

Monday, 26 May

10:30 - 11:00

Opening Ceremony

Room S. Pedro II

11:00 - 12:30

Plenary session I

Room S. Pedro II

Chair: Manuel F. M. Costa, University of Minho and Rogério Nogueira, Instituto de Telecomunicações (Portugal)

Vector wave holography and optical mass storage

Toyohiko Yatagai

Utsunomiya University (Japan)

The capacity crunch and perspectives on space-division multiplexing technologies

Yoshinari Awaji

National Institute of Information and Communications Technology (Japan)

12:30 - 14:00

Lunch break • Room St. António

14:00 - 15:30

Parallel sessions

Mo.1.a • Room S. Pedro II

Chair: Moisés Ribeiro, Universidade Federal do Espírito Santo (Brazil)

Multi-carrier transmitters in next generation access networks (*Invited*)

Prince M. Anandarajah, R. Zhou, V. Vujicic, D. G. Pascual, L. P. Barry
Dublin City University (Ireland)

Photonic integrated transmitter and receiver for NG-PON2

Ana M. Tavares, A. Lopes, C. Rodrigues, P. Mão Cheia, T. Mendes, S. Brandão, F. Rodrigues, R. Ferreira, A. Teixeira
Instituto de Telecomunicações (Portugal)

Neuromorphic opto-electronic integrated circuits for optical signal processing

Bruno Romeira, J. Javaloyes, S. Balle, O. Piro, R. Avó, J. M. Figueiredo
Universidade do Algarve (Portugal)

Calculation of the number of bits required for the estimation of the bit error ratio

Álvaro J. Almeida, N. A. Silva, N. J. Muga, P. S. André, A. N. Pinto
Instituto de Telecomunicações (Portugal)

Mo.1.b • Room S. João

Chair: Alexander Pyatenko, National Institute of Advanced Industrial Science and Technology (Japan)

Laser induced fluorescence technique for environmental applications

Andrei B. Utkin, R. Felizardo, C. Gameiro, P. Cartaxana, A. R. Matos
INOV - INESC Inovação and ICEMS, Instituto Superior Técnico, Technical University of Lisbon (Portugal)

Investigation of the humidity sensitivity of acrylamide-based photopolymer containing N-phenylglycine as a photoinitiator

Tatsiana Mikulchyk, S. Martin, I. Naydenova
Dublin Institute of Technology (Ireland)

Diacetone acrylamide-based holographic nanocomposite for sensing applications

Dervil Cody, E. Mihaylova, T. Babeva, H. Awala, R. Retoux, S. Mintova, I. Naydenova
Dublin Institute of Technology (Ireland)

Interferometry within a resonant cavity with standing wave detection

Josef Lazar, M. Hola, J. Hrabina, J. Oulehla, O. Cip
Institute of Scientific Instruments of the ASCR (Czech Republic)

Scalable lidar technique for fire detection

Andrei B. Utkin, F. Piedade, V. Beixiga, P. Mota, P. Lousã
INOV - INESC Inovação and ICEMS, Instituto Superior Técnico, Technical University of Lisbon (Portugal)

15:30 - 16:30

Coffee break & Poster session Mo.P

16:30 - 18:00

Parallel sessions

Mo.2.a • Room S. Pedro II

Chair: Lúcia Bilro, Instituto de Telecomunicações (Portugal)

Diffusion and interface effects during preparation of microstructured fibers (*Invited*)

Jens Kobelke, J. Bierlich, K. Wondraczek, C. Aichele, Z. Pan, S. Unger, K. Schuster, H. Bartelt
Institute of Photonic Technology (Germany)

Light propagation in xenon filled kagomé hollow core photonic crystal fibers

Sílvia Rodrigues, M. M. Facão, M. F. Ferreira
Departamento de Física and I3N, Universidade de Aveiro (Portugal)

Characterization of arbitrary fiber taper profiles with optical microscopy and image processing algorithms

H. D. Farias, R. Sebem, Aleksander S. Paterno
Universidade Federal de Santa Catarina (Brazil)

Experimental setup for EIT characterization in hollow-core fibers

Bruno D. Tiburcio, J. Monteiro, S. G. Rodrigues, G. M. Fernandes, M. Carvalho, M. Facão, M. G. Ferreira, A. N. Pinto
Instituto de Telecomunicações, Aveiro (Portugal)

Mo.2.b • Room S. João

Chair: Helder Crespo, Dept. of Physics & Astronomy, University of Porto (Portugal)

PENELOPE - a fully diode-pumped petawatt laser system (*Invited*)

Daniel Albach, M. Siebold, F. Roeser, M. Loeser, U. Schramm
Helmholtz-Zentrum Dresden-Rossendorf e.V. (Germany)

CW 1.06- μm pumped Ytterbium-Holmium co-doped all-fiber laser for 2.05 μm

Yuri O. Barmenkov, A. V. Kir'yanov, V. P. Minkovich
Centro de Investigaciones en Óptica AC (Mexico)

Development of a ytterbium pumped YCOB based broadband OPCPA laser system

Hugo A. Pires, C. João, T. Imran, G. Figueira
Universidade Técnica de Lisboa (Portugal)

Yellow light-generation by frequency doubling of Raman-shifted all-fiber laser

Manuel Ryser, V. Romano
University of Bern, Institute of Applied Physics (Switzerland)

Design of high-brightness TEM₀₀-mode solar-pumped laser for renewable material processing

Dawei Liang, J. Almeida
CEFITEC Physics Department, Universidade Nova de Lisboa (Portugal)

Hybrid Yb:CaF₂/Yb:YAG compact CPA laser generating 100 mJ for pumping a broadband optical parametric amplifier

Celso P. João, H. Pires, L. Cardoso, G. Figueira
Universidade Técnica de Lisboa (Portugal)

19:30

Welcome Reception • Capitania de Aveiro

15:30 - 16:30

Poster session

Mo.P • Room S. Tomás de Aquino

- Tb³⁺ ions doped bismuth gadolinium tungstate: A green emitting phosphor for display devices**
P. Krishnapuram, S. Jakka, G. M. P. F., S. M. J., V. M. A.
- Near-field resonant energy transfer between spherical quantum dots**
F. C. Peres, M. I. Vasilevskiy
- On the electro-optical behavior of an OLED based on europium and the relationship with electrical transport phenomena**
L. R. Pereira, G. Santos, W. J. Simões
- Wavemeter uncertainty evaluation for calibration of the external cavity diode lasers**
I. Outumuro González, J. Valencia, J. Diz-Bugarin, J. Blanco, B. Vazquez-Dorrio
- Dichroism of stretched poly vinyl alcohol (APV) foils**
I. Stoica, L. Dumitrascu, I. Dumitrascu, D. O. Dorhoi
- Spectroscopic study on laser potential of La₃Ga_{5.5}Ta_{0.5}O₁₄:Er and La₃Ga_{5.5}Ta_{0.5}O₁₄:Ho, Yb single crystals**
J. Komar, R. Lisiecki, W. Ryba-Romanowski, M. Berkowski
- Photoluminescence properties of Nd³⁺-doped YVO₄ nanophosphors synthesized by modified Pechini method**
I. Kolesnikov, D. Tolstikova, M. D. Mikhailov
- Evaluation of spectroscopic parameters relevant to achievement of yellow-red light amplification in selected oxide crystals doped with samarium and dysprosium**
R. Lisiecki, J. Komar, W. Ryba-Romanowski, M. Berkowski
- Reaching relativistic intensities with high temporal contrast**
S. Künzel

10. **Extended NIR emission using rare earth tri-doped barium lanthanum fluorotellurite glasses for fiber amplifiers**
M. Graça, J. Suresh, P. Krishnapuram, G. Venkataiah, M. Valente, M. Soares
11. **Nanoparticle fabrication in therminol VP-1 by pulsed laser ablation in liquids in two steps**
O. Torres-Mendieta, R. Mondragón, O. Mendoza-Yero, G. Minguez, J. Lancis
12. **Femtosecond laser writing in silver-phosphate glasses**
P. Olshin, A. Kireev, A. Povolotskiy, A. Manshina, I. Sokolov
13. **Split-ring resonators manufactured on conductive layer by selective laser ablation**
P. E. Koziol, A. J. Antonczak, Ł. K. Łazarek, B. D. Stepak, M. R. Wojcik, M. Walczakowski, K. M. Abramski
14. **Effect of CO₂ laser micromachining on physicochemical properties of poly(L-lactide)**
A. J. Antonczak, B. Stepak, K. Szustakiewicz, M. Wojcik, P. E. Koziol, Ł. Łazarek, K. M. Abramski
15. **Monitoring the laser cleaning of granites by means of multi spectral image analysis**
A. Ramil, M. Fiorucci, A. Lopéz, T. Rivas
16. **Excimer laser-induced incubation of poly(L-lactide)**
B. D Stepak, A. J. Antonczak, K. Szustakiewicz, P. E. Koziol, M. R. Wójcik, Ł. Łazarek, K. M. Abramski
17. **Fabrication of Fresnel microlens with contour excimer laser ablation**
M. R. Wójcik, A. J. Antonczak, P. E. Koziol, Ł. K. Łazarek, B. D. Stepak, K. M. Abramski
18. **Fabrication of microlens arrays on borosilicate glass using a combination of laser direct-write and thermal reflow techniques**
M. Flores-Arias, D. Nieto, M. Blanco
19. **Parabolic-like refractive index profile active GRIN materials by laser zone melting method**
A. I. Gómez-Varela, I. de Francisco, F. Rey-Garcia, M. Ferreira, P. André, C. Bao-Varela, M. T. Flores-Arias, X. de la Fuente
20. **The European BEACON project: "Scalable & Low-Power Microwave Photonics for Flexible, Terabit Telecom Payloads & High-speed Coherent Inter-satellite Links"**
V. C. Duarte, R. N. Nogueira, E. Kehayas, L. Stampoulidis, J. Anzalchi, M. Napierala, T. Nasilowski, R. Walker, M. O'Keefe, L. Zimmermann

Tuesday, 27 May

9:00 - 9:45

Plenary session II

Room S. Pedro II

Chair: Armando Pinto, Instituto de Telecomunicações (Portugal)

Multimodal imaging with single-pixel detectors

Jesus Lancis, E. Tajahuerce, P. Andrés, V. Durán, P. Clemente
Universitat Jaume I (Spain)

9:45 - 10:45

Parallel sessions

Tu.1.a • Room S. Pedro II

Chair: Daniel Albach, Helmholtz-Zentrum Dresden-Rossendorf e.V. (Germany)

Limits of spectral resolution in optical measurements (Invited)

Manuel B. Marques

Universidade do Porto and INESC Porto (Portugal)

Measurement of optical phase shifts using two-wavelength reflectometry

Jeffrey A. Meisner

Technical University of Delft (Netherlands)

A numerical method for calculated spectral transmittance of wavelength filter in larger band slits

António G. Ferreira Jr., R. Leone

Instituto de Pesquisas Tecnológicas (Brazil)

Tu.1.b • Room S. João

Chair: Rogério Dionísio, Instituto Politécnico de Castelo Branco (Portugal)

Using single photons to improve fiber optic communication systems

Armando N. Pinto, N. A. Silva, Á. J. Almeida, N. J. Muga
University of Aveiro and Instituto de Telecomunicações (Portugal)

A brief review on quantum bit commitment

Álvaro J. Almeida, N. Paunkovik, R. Loura, N. A. Silva, N. J. Muga, P. S. André, A. N. Pinto
Department of Physics, University of Aveiro and Instituto de Telecomunicações (Portugal)

Generation of optical cloning, steering, and splitting of optical beam by cross phase modulation

Onkar N. Verma, T. N. Dey

Indian Institute of Technology Guwahati (India)

Photon-pair generation in lossy waveguides

Nuno A. Silva, A. N. Pinto

University of Aveiro and Instituto de Telecomunicações (Portugal)

10:45 – 11:15

Coffee break

11:15 - 12:30

Parallel sessions

Tu.2.a • Room S. Pedro II

Chair: Manuel Ryser, University of Bern, (Switzerland)

High-resolution methods for the extraction of multiple displacement components in holographic moiré (*Invited*)

Pramod Rastogi, A. Patil
Ecole Polytechnique Fédérale de Lausanne (Switzerland)

A technique for reconstruction of the map of continuous curves from interference fringes

Paulius Palevicius, M. Ragulskis
Kaunas University of Technology (Lithuania)

Use of laser speckle and entropy computation to segment images of diffuse objects with longitudinal motion

Pedro G. Vaz, T. Pereira, D. Capela, L. Requicha, C. Correia, A. Humeau-Heuertier, J. Cardoso
University of Coimbra (Portugal)

Analysis of miscalibration errors (*Canceled*)

M. Miranda, Benito Vázquez
University of Vigo (Spain)

Tu.2.b • Room S. João

Chair: Prince Anandarajah, Dublin City University (Ireland)

Design of opto-electro-mechanical frequency tuning mechanisms for WDM filterbanks in SOI platforms (*Invited*)

H. Shoman, Marcus S. Dahlem
Masdar Institute of Science & Technology (United Arab Emirates)

Investigation of PPSLT waveguides for applications in optical communication systems

André Albuquerque, B. J. Puttnam, J. Hirohashi, M. V. Drummond, S. Shinada, R.N. Nogueira, N. Wada
Instituto de Telecomunicações (Portugal)

Advanced optical modulation and format conversion

Rogério P. Dionísio, A. Teixeira, R. N. Nogueira
Instituto de Telecomunicações and Instituto Politécnico de Castelo Branco (Portugal)

All-optical modulation format conversion from OOK to DP-QPSK based on fiber nonlinearity

Vanessa Duarte, M. V. Drummond, R. N. Nogueira
Instituto de Telecomunicações (Portugal)

Tu.2.c • Room S. Pedro III

Chair: Angela Dudley, CSIR National Laser Centre (South Africa)

Pulsed laser deposition of Cu/Zn coatings through a mobile prisms set-up

Ferran Cambroneró, F. Rey-García, C. Bao-Varela, R. Lahoz, L. Angurel, L. Estepa, G. F. de la Fuente
Instituto de Ciencia de Materiales de Aragón and Universidade de Santiago de Compostela (Spain)

High-power, high-brightness solar laser approach for renewable Mg recovery from MgO

Joana Almeida, D. Liang
CEFITEC Physics Department, Universidade Nova de Lisboa (Portugal)

Solid-state lighting Mexican regulation: A technical overview (*Canceled*)

Eric Rosas
Centro de Investigaciones en Óptica AC (Mexico)

12:30 - 14:00

Lunch break • Room St. António

14:00 - 14:45

Plenary session III

Room S. Pedro II

Chair: António Baptista, Universidade do Minho (Portugal)

Imaging in the eye: Applications to restoring its focusing ability

Susana Marcos
Instituto de Optica, Consejo Superior de Investigaciones Científicas (Spain)

14:45 - 16:00

Parallel sessions

Tu.3.a • Room S. Pedro II

Chair: Helder Bertolo, Instituto Superior de Engenharia de Coimbra (Portugal)

Prevalence of ametropia in subjects with intellectual disabilities (*Invited*)

António M. Baptista, F. A. Oliveira, A. F. Macedo, P. M. Serra
Universidade do Minho (Portugal)

Construction and validation of a Shack-Hartmann type aberrometer

Luis V. González, J. Ramriez Zavaleta, E. López Olazagasti, S. Balderas Mata, E. Tepichín Rodríguez
Instituto Nacional de Astrofísica, Óptica y Electrónica (Mexico)

Personalized pseudophakic model

Filomena Ribeiro, A. Castanheira-Dinis, J. M. Dias
Hospital da Luz, GoLP/Instituto de Plasmas e Fusão Nuclear Laboratório Associado, Instituto Superior Técnico (Portugal)

An automated tool for tear film distribution maps

Beatriz Remeseiro, M. G. Penedo, C. García-Resúa, E. Yebra-Pimentel
University of A Coruña (Spain)

Detection of spontaneous eye-gestural reaction during an audiometric evaluation

Alba Fernández, M. G. Penedo, J. Doncel, C. Vázquez, L. M. Gigirey
Universidad da Coruña (Spain)

16:00 - 17:00

Coffee break & Poster session Tu.P

17:00 - 18:00

Parallel sessions

Tu.4.a • Room S. Pedro II

Chair: Paulo Fiadeiro, Universidade da Beira Interior (Portugal)

Visual imagery without perception? Lessons from blind subjects (*Invited*)

Helder Bertolo
ISEC (Portugal)

Computerized tool for an automatic break-up assessment

Lucía Ramos, N. Barreira, J. Molinelli, H. Pena-Verdeal, M. Giráldez
Universidad da Coruña (Spain)

Exposure time and illuminance effect on photostress recovery time

Raul A. Sousa, A. C. Silva, V. Fernandes, J. Arroyo, A. F. Macedo, A. M. Baptista
Universidade do Minho (Portugal)

Computerized tool for automatic retinal layer identification in OCT images

Ana Gonzalez, M. Ortega, J. M. Barja, P. Charlón
Universidad da Coruña (Spain)

Tu.3.b • Room S. João

Chair: Peter Andrekson, Chalmers University of Technology (Sweden)

What can you do with optics and photonics in data centers? (*Invited*)

Moisés R. Ribeiro, G. Vassoler
Universidade Federal do Espírito Santo (Brazil)

Performance investigation of energy efficient modulation formats for multi-core fibers

Benjamin J. Puttnam, R. S. Luis, J. Delgado-Mendinueta, J. Sakaguchi, W. Klaus, Y. Awaji, N. Wada, T. Eriksson, E. Agrell, P. Andrekson, M. Karlsson
National Institute of Information and Communications Technology (Japan)

Optimal launch power prediction of a 100G PM-DQPSK dispersion-managed link with the gaussian noise model

Telmo P. Almeida, M. V. Drummond, N. B. Pavlovic, P. S. André, R. N. Nogueira
Instituto de Telecomunicações (Portugal)

Analysis and simulation of ring resonators for slow and fast light devices applications

Hamidreza Khasheji, H. Kaatuzian
Amirkabir University of Technology (Polytechnic of Tehran) (Islamic Republic of Iran)

Tu.4.b • Room S. João

Chair: Aleksander S. Paterno, Universidade Federal de Santa Catarina (Brazil)

Optical glass fiber tips for photonic micro-sensor systems (*Invited*)

Jörg Bierlich, M. S. Silva, M. Becker, K. Schuster, S. Unger, J. Kobelke, J. L. Santos, O. Frazão
Leibniz Institute of Photonic Technology (Germany)

Label free biosensors based on long period gratings coated with sol-gel high refractive index overlays

Raquel B. Queirós, C. Gouveia, S. Jana, P. Biwas, S. Berad, S. Badyopadhyay
INESC TEC (Portugal)

Plastic optical fibre sensor for Madeira wine monitoring

Catarina Novo, L. Bilro, N. Alberto, P. Antunes, R. Nogueira, J. Lemos Pinto
I3N & Department of Physics of Aveiro University (Portugal)

18:30

Moliceiro Trip

16:00 - 17:00

Poster session

Tu.P • Room S. Tomás de Aquino

1. **Parametric impairments analysis of all-optical format conversion techniques with a MZI-SOA**
R. P. Dionísio, R. N. Nogueira, A. J. Teixeira
 2. **Free space optical communications for ultra high capacity PON systems**
A. Shahpari, R. Ferreira, G. Parca, A. Abdalla, M. Lima, A. Teixeira
 3. **Controlled multi-filamentation in fused silica with a spatial light modulator**
J. P. Vizcaíno, R. Borrego-Varillas, O. Mendoza-Yero, G. Minguez-Vega, J. R. Vazquez de Aldana, J. Lánçis
 4. **Ultrashort pulse characterization based on fiber-FROG**
E. A. Wright, M. Facão, G. M. Fernandes, A. N. Pinto
 5. **Power transfer on multicore fibers with long-period gratings**
A. M. Rocha, R. N. Nogueira, M. Facão
 6. **Fiber-optic components for optical communications and sensing**
C. A. Marques
 7. **Conversion gain improvement of HBT-optoelectronic mixers using structural design alteration of device**
E. R. Pashaki, H. Kaatuzian, H. Ghodsi
 8. **Towards a simple, low-cost, do-it-yourself functional NIRS platform**
A. R. Queirós, J. L. Ferreira, H. A. Ferreira
 9. **Real-time upper-body human pose estimation from depth data using Kalman filter for simulator**
Dongjin Lee
 10. **Optimum eye aberration estimators**
S. Bará, E. Pailos, S. Arines
 11. **Optics activity for hospitalized children**
A. Gargallo Fernandez, A. I. Gómez-Varela, H. González-Nuñez, T. Delgado García, C. Almaguer, F. Cambroner, Á. García-Sánchez, M. Flores-Arias
 12. **Contact lenses fitting teaching: Learning improvement with monitor visualization of webcam video recordings**
A. Gargallo Fernandez, J. Arines
 13. **Point diffraction interferometry of spherical fish lenses: Changes in aberrations with lens position**
A. Gargallo Fernandez, J. Arines, E. Acosta
 14. **Hartmann-shack synthetic aperture wavefront sensor (HS-SAWS): Performance dependence on monolithic microlens array arrangement**
J. Arines, S. Bará, E. Pailos
 15. **Automatic walking guide system for the blind**
H. Yoon, J. Kim, M. Chung
 16. **Hyphenated GC-FTIR and GC-MS techniques applied in the analyses of bioactive compounds**
S. Gosav, N. Paduraru, M. Praisler
 17. **FEM simulation and experimental determination of the temperature profile of nanoparticles excited by laser radiation**
N. Rodrigues, J. M. Coelho, C. Rosa
 18. **Surface modification induced by UV nanosecond Nd:YVO4 laser structuring on biometals**
M. Fiorucci, A. López, A. Ramil
 19. **Structural and vibrational characterization of novel flavavones**
S. Gosav, D. Maftéi, N. Paduraru, M. Birsa, M. Praisler
 20. **Laser induced heating of PMMA microspheres for remote drug release – a FEM simulation model**
H. Vilhena, J. M. Coelho, J. M. Rebordão
 21. **Reflection of light: A teaching and learning experience with primary school children**
M. F. Costa, C. Abreu, P. Varela
 22. **Why do shadows change length? An IBSE approach with primary school children**
M. F. Costa, P. Varela, S. Noversa
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Wednesday, 28 May

9:00 - 9:45

Plenary session IV

Room S. Pedro II

Chair: Yoshinari Awaji, National Institute of Information and Communications Technology, Japan

Fiber-optic parametric amplifiers: Characteristics and applications

Peter Andrekson

Chalmers University of Technology (Sweden)

9:45 - 10:45

Parallel sessions

We.1 • Room S. Pedro II

Chair: Manuel P. Graça, Aveiro University (Portugal)

Collective effects in absorption and emission of light in ensembles of nanocrystal quantum dot (*Invited*)

Mikhail Vasilevskiy

Universidade do Minho (Portugal)

Investigation of plasmonic luminescent down shifting layers for the enhancement of solar cell efficiency

Hind Ahmed, J. Doran, S. McCormack

Dublin Institute of Technology (Ireland)

Intermolecular interactions in ternary solutions of some 1,2,4-Triazolium ylids studied by spectral means

Valentina Cloșca, N. Puica Melniciuc, M. L. Ivan, D. O. Dorohoi, A. C. Benchea,

Alexandru Ioan Cuza University (Romania)

SEONS I • Room S. João

Chair: Orlando Frazão, INESC Porto (Portugal)

Sensors based on recycled optical fibers destroyed by the catastrophic fuse effect (*Invited*)

Paulo S. Brito André, P. Antunes, F. Domingues,

N. Alberto, A. R. Frias, M. R. Ferreira

Universidade de Lisboa and Instituto de Telecomunicações (Portugal)

Optical sensing: Fiber structures and interrogation techniques

Joel Carvalho

INESC TEC (Portugal)

Slab waveguide sensors using anisotropic negative index materials

Sofyan A. Taya

Islamic University of Gaza (Palestinian Territory, Occupied)

10:45 – 11:15

Coffee break

11:15 - 12:30

Parallel sessions

We.2.a • Room S. Pedro II

Chair: Manuel Marques, Universidade do Porto (Portugal)

Light pollution: Why should we care? (*Invited*)

Salvador Bará, M. Nievas, A. Sánchez de Miguel, J. Zamorano
Universidad de Santiago de Compostela (Spain)

Study of repeatability of an optical laser system for characterization of the paper fiber distribution and mass density

António de Oliveira Mendes, P. Fiadeiro, A. Costa, M. Amaral, M. Belgacem
Universidade da Beira Interior (Portugal)

A new method to determining the optical rotary dispersion (ORD)

Dana O. Dorohoi, D. D. Dimitriu, I. Cosutchi
Alexandru Ioan Cuza University (Romania)

SEONS II • Room S. João

Chair: José Luis Santos, Universidade do Porto (Portugal)

Optical fiber sensors for refractive index measurement (*Invited*)

Susana Silva, O. Frazão
INESC Porto (Portugal)

Optical fiber sensors for monitoring CO₂ in carbon sequestration applications

Luis B. Melo, G. Burton, S. Warwick, P. Wild
University of Victoria (Canada)

Colorimetric dCO₂ sensor interrogated with a frequency modulated dual-wavelength system

Carlos de Jesus Gouveia, K. Balogh, R. Queirós, B. Kovacs, P. A. Jorge
INESC Porto (Portugal)

We.2.b • Room S. Pedro III

Chair: Mikhail Vasilevskiy, Universidade do Minho (Portugal)

Intense few-cycle mid-IR sources and their application in attoscience (*Invited*)

Michaël Hemmer
ICFO-The Institute of Photonic Sciences (Spain)

Raman studies of tungsten yttrium tellurite glasses as high and broad gain media

Manuel Graça, P. Prezas, J. Suresh, M. Soares
Aveiro University (Portugal)

Ultrafast demagnetization and precessional dynamics in magnetic thin films using a new pump-probe system in the sub-10 femtosecond range

Ana S. Silva, C. S. Gonçalves, D. Navas, H. Crespo, D. S. Schmol IFIMUP-IN, Faculty of Sciences, University of Porto (Portugal)

Top lateral refraction and reflection of polarized light in lenses (*Canceled*)

Lázaro M. Díaz
CEADEN (Cuba)

Remote sensing of atmospheric carbon dioxide with a random modulated CW lidar based on monolithic master-oscillator power

José G. Tijero, I. Esquivias, A. Consoli, M. Quatrevalet, G. Ehret, X. Ai, J. Rarity, M. Krakowski, M. Faugeron, J. Barbero, D. Lopez
CEMDATIC - University Politecnica de Madrid (Spain)

A versatile fluorescence lifetime imaging system for scanning large areas with high time and spatial resolution

Cesar Bernardo, M. Belsley, E. Gomes, H. Gonçalves, D. Isakov, F. Liebold, E. Pereira, V. Pires, A. Samantilleke, M. Vasilevskiy, P. Schellenberg
Centro de Física, Universidade do Minho (Portugal)

12:30 - 14:00

Lunch break • Room St. António

14:00 - 14:45

Tutorial

Room S. Pedro II

Fiber optic biomedical sensors: Principles, trends & applications (*Invited*)

Alexis Mendez
MCH Engineering LLC (USA)

14:45 - 16:00

Parallel sessions

SEONS III • Room S. Pedro II

Chair: Mário Lima, Instituto de Telecomunicações (Portugal)

High-performance imaging using digital and analogue photonic technologies (*Invited*)

Tetsuya Kawanishi, A. Kanno, P. Dat, T. Umezawa
National Institute of Information and Communications Technology (Japan)

100 Gbit/s W-Band OFDM-RoF systems employing optical up-conversion strategies

Maria R. Medeiros, V. Lopes, P. Laurêncio
Instituto de Telecomunicações (Portugal)

Analysis and design of a 1x2 ring resonator-based plasmonic switch

H. Kaatuzian, Mostafa Keshavarz Moazzam
Amirkabir University of Technology (Islamic Republic of Iran)

A note on ultra-short pulses compression in silicon optical waveguides under fourth-order dispersion

L. Mandeng Mandeng, S. Fewo Ibraïd, C. Tchawoua, T. C. Kofané
Université de Yaoundé 1 (Cameroon)

We.3 • Room S. João

Chair: Paulo André, Universidade de Lisboa (Portugal)

Theoretical background of pulsed laser melting in liquid for submicron spherical particle fabrication (*Invited*)

Alexander Pyatenko
National Institute of Advanced Industrial Science and Technology (Japan)

Laser-induced breakdown spectroscopy (LIBS) technique for determination of chemical composition of complex inorganic materials

Łukasz K. Łazarek, A. Antonczak, P. E. Koziol, B. D. Stepak, M. R. Wojcik, K. M. Abramski
Wroclow University of Technology (Poland)

Characterization of self-pulsations in a monolithic master-oscillator power amplifier

Mariafernanda Vilera Suárez, J. García Tijero, A. Consoli, S. Aguilera, I. Esquivias, P. Adamiec
Universidad Politécnica de Madrid (Spain)

14:45 - 18:00

Short course

Room S. Pedro III

Dihedral Fourier analysis (*invited*)

Marlos Viana
University of Illinois at Chicago (USA)

16:00 - 17:00

Coffee break & Poster session We.P

17:00 - 18:00

Parallel sessions

SEONS IV • Room S. Pedro II

Chair: Maria Medeiros, Instituto de Telecomunicações (Portugal)

Mode coupling in few mode optical fibers (*Invited*)

Mourad Zghal

University of Carthage (Tunisia)

Mode conversion based on the acousto-optic effect for mode division transmission systems

Gil Fernandes, N. Muga, A. N. Pinto
Instituto de Telecomunicações (Portugal)

Characteristics study of multimode directional coupler by elliptical point contacts and CMT

Latifah S. Supian, M. Ab-Rahman, N. Arsad

Department of Electrical, Electronics & Systems Engineering, FKAB, UKM and National Defense University of Malaysia (Malaysia)

We.4 • Room S. João

Chair: Salvador Bará, Universidad de Santiago de Compostela (Spain)

The dispersion-scan technique: A new approach for the measurement and control of ultrashort light pulses (*Invited*)

Helder Crespo

Department of Physics & Astronomy and IFIMUP-IN, University of Porto (Portugal)

Laser guiding in plasma waveguides created by femtosecond laser pulses

Nuno R. Lemos, T. Grismayer, L. Cardoso, G. Figueira, J. Dias
UCLA (United States)

Study of the stabilization of a semiconductor mode-lock laser using hybrid mode-lock and optical feedBack

David Alves, M. Abreu, A. Cabral, J. Rebordão

Centre for Astronomy and Astrophysics of the University of Lisbon (Portugal)

18:30

Conference Dinner • Caves Aliança

16:00 - 17:00

Poster session

We.P • Room S. Tomás de Aquino

- Detection of aromatic molecules by surface-enhanced Raman scattering on Au-Ag-C nanoparticles**
A. Kireev, P. Olshin, A. Povolotckaia, A. Manshina, A. Povolotskiy
- Evaluation of polymerization shrinkage of resin cements through in vitro and in situ experiments**
A. G. Franco, L. Z. Karam, C. A. Pulido, O. M. Gomes, H. J. Kalinowski
- Uniform nanocrystalline diamond coatings on optical fibers by using microwave plasma chemical vapor deposition**
M. Granada, C. Tang, A. J. Fernandes, F. Shi, F. Costa, J. L. Pinto
- Guidance features at terahertz spectrum of microstructured fibers filled with silver rods**
M. Cardoso, A. Oliveira Silva, J. C. W. A. Costa
- Fabry-Pérot microcavity strain sensor based on advanced silica tube**
M. S. Ferreira, J. Bierlich, J. Kobelke, K. Wondraczek, C. Aichele, K. Schuster, J. L. Santos, O. Frazão
- Synthesis of gold nanoparticles for application as biosensors in engineering**
A. R. Prado, J. P. Oliveira, B. A. Milaneze, B. V. Nogueira, M. C. Guimarães, L. C. Almeida, A. F. Neto, M. J. Pontes, M. R. Ribeiro
- Gas sensing using wavelength modulation spectroscopy**
D. Viveiros, J. Ribeiro, D. Flores, J. Ferreira, O. Frazão, J. L. Santos, J. M. Baptista
- Cavity ring-down with amplification applied to remote sensing**
D. S. Passos, S. Silva, M. J. Marques, O. Frazão
- Repeatability analysis on LPFGs written by a CO₂ laser**
M. Nespereira, D. Castro Alves, J. M. Coelho, F. Monteiro, M. Abreu, J. M. Rebordão
- Determination of terfenol-D magnetostriction characteristics for sensor application using fiber Bragg grating**
K. D. Sousa, R. Zandonay, E. V. Silva, C. Martelli, J. Cardozo da Silva

11. **Fluid evaporation monitoring with suspended-core fibers**
J. P. Moura, H. Baierl, J. Auguste, R. Jamier, P. Roy, J. L. Santos, O. Frazão
 12. **Theoretical modeling of an U-shaped SPR fiber sensor in 1550 nm spectral range for sensing application**
D. P. Duarte, N. J. Alberto, L. Bilro, R. N. Nogueira
 13. **Development of an optical fiber sensor for detecting hydrogen peroxide using silver nanoparticles**
J. P. Oliveira, A. R. Prado, R. E. Volkers, B. V. Nogueira, M. C. Guimarães, M. Pontes, M. N. Ribeiro
 14. **Thermal monitoring of the thermoplastic injection molding process with FBGs**
N. J. Alberto, R. N. Nogueira, V. F. Neto
 15. **Regeneration of FBGs during the HFCVD diamond-fiber coating process**
N. J. Alberto, H. J. Kalinowski, V. F. Neto, R. N. Nogueira
 16. **Speckle-pattern-based temperature sensor in POF implemented with commodity embedded electronics**
R. E. Volkers, A. F. Neto, M. Ribeiro, M. J. Pontes
 17. **Dual core fiber interferometer as in-line Mach-Zehnder interferometer sensor**
H. F. Martins, J. Bierlich, K. Wondraczek, S. Unger, J. Kobelke, K. Schuster, M. J. Marques, M. Gonzalez-Herraez, O. Frazão
 18. **Remote curvature fiber sensors using core mismatch structures and OTDR based interrogation**
C. S. Fernandes, M. M. Rocco Giraldo, C. J. Gouveia, M. J. de Sousa, J. W. Albuquerque Costa, O. Frazão, P. A. da Silva Jorge
 19. **New optical fiber devices based on focused ion beam**
R. M. André, S. Pevec, M. Becker, J. Dellith, M. Rothhardt, M. B. Marques, D. Donlagic, H. Bartelt, O. Frazão
 20. **Molecularly imprinted polymer grafted on a polymeric optical fiber for ammonium sensing**
F. R. Sequeira, N. Lopes, M. S. Gomes, A. Rudnitskaya, R. Nogueira, L. Bilro
 21. **Electro-optical parameters in excited states of some spectrally active molecules**
V. Closca, C. Rusu, A. C. Benchea, D. O. Dorohoi
 22. **Wavefront shaping using a deformable mirror for focusing inside optical tissue phantoms**
R. Gomes, J. M. Coelho, A. Gabriel, P. Vieira, C. Oliveira Silva, C. Reis
 23. **Analysis of phase interrogated SPR fiber optic sensors with different bimetallic combinations**
H. Moayyed, I. Leite, L. Coelho, J. Santos, A. Guerreiro, D. Viegas
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Thursday, 29 May

9:00 - 10:45

OSA Student Chapter Session

Room S. Pedro II

Chair: Rogério Nogueira, OSA's representative (Portugal)

9:00 - **Presentation of the OSA Student Chapter of University of Aveiro**

9:15 - **Tutorial**

What they don't teach you at university - IP for engineering students (*Invited*)

[Bruce A. Horwitz](#)

TechRoadmap Inc. (USA)

10:00 - **Tutorial**

From technology to product? Fundamental steps (*Invited*)

[Gonçalo Amorim](#)

ISCTE (Portugal)

10:45 – 11:15

Coffee break

11:15 - 12:30

Parallel sessions

Th.1.a • Room S. Pedro II

Chair: Jean Silva, Universidade Tecnológica Federal do Paraná (Brazil)

Fiber optic cryogenic sensors for superconducting magnets and superconducting power transmission lines at CERN
(Invited)

Antonella Chiuchio, M. Bajko, J. Perez, H. Bajas, M. Consoles, M. Giordano, G. Breglio, L. Palmieri, A. Cusano
CERN - European organization for nuclear research (Switzerland)

First setup of the optical fiber measuring system to monitoring structure health of nuclear power plant

Bretislav Mikel, R. Helan, Z. Buchta, M. Holik, M. Jelinek
Institute of Scientific Instruments of the ASCR (Czech Republic)

Preparation and measurement of TFBG based vibration sensor

Radek Helan, F. Urban Jr., B. Mikel, F. Urban Sr.
PROFcomms s.r.o (Czech Republic)

Th.1.b • Room S. João

Chair: Pedro Pombo, University of Aveiro (Portugal)

Revisiting grating orientation effects on visual contrast sensitivity using optical interferometry

P. M. Serra, L. F. Santos, J. P. Corte-Real, Paulo T. Fiadeiro
Universidade da Beira Interior (Portugal)

Development of a micro PET system with improved spatial resolution through depth-of-interaction measurement

Pedro M. Correia, I. F. Castro, J. F. Veloso
University of Aveiro (Portugal)

Study of gastric cancer samples using terahertz techniques

Faustino Wahaja
University of Porto (Portugal)

Study of the fluorescence signal for gastrointestinal dysplasia detection

Sara Pimenta, E. M. Castanheira, G. Minas
University of Minho - Centro Algoritmi (Portugal)

Th.1.c • Room S. Pedro III

Chair: Benjamin Puttnam, NICT (Japan)

Design challenges in unrepeated submarine links
(Invited)

Lutz Rapp
Coriant (Germany)

Performance analysis of multi-pump Raman+EDFA hybrid amplifiers for WDM systems

Márcia da Mota Jardim Martini, M. J. Pontes, M. R. Ribeiro, H. J. Kalinowski
CEFET/MG (Brazil)

Reducing the complexity of digital nonlinear compensation for high-speed coherent optical communication systems

F. Guiomar, Sofia B. Amado, Armando N. Pinto
Instituto de Telecomunicações (Portugal)

Clock and carrier recovery in high-speed coherent optical communication systems

Sofia B. Amado, R. Ferreira, P. F. Costa, F. P. Guiomar, S. Ziaie, N. J. Muga, A. L. Teixeira, A. N. Pinto
Instituto de Telecomunicações (Portugal)

12:30 - 14:00

Lunch break • Room St. António

14:00 - 14:45

Plenary session V

Room S. Pedro II

Chair: Manuel F. Costa, Universidade do Minho (Portugal)

Novel approaches and applications in optical encryption

John Barrera-Ramírez
Universidad de Antioquia (Colombia)

14:45 - 16:00

Parallel sessions

Th.2.a • Room S. Pedro II

Chair: Gonçalo Figueira, Universidade Técnica de Lisboa (Portugal)

Optical fiber sensors in arterial pulse waveform acquisition

Cátia J. Leitão, P. Antunes, J. Mesquita Bastos, J. Lemos Pinto, P. André
I3N and Department of Physics of University of Aveiro and Instituto de Telecomunicações (Portugal)

Th.2.b • Room S. João

Chair: Humberto Michinel, Universidad de Vigo (Spain)

Digitally controlling the 'twist' of light (Invited)

Angela Dudley, A. Forbes
CSIR National Laser Centre (South Africa)

Holography: Applications in science outreach

Pedro M. Pombo, E. Santos
University of Aveiro (Portugal)

FBG's used to measure and compare strains induced by orthodontic devices

Lídia M. Carvalho, A. Santos, P. Roriz, J. Simões, J. Santos, O. Frazão
INESC-Porto (Portugal)

Design and fabrication of a holographic structure with an increase angular and wavelength range of operation for application in solar collectors

Hoda Akbari, I. Naydenova, S. Martin
Dublin Institute of Technology, School of Physics (Ireland)

Fiber optic dosimeter with silicon photomultipliers

Luis Moutinho, F. Castro, L. Peralta, M. C. Abreu, J. F. Veloso
University of Aveiro (Portugal)

Real-time dosimeter targeted to nuclear applications

Alexandre M. Correia, C. C. Rosa, A. N. Falcão, K. Lorentz
INESC Porto (Portugal)

16:00 - 17:00

Coffee break & Poster session Th.P

17:00 - 18:00

SPOF' General Assembly

19:30

OSA Student Chapter Barbecue • University of Aveiro

16:00 - 17:00

Poster session

Th.P • Room S. Tomás de Aquino

- 1. Zernike power spectra of urban light-polluted cloudless night skies**
S. Bará, M. Nievas, A. Sánchez de Miguel, J. Zamorano
- 2. Reinforced adaboost face detector using support vector machine**
J. Jang, J. K., H. Y.
- 3. Resolution analysis in computational imaging with patterned illumination and single-pixel detection**
A. D. Rodriguez, E. Irlles, P. Clemente, J. Lancis
- 4. Comparison of optical methods to measure the thickness of nanometer scale dielectric films**
H. Gonçalves, C. Bernardo, M. Belsley, P. Schellenberg
- 5. Design and optimization of a spectrometer for spectral domain optical coherence tomography**
H. Hosseiny, C. Carmelo Rosa
- 6. Experimental research of methods for image fragments highlighting and clustering using space-invariant equivalency models**
V. G. Krasilenko, A. Lazarev, D. Nikitovich
- 7. Measurement of thickness distribution, optical constants and roughness parameters of rough non-uniform ZnSe thin films**
Ohlídal, D. Necas, D. Franta, M. Ohlídal, V. Cudek, J. Vodák
- 8. Analysis of deformation of a heating body by means of digital holographic interferometry**
N. Budini, C. Mulone, F. M. Vincitorio, A. J. López, A. Ramil
- 9. Morphologic evaluation of thin films by algorithms of optical phase stepping applied to images obtained by interferential microscopy**
V. J. Sarmiento, I. Choque, M. Asmad, G. Baldwin
- 10. SLM-based optical simulator for dynamic speckle analysis**
B. Ivanov, N. Berberova, E. Stoykova
- 11. Real-time method for determination of speckle activity in dynamic speckle patterns**
C. Mulone, N. Budini, F. M. Vincitorio, A. J. López, A. Ramil
- 12. Physic-chemical properties of biodiesel to be subjected to ultraviolet radiation: using thermal lens spectrometry**
F. Gomes Linhares, W. da Costa Silva, V. Haber Perez, M. Silva Sthel, M. Pessanha de Castro, H. Vargas
- 13. Optical spectroscopy in the analysis of Portuguese porous granites**
P. R. Prezas, M. Graça, M. Soares, S. Mendiratta, J. Monteiro, H. Silva
- 14. Optical non-invasive 3D characterization of pottery of pre-colonial Paranaíba valley' tribes**
M. F. Costa, W. Magalhães

- 15. Metameric colors in restoration**
A. Hrib, R. Stanculescu Patru, D. Dorohoi
- 16. Photoelectrochemical solar cells based on conducting polymers, single wall carbon nanotube and fullerene**
L. P. Almeida, A. R. Prado, M. G. de Freitas, M. N. Ribeiro, M. J. Pontes, A. F. Nogueira
- 17. Fill-factor and performance optimization in bulk-heterojunction organic solar cells**
L. R. Pereira, A. J. Trindade, M. G. Santos, J. Gomes
- 18. Influence of a bleaching post-exposure treatment in the performance of H-PDLC devices with high electrical conductivity**
M. Ortuño, A. Marquez, S. Gallego, R. Fernandez, V. Navarro-Fuster, A. Belendez, I. Pascual
- 19. Polymethylmethacrylate (PMMA) doped with trivalent europium ions (Eu³⁺) with luminescent features aimed at polymeric optical fibers (POF)**
A. S. Borges, S. T. Leite, A. F. Neto, M. J. Pontes, M. R. Ribeiro
- 20. Studies of the Yb³⁺, Er³⁺ doping on the glass transition and crystallization kinetic promised for photovoltaic application TeO₂ based glasses**
P. Prezas, M. Graça, M. Valente, P. Bragieli, M. Piasecki, J. Dlugosz
- 21. Effect of Yb³⁺, Er³⁺, Pr³⁺ and Tm³⁺ doping on the third-order nonlinear optical properties of BLFT glasses measured by Z scan**
M. R., J. Dlugosz, S. Jakka, G. M. P. F., S. M. J., V. M. A., P. M.
- 22. Exploration of electrical signal addressing parameters in digital phase-only LCoS devices**
F. J. Martínez, A. Márquez, S. Gallego, M. Ortuño, J. Francés, A. Beléndez, I. Pascual

Friday, 30 May

9:00 - 9:45

Plenary session VI

Room S. Pedro II

Chair: John Barrera-Ramírez, Universidad de Antioquia (Colombia)

Rarefaction pulses and coherent cavitation in liquid light beams

Humberto Michinel, A. Paredes, D. Feijoo
Universidad de Vigo (Spain)

9:45 - 10:45

Parallel sessions

Fr.1.a • Room S. Pedro II

Chair: Lutz Rapp, Coriant (Germany)

On the impact of fiber-delay-lines (FDL) in an all-optical network (AON) bottleneck without wavelength conversion (Invited)

P. Argibay-Losada, Gokhan Sahin
Instituto de Telecomunicações (Portugal)

Energy-aware RWA for IP transport over WDM networks

Miguel Henriques, P. Pinho, A. Teixeira
Instituto Superior de Engenharia de Lisboa (Portugal)

Efficiency analysis on platform over the top (OTT) to deploy content and applications (edutainment) in digital television, on optical network link

William S. Puche, J. E. Sierra, G. A. Moreno
Institución Universitaria Politécnico Colombiano Jaime Isaza Cadavid (Colombia)

Fr.1.b • Room S. João

Chair: Ana Maria Rocha, Instituto de Telecomunicações, Portugal

Solid to liquid light: Soliton dynamics using GPU computing (Invited)

Ariel R. Guerreiro, N. A. Silva
Universidade do Porto and INESC Porto (Portugal)

Optical response of fractal aggregates of polarizable particles

R. Pereira, J. Borges, P. Pereira, G. V. Smirnov, F. Vaz, A. Cavaleiro, Mikhail I. Vasilevskiy
Universidade do Minho (Portugal)

Attenuation in left-handed waveguide structure using equivalent current theory method

H. M. Musa, Mohammad M. Shabat
Islamic University of Gaza (Occupied Palestinian Territory)

10:45 – 11:15
Coffee break

11:15 - 12:30
Closing Session

Room S. Pedro II

The International Year of Light 2015

Mourad Zghal

European Physical Society - EPS

Awards Ceremony

Closing remarks