuere Bowles ³	¹ The Science House, North Carolina State University, 909 Capability Dr., Raleigh, NC USA 27695 ² Dept. Of Psychology, North Carolina State University, Box 7650, Raleigh NC USA 27695 ³ Dept. Of Leadership, Policy, and Adult Higher Education, North Carolina State University, Box 7801, Raleigh, NC USA 27695
2	Piloting a fiber optics and electronic theory curriculum with high school students	Pamela Olivia Gilchrist ^{1*} , Brandon Conover ² , Eric Carpenter ³ , Tuere Bowles ⁴ , Asia Gray-Battle ¹	¹ The Science House, North Carolina State University, 909 Capability Dr., Raleigh, NC USA 27695 ² Bennett Aerospace, Incorporated ³ Dept. Of Psychology, North Carolina State University, Box 7650, Raleigh NC USA 27695 ⁴ Dept. Of Leadership, Policy, and Adult Higher Education, North Carolina State University, Box 7801, Raleigh, NC USA 27695

3	Graduate Studies on Optoelectronics in Argentina: An experience	Fernández, Juan C.*, Garea, María T., Isaurralde, Silvia, Perez, Liliana I, Raffo, Carlos A.	Facultad de Ingeniería, Universidad de Buenos Aires Paseo Colón 850, 2º P., (C1063ACV) Ciudad de Buenos Aires, Argentina
4	ALOP-Active Learning In Optics and Photonics - A UNESCO's program spreading in Colombia through the National University.	Catalina Ramírez*, and Freddy Monroy	Universidad Nacional de Colombia
5	DIFFRACTION OPERATORS IN PARAXIAL APPROACH	William Lasso ¹ , Mariana Navas ² , Liz Añez ² , Romer Urdaneta ² , Leonardo Diaz ^{*3} and Cesar O. Torres ³	1- Estudiante de Ingeniería de Sistemas Universidad Popular del Cesar- Valledupar- Colombia 2- Universidad del Zulia- Maracaibo - Venezuela 3- Laboratorio de Óptica e informática, Universidad Popular del Cesar- Valledupar- Colombia
6	Top Lateral Refraction and Reflection of Polarized Light in Lenses. Coplanar Lens System. Applications.	Lázaro J. Miranda Díaz	Electronic Design, Center of Technological Applications and Nuclear Development (CEADEN), Ciudad Habana, Cuba
7	Contribution from optical course for the educational guidance of engineering careers students	R. Serra Toledo ¹ , I. Alfonso Pérez ¹ , A. Moreno Yeras ¹ , J. J. Llovera González ¹ , D. Zottola Pareja ¹ , D. S. F Magalhães ² , J.B. Lemus Alarcón ³ , and M. Muramatsu ⁴	¹ Instituto Superior Politécnico José Antonio Echeverría, Habana, Cuba; ² Universidade Estadual de Campinas, SP, Brasil; ³ Universidad Libre de Colombia, Bogotá, Colombia; ⁴ Instituto de Física da Universidade de São Paulo, SP, Brasil.
8	On-Light: Optical Social Network	Rogério Dionísio	UTC de Engenharia Electrotécnica e Industrial Escola Superior de Tecnologia, Instituto Politécnico de Castelo Branco, Avenida do empresário S/N, 6000-767 Castelo Branco - Portugal
9	TEACHING OPTICAL DIMENSIONAL METROLOGY OF SURFACES AND INTERNATIONAL STANDARDS	Manuel F. M. Costa	Departamento de Física da Universidade do Minho, Portugal
10	Investigating shadows. A pedagogical intervention project with primary school children	Silvana Noversaa ¹ ; Cátia Abreu ¹ ; Paulo Varela ¹ ; Manuel F. M. Costa ²	1- Institute of Education, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal, 2- Centro de Física, University of Minho, Campus de Gualtar 4710-057 Braga, Portugal
11	Light. An experiments based learning approach with primary school children	Cátia Abreu ¹ ; Silvana Noversa ¹ ; Paulo Varela ¹ ; Manuel Filipe Costa ²	1- Institute of Education, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal, 2- Centro de Física, University of Minho, Campus de Gualtar 4710-057 Braga, Portugal
12	Advanced experiments with an Erbium doped fiber laser	Paulo V. S. Marques, Manuel B. Marques*, and Carla C. Rosa	Faculdade de Ciências da Universidade do Porto – Departamento de Física e Astronomia, and Instituto de Engenharia de Sistemas e Computadores do Porto Rua do Campo Alegre 687, 4169-007 Porto, Portugal
13	Learning Optics using a smart-phone	Amparo Pons*, Juan Carlos Barreiro, Pascuala García-Martínez	Departament d'Òptica, Universitat de València, 46100 Burjassot (Valencia), Spain

14	Teaching methodologies to promote creativity in the professional skills related to optics knowledge	Alicia Fernández-Oliveras ¹ *, Paz Fernandez ² , Antonio Peña-García ² , María Luisa Oliveras ³	¹ Departamento de Óptica, Universidad de Granada, Spain ² Departamento de Ingeniería Civil, Universidad de Granada, Spain ³ Departamento de Didáctica de las Matemáticas, Universidad de Granada, Spain
15	Slip-lamp management in Contact Lenses laboratory classes: learning upgrade with monitor visualization of webcam video recordings	Justo Arines, and Ana Gargallo*	Departamento de Física Aplicada (Área de Óptica), Universidad de Santiago de Compostela, Spain
16	MATLAB GUI (Graphical User Interface) for the design of GRIN components for optical systems as an educational tool	C. Bao Varela* and A. I. Gómez Varela	Grupo de Microóptica y Óptica GRIN, Facultade de Física y Facultade de Óptica y Optometría, Universidade de Santiago de Compostela, Campus Vida s/n 15782, Santiago de Compostela
17	Development of Matlab GUI Educational Software to Assist a Laboratory of Physical Optics	Elena Fernández*, Rosa Fuentes, Celia García and Inmaculada Pascual,	Departamento de Óptica, Farmacología y Anatomía Instituto Universitario de Física Aplicada a las Ciencias y las Tecnologías, Universidad de Alicante, Apartado 99, E-03080 Alicante, Spain
18	NEMO Educational Kit on Micro-Optics at the Secondary School	M.T.Flores-Arias*, and C.Bao	"Microoptis and Optis Group", Applied Optics Department, Faculty of Physics, Campus Vida, University of Santiago de Compostela, E15701, Santiago de Compostela, Spain
19	Optics in the Physics Degree at the USC: The use of the Moodle platform	Maria Teresa Flores-Arias*	Departamento de Física Aplicada (Area de Optica), Facultade de Física, Campus Vida, Universidade de Santiago de Compostela. 15782 Santiago de Compostel
20	Master on "Photonics and Laser Technologies": on-line teaching experience	Ángel Paredes ¹ , Humberto Michinel ¹ , Jose Ramón Salgueiro ¹ , Benito Vazquez-Dorrio ² , Armando Yáñez ³ , Justo Arines ⁴ , and M.Teresa Flores Arias ⁴ *	1- Departamento de Física Aplicada, Universidade de Vigo. Facultade de Ciencias, Campus de As Lagoas, 32004 Ourense, Spain 2- Applied Physics Department, University of Vigo, Campus Universitario, 36310 Vigo, Spain 3- Departamento de Ingeniería Industrial II. Universidade da Coruña. Escola Politécnica Superior, Campus de Esteiro s/n, 15403 Ferrol, Spain 4- Departamento de Física Aplicada (Area de Optica), Facultade de Física, Campus Vida, Universidade de Santiago de Compostela. Santiago de Compostela, Spain
21	Incorporating active-learning techniques into the photonics-related teaching in the Erasmus Mundus Master in "Color in Informatics and Media Technology"	Antonio M. Pozo*, Manuel Rubiño, Javier Hernández-Andrés, Juan Luis Nieves	Departamento de Óptica, Facultad de Ciencias, Universidad de Granada, Granada 18071, Spain
22	Measuring the image quality of digital-camera sensors by a ping-pong ball	Antonio M. Pozo*, Manuel Rubiño, José J. Castro, Carlos Salas, Francisco Pérez-Ocón	Departamento de Óptica, Facultad de Ciencias, Universidad de Granada, Granada 18071, Spain
23	A proposal on teaching methodology: cooperative learning by peer tutoring based on the case method	Antonio M. Pozo*, Juan José Durbán, Carlos Salas, M ^a del Mar Lázaro	Departamento de Óptica, Facultad de Ciencias, Universidad de Granada, Granada 18071, Spain
24	Naked-eye Astronomy: Optics of the starry night skies	Salvador Bará*	Universidade de Santiago de Compostela, Optics Area, Applied Physics Dept, Faculty of Optics and Optometry, 15782 Santiago de Compostela, Galicia

25	Optics in engineering education: stimulating the interest of first-year students	Jesús Blanco-García, Benito V. Dorrio*	Applied Physics Department, University of Vigo, Campus Universitario,36310 Vigo, Spain
26	A teaching resource using the GUIDE environment: simplified model of the eye for secondary school students	A. I. Gómez-Varela ¹ *, F. Salvado-Vara ² and C. Bao-Varela ¹	1- Grupo de Microóptica y Óptica GRIN, Facultade de Física y Facultade de Óptica y Optometría, Universidade de Santiago de Compostela, Campus Vida s/n 15782, Santiago de Compostela 2- Colegio Hogar de Santa Margarita, C/ Valle-Inclán 1-3 15011, A Coruña, España
27	The USC-OSA Student Chapter: goals and benefits for the Optics community	Ana Isabel Gómez-Varela,* Ana Gargallo, Héctor González-Núñez, Tamara Delgado-García, Citlalli Almaguer-Gómez and María Teresa Flores-Arias	Departamento de Física Aplicada (Área de Óptica), Facultade de Física, Campus Vida s/n, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain
28	Using ray matrices to derive analytical expressions of optical aberrations	Ignacio Moreno*, Pascuala García-Martínez, Carlos Ferreira	1- Departamento de Ciencia de Materiales, Óptica y Tecnología Electrónica, Universidad Miguel Hernández de Elche, 03202 Elche (Alicante), Spain 2- Departament d'Optica, Universitat de València, 45100 Burjassot (Valencia), Spain
29	COURSE FOR UNDERGRADUATE STUDENTS: ANALYSIS OF THE RETINAL IMAGE QUALITY OF A HUMAN EYE MODEL	María del Mar Pérez*, Ana Yebra, Alicia Fernández-Oliveras, Razvan Ghinea, Ana M. Ionescu, Juan de la Cruz Cardona	Department of Optics. Faculty of Sciences. University of Granada.18071 Spain
30	Motivational activities based on previous knowledge of students	J.A. García ¹ , L. Gómez-Robledo ¹ , R. Huertas ¹ , and F.J. Perales ²	1- Departamento de Óptica. Campus Fuentenueva, Faculty of Sciences, University of Granada, Granada, Spain. 2- Departamento de Didáctica de las Ciencias Experimentales University of Granada, Granada, Spain.
31	"Pick it up with light!"- An Advanced Summer Program for Secondary School Students	Alejandra Valencia, S.Chaitanya Kumar*, Manoj Mathew, Giorgio Volpe, and Giovanni Volpe	ICFO-The Institute of Photonic Sciences, Mediterranean Technology Park, Av. Carl Friedrich Gauss, num. 3, 08860 Castelldefels (Barcelona), Spain
32	The design of partially coherent sources	F. Gori and M. Santarsiero*	Dipartimento di Ingegneria, Università Roma Tre Via della Vasca Navale, 84; 00146 Rome
33	Single-photon interference experiment for High Schools	Maria Bondani*	Istituto di Fotonica e Nanotecnologie – Consiglio Nazionale delle Ricerche, Como, Italy Dipartimento di Scienza e Alta Tecnologia – Università degli Studi dell'Insubria, Como, Italy
34	Scientific evaluation of an intra-curricular educational kit to foster inquiry based learning (IBL)	Nathalie Debaes ¹ , Nina Cords ² , Amrita Prasad ¹ *, Robert Fischer ¹ , Manfred Euler ² , and Hugo Thienpont ¹	1- Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, Belgium 2- Leibniz-Institut für die Pädagogik der Naturwissenschaften und Mathematik an der Universität Kiel, Olshausenstr. 62, 24098 Kiel, Germany
35	Building an Optomechatronics Group in a young university in Western Romania	Virgil-Florin Duma*, Gheorghe Hutiu, Octavian Cira, Dorin Demian, Corina Mnerie, Iosif Kaposta, Alexandru Schitea, and Marius Tuef	30M Optomechatronics Group, Aurel Vlaicu University of Arad, 77 Revolutiei Ave., 310130 Arad, Romania

36	Expansion of student chapters in Africa: from south to north	Rim Cherif ^{1*} , Amine Ben Salem ¹ , Mourad Zghal ¹ , Darryl Naidoo ² , Andrew Forbes ² , Alexander M. Heidt ³ , and Erich .G. Rohwer ³	¹ Engineering school of communications of Tunis; University of Carthage ² CSIR National Laser Centre, SA ³ Laser Research Institute, University of Stellenbosch, SA
37	Active Learning in Optics and Photonics. Hands on in wave optics	Z. Ben Lakhdar, H. Ghalila*, S. Lahmar, Z. Dhouaidi, Y. Majdi	Société Tunisienne d'Optique (STO)
38	Numerical Simulation of Optically Trapped Particles	Giorgio Volpe ¹ and Giovanni Volpe ^{2*}	1- Institut Langevin, ESPCI ParisTech, CNRS UMR7587, 1 rue Jussieu, 75005 Paris, France 2- Physics Department, Bilkent University, Cankaya, 06800 Ankara, Turkey
39	APPLICATION OF COMPUTERIZED MODELS IN THE UNIVERSITY COURSE OF OPTICS	Nishchev Konstantin N.	Mordovian State University, Russia
40	Virtual-Reality-Based Educational Laboratories in Fiber Optic Engineering	Dana Hayes, Craig Turczynski, Jonny Rice and Michael Kozhevnikov*	Department of Engineering, Norfolk State University, VA, USA
41	Development of an Optics Based Approach to Record the Acoustic Fingerprints of Molecules	F. Yehya and A.K. Chaudhary*	Advance Centre of Research in High Energy Materials, University of Hyderabad, Hyderabad-500046(A.P.), India
42	Laser Light Scattering for Investigation of Particle Size Dependency of Quality and Flavour of Coffee Samples Grown in Ethiopia	Endris Taju and A, V, Gholap*	Department of Physics, Addis Abeba University, Addis Abeba, Ethiopia
43	OPTICS EDUCATION AND TRAINING IN PAKISTAN	Imrana Ashraf*	Department of Physics, Quaid-I-Azam University, Islamabad. 45320, Pakistan
44	Diversiform and Practice-connected Class-teaching in Fourier Optics for Undergraduate Students	Yuhong Wan ^{1,2*} , Shiquan Tao ^{1,2} , Zhuqing Jiang ^{1,2} , and Dayong Wang ^{1,2}	1- College of Applied Sciences, Beijing University of Technology 2- Institute of Information Photonics Technology, Beijing University of Technology
45	Understanding the Fourier transform	Qian Kemaoy*	School of Computer Engineering, Nanyang Technological University, Singapore 639798
46	Training on the thin anti-reflection within the curriculum of the optical optometry professional license: Optique Optométrie	E.L. Ameziane*, M. Azizan, K. Hafidi	Université Cadi Ayyad Faculté des Sciences Semailia Département de Physique, Marrakech,
47	Modulation of Optical Pulse Shape Using Electrical Signals	Vrushali V Kharat, Shrikrushna S Raut, and Kamlesh Alti*	Department of Physics, Sant Gadge Baba Amravati University, Amravati-444602
48	Sculpting of Optical Fiber: Classroom Experiment	Shrikrushna S Raut, Vrushali V Kharat and Kamlesh Alti*	Department of Physics, Sant Gadge Baba Amravati University, Amravati-444602
49	An introductory approach to the concept of spatial coherence	Marcelo Trivi	Centro de Investigaciones Ópticas, Departamento Ciencias Básicas, Facultad Ingeniería, Universidad de La Plata, Argentina