

Fotonica 2017 AEIT

19^a Edition - Convegno Italiano
delle Tecnologie Fotoniche

PROGRAMME



PADOVA, MAY 3-5, 2017 - CENTRO CULTURALE ALTINATE SAN GAETANO - VIA ALTINATE 71, PADOVA



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Comune di Padova

Fotonica 2017 overview

Wednesday May 3

	• ROOM A		
10.45-11.00	OPENING SESSION		
11.00-13.15	SYMPOSIUM • Broadband Access: an Opportunity for Photonics		
13.15-14.30	LUNCH		
	• ROOM A	• ROOM B	• ROOM C
14.30-16.00	A1. Photonic Devices	B1. Optical Networks	C1. Special Session SIOF/IEEE Photonics
16.00-16.30	COFFEE BREAK		
16.30-17.30	A2. Photonic Devices II	B2. Optical Networks II	C2. Special Session SIOF/IEEE Photonics II
17.30-19.30	P1 Poster Session with Cocktail		

Thursday May 4

	• ROOM A	• ROOM B	• ROOM C
9.00-10.30	A3. Biomedical Imaging and Treatment	B3. Sensors	C3. Sources and Lasers
10.30-11.00	COFFEE BREAK		
11.00-12.45	A4. Nanosensors, Detectors and Sources	B4. Optical Network Devices	C4. Optical Fiber Sensors
12.45-14.00	LUNCH		
	• ROOM A		
14.00-15.30	AEIT-CORIFI - Photonics: Opportunities for Research and Innovation		
15.30-16.00	COFFEE BREAK		
16.00-18.15	A5. Biomedical Sensing	B5. Access and Data-Center Networks	C5. Exhibitor Showcase
19.30	Guided tour to the Orto Botanico and Conference Dinner		

Friday May 5

	• ROOM A	• ROOM B	• ROOM C
9.00-10.30	A6. Spectroscopy	B6. Optical Fibers	C6. Advanced Microscopy
10.30-11.00	COFFEE BREAK		
	• ROOM A		
11.00-12.45	SYMPOSIUM • FOTONICA 4.0		
12.45-14.00	LUNCH		

FOTONICA is the 19th Italian National Conference on Photonic Technologies. The Conference is the meeting place of the Italian Photonic Community where the most advanced achievements of research in photonics are presented and discussed. The Conference covers all aspects of photonics, with a particular emphasis on applications in several fields, including telecom, sensors, energy saving, lighting and health.

FOTONICA will be structured in three days of technical sessions that will include review-papers and original contributions (oral and poster presentations) relevant to the general Conference themes. There will also be plenary sessions, panels and symposia on the state of the art and the future expectations in the field of photonics, including the national and international initiatives under development.

FOTONICA 2017 is aimed at an audience of professionals active in photonics, including researchers, manufacturers and technology users, as well as analysts and investors interested in this sector. Special conditions will apply to encourage the participation of students of specific university courses.

Overview

Executive Committee

A. Galtarossa • *DEI - Università di Padova, Delegato SIEM, Delegato OSA - Chair*
 R. Rella • *CNR-IMM - Vice-Chair*
 F. Baldini • *CNR, Delegato SIOF*
 P. Boffi • *Coordinatore FEO - AICT*
 E. Ciaramella • *SSSUP*
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 M. Martinelli • *AEIT/AICT*
 F. Matera • *FUB*
 G. Notaro • *AEIT*
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 L. Pavesi • *Università di Trento*
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 I. Rendina • *CNR-IMM*
 R. Sabella • *Ericsson*
 S. Selleri • *Università di Parma*
 M. Varasi • *Finmeccanica*

Technical Committee

M. Santagiustina • *DEI - Università di Padova - Coordinator*

1. Communications

S. Abrate • *Istituto Superiore Mario Boella*
 C. Antonelli • *Università dell'Aquila*
 G. Bosco • *Politecnico di Torino*
 G. Bruno • *Ericsson*
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 V. Eramo • *Sapienza Università di Roma*
 O. Michelangeli • *Wind*
 P. Parolari • *Politecnico di Milano*
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 P. Serena • *Università di Parma*
 M. Settembre • *Finmeccanica*
 G. Tartarini • *Università di Bologna*

2. Components and Appliances

G. Assanto • *Università di Roma 3*
 M. Bellini • *CNR*
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 G. Bolognini • *CNR*
 G. Breglio • *Università di Napoli "Federico II"*
 S. Campopiano • *Università di Napoli "Parthenope"*
 G. Chiaretti • *ST Microelectronics*
 A. Chiasera • *IFN-CNR Trento*
 A. Cucinotta • *Università di Parma*

A. Di Donato • *Università Politecnica delle Marche*

P. Galli • *Bell Labs*

A. Marino • *CNR*

S. Merlo • *Università di Pavia*

D. Milanese • *Politecnico di Torino*

F. Morichetti • *Politecnico di Milano*

R.M. Montekali • *ENEA*

L. Palmieri • *Università di Padova*

M. Romagnoli • *CNIT*

F. Romanato • *Università di Padova*

F. Sciarrino • *Sapienza Università di Roma*

C. Sibilia • *Sapienza Università di Roma*

3. Security, Sensors, Industrial Applications and Quality

S. Bollanti • *ENEA*

G. Coppola • *CNR*

A. Cusano • *Università del Sannio*

F. Di Pasquale • *Scuola Superiore Sant'Anna*

M. Ferrari • *CNR*

M.L. Grilli • *ENEA*

A.G. Mignani • *CNR*

A. Minardo • *Seconda Università di Napoli*

M. Paturzo • *CNR*

G. Perrone • *Politecnico di Torino*

F. Poli • *Università di Parma*

P. Proposito • *Università di Roma Tor Vergata*

V. Spagnolo • *Politecnico di Bari*

C. Trono • *CNR*

R. Velotta • *Università di Napoli "Federico II"*

4. Life, Health, Cultural Heritage and Environment, Energy, Space

S. Binetti • *Università Bicocca Milano*

F. Bonfigli • *ENEA*

L. De Stefano • *CNR*

P. Delle Veneri • *ENEA*

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A. Farini • *CNR*

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R. Rella • *CNR*

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L. Sirleto • *CNR*

C. Summonte • *CNR*

P. Taroni • *Politecnico di Milano*

G. Toci • *CNR*

Local Committee

E. Autizi • *DEI - Università di Padova*

M. Meneghini • *DEI - Università di Padova*

L. Poletto • *CNR-Istituto di Fotonica e Tecnologie, Padova*

REGISTRATION FEES

AEIT/CORIFI/IEEE//SIEm/SIOF Members	Euro 440,00
Non Members	Euro 549,00
Researchers Members* (doctorate, post doctorate)	Euro 300,00
Researchers Non Members* (doctorate, post doctorate)	Euro 366,00
Single Day Fee AEIT/CORIFI/IEEE/SIEm/SIOF Members	Euro 250,00
Single Day Fee Non Members	Euro 317,20
Conference Dinner Ticket (Thursday, May 4)	Euro 35,00

Registration Fees include Technical Sessions and Exhibition's Admittance, Conference Contributions, Lunch-Breaks, Coffee-Breaks as indicated in the programme.

Fees for AEIT/CORIFI/IEEE/SIEm/SIOF Members are VAT free (artt. 1 e 4,4 comma e 5 comma - lettera A) del D.P.R. n. 633 DF 26.10.1972. Other Fees include 22% VAT.

** Please provide documents for the status "doctorate/post-doctorate"*

ON SITE SECRETARIAT

The Conference Secretariat will be open on site as follows:

Wednesday, May 3, 2017 8,30 - 19,30

Thursday, May 4, 2017 8,30 - 18,15

Friday, May 5, 2017 8,30 - 14,30

EXHIBITION

The Exhibition will be opened as follows:

Wednesday, May 3, 2017 10,30 - 19,30

Thursday, May 4, 2017 9,00 - 18,00

Friday, May 5, 2017 9,00 - 14,00

BADGES

Personalised identification badges for the conference duly-registered participants will be distributed at the Registration Desk. Badges permit the Admittance to Technical Sessions and Exhibition, Lunch-Breaks, Coffee-Breaks, as indicated in the programme. Please wear your badge at all times during the conference.

STUDENTS

The Executive Committee reserves special conditions for the attendance of students of specific university courses.

SOCIAL EVENT

Thursday, May 4, 2017 - 19,30

Guided tour to the "Botanical Garden of Padova" and Conference Dinner

Created in 1545 on the property of the Benedictine monks of St. Justine, the Botanical Garden of Padova is the oldest existing university botanical garden in the world. UNESCO World Heritage.

A guided tour will be offered to all participants who have reserved for the Conference Dinner. **Entrance: Via Prato della Valle 58.**

CONFERENCE VENUE

Centro Culturale Altinate/San Gaetano

Via Altinate 71, 35121 Padova, Italy

SECRETARIAT

AEIT - Associazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni - Ufficio Centrale, Via Mauro Macchi, 32 20124 Milano, Italy Tel. +39 02 87389965 - Fax +39 02 66989023 Email: fotonica@aeit.it

Wednesday, May 3, 2017

10,45-11,00 • OPENING

ROOM A

11,00-13,15 • Plenary Session

ROOM A

Symposium

Broadband Access: an Opportunity for Photonics

The national plan for broadband access could represent a growing opportunity for the Italian photonics. The symposium is dedicated to explore this issue through two plenary presentations as well as a panel discussion.

The first presentation holds an international prospective and will be carried out by Valey Kamalov of Google with the title: "Innovation drivers of optical networking".

The second presentation focuses on specific Italian situation and will be given by Fabrizio Gradassi, OpEn Fiber, with the title: "The Open Network Fiber for Italy".

At two presentations will follow a round table (coordinated by prof. Carlo Giacomo Smeda) which will see the participation of major players in the field of the broad-band, namely: CISCO, HUAWEY, SMO, OpEn Fiber and SITE.

11,00 • Keynote Speech

Innovation Drivers of Optical Networking

Valey Kamalov - *Google*

11,40 • Keynote Speech

La rete di OpEn Fiber per l'Italia

Fabrizio Gradassi - *OpEn Fiber*

12,10 • Round Table

Chair: Carlo Smeda - *GHT Photonics*

Panel

Claudio Bettini - *Site*

Claudio Coltro - *Huawei*

Giorgio Cazzaniga - *SM-Optics*

Fabrizio Gradassi - *OpEn Fiber*

Mauro Macchi - *Cisco*

13,15-14,30 • Lunch Break

14,30 • SESSION A1 • PHOTONIC DEVICES

ROOM A

Chair: A. Chiasera - *IFN-CNR Trento*

A1 • 1 Second Harmonic Generation in Strained Silicon Waveguides

A. Marchesini, A. Trenti, M. Mancinelli, C. Castellan - *Università di Trento*, M. Ghulinyan - *Fondazione Bruno Kessler*, L. Pavesi - *Università di Trento*

A1 • 2 Novel Actuator Technologies for Silicon Photonics Waveguides

S. Varotto, M. Asa, R. Bertacco - *Politecnico di Milano*, A. Buchheit, H.D. Wiemhöfer, M. Muñoz Castro - *University of Münster, Germany*, C. Klitis, M. Sorel - *University of Glasgow, UK*, M. Mishra - *University of Calcutta, India and Politecnico di Milano*, F. Morichetti - *Politecnico di Milano*

A1 • 3 Low-Loss Integrated Micro-Resonator Filters Fabricated by Standard CMOS-Technology

R. Marchetti, V. Vitali - *Università di Pavia*, C. Lacava - *Università di Pavia and University of Southampton, UK*, I. Cristiani, G. Giuliani, P. Minzioni - *Università di Pavia*

A1 • 4 Mid-Infrared Photodetector Based on Pyro-Resistive Effect of Graphene on LiNbO₃

K.K. Gopalan - *The Barcelona Institute of Science and Technology, Spain*, D. Janner - *Politecnico di Torino*

A1 • 5 Longitudinal Writing of Vertical Waveguides in Fused Silica: Toward new Integrated Photonic Technologies

D.P. Lopes - *Politecnico di Milano and IFN-CNR, Milano*, R. Martinez Vasquez - *IFN-CNR, Milano*, S. Tirelli, L. Tallone, M. Romagnoli - *CNIT*, R. Osellame - *Politecnico di Milano and IFN-CNR, Milano*

A1 • 6 Emitters Interaction with Nanohole Arrays

N. Michieli, B. Kalinic, T. Cesca, G. Mattei - *Università degli Studi di Padova*

14,30 • SESSION B1 • OPTICAL NETWORKS

ROOM B

Chair: C. Antonelli - *Università dell'Aquila*

B1 • 1 Invited

Evolution of Software-Defined Networking for Transport Networks

R. Alvizu, G. Maier - *Politecnico di Milano*, R. Morro, A. Capello, C. Cavazzoni - *Telecom Italia*

B1 • 2 A Novel Adaptive Restoration Algorithm for Cost Minimization of Translucent Optical Networks

C. Toscano, A. Paparella, A. Morea - *Nokia ION*, M. Tornatore - *Politecnico di Milano*

B1 • 3 Identification of Internet Traffic Patterns for Dynamic Reconfigurations of Optical Metro-Networks

S. Troia - *Politecnico di Milano*, G. Sheng - *Beijing University of Posts and Telecommunications, China*, R. Alvizu, G. Maier, A. Pattavina - *Politecnico di Milano*

B1 • 4 Networking Benefits of Advanced DSP Techniques

A. Ferrari, M. Cantono, V. Curri - *Politecnico di Torino*

B1 • 5 Optical Network Design in Content Center Network Scenario

F. Matera - *Fondazione Ugo Bordoni, Italy*, E. Nistri - *ISCOM, Rome*

14,30 • SESSION C1 • SPECIAL SESSION SIOF/IEEE PHOTONICS

ROOM C

Chair: R. Rella - *CNR*

C1•1 Low Losses Plasmonics with Hybrid Photon Gap-Plasmon States

F. Todisco, M. Esposito - *CNR-Nanotec, Lecce*, A.I. Fernández-Domínguez - *Universidad Autónoma de Madrid, Spain*, M. De Giorgi - *CNR-Nanotec, Lecce*, C. Ciraci - *Istituto Italiano di Tecnologia*, G. Gigli, D. Sanvitto - *CNR-Nanotec, Lecce*

C1•2 Silk Based Nanocomposites for Biophotonic and Plasmonic Devices

E. Colusso - *Università di Padova*, P. Minzioni - *Università di Pavia*, G. Perotto - *Istituto Italiano di Tecnologia*, F. Omenetto - *Tufts University, USA*, A. Martucci - *Università di Padova*

C1•3 Design and Numerical Simulation of a NIR Plasmonic Grating for Silicon Single-Photon Photodetectors Performance Enhancement

A. Filippi - *University of Padova and Fondazione Bruno Kessler*, E. Gazzola - *University of Padova*, G. Paternoster, P. Belluti - *Fondazione Bruno Kessler*, F. Romanato - *University of Padova and CNR-IOM, TASC, Trieste*

C1•4 EIT-Like All-Dielectric Metamaterials with Phase Changing Layers for All-Optical Switching Applications

E. Petronijevic, C. Sibilìa - *Sapienza University of Rome*

C1-5 Sub-Wavelength Slit and Plasmonic Grating Integration in Ge-Based Metal-Semiconductor-Metal Photodetectors for Sensing Application

M. Lodari, P. Biagioni, G. Isella - *Politecnico di Milano and Istituto di Fotonica e Nanotecnologie, Consiglio Nazionale delle Ricerche, Milano*, M. Bollani - *Istituto di Fotonica e Nanotecnologie, Consiglio Nazionale delle Ricerche, Milano*

C1-6 Heavily-Doped Ge for Plasmonics and Sensing in the Mid-Infrared

G. Pellegrini - *Politecnico di Milano*, L. Baldassarre, V. Giliberti - *Sapienza Università di Roma and Istituto Italiano di Tecnologia*, J. Frigerio - *Politecnico di Milano*, K. Gallacher, D.J. Paul - *University of Glasgow, UK*, G. Isella - *Politecnico di Milano*, M. Ortolani - *Sapienza Università di Roma*, P. Biagioni - *Politecnico di Milano*

16,00-16,30 • Coffee Break**16,30 • SESSION A2 • PHOTONIC DEVICES II****ROOM A**

Chair: G. Grasso - *Fondazione CIFE*

A2 • 1 Invited**Mirrors and Optical Retracing Circuits: a Unified Vision**

M. Martinelli, P. Martelli - *Politecnico di Milano*

A2 • 2 Charge-Exciton Interaction Rate in Organic Field-Effect Transistors by Transient Photoluminescence Electromodulated Spectroscopy

W.A. Koopman - *CNR-ISMN, Bologna and Universität Potsdam, Germany*, M. Natali, M. Mucini, S. Toffanin - *CNR-ISMN, Bologna*

A2 • 3 Active WO₃ Nanostructured Films: RF-Sputtering Deposition, Optical, Structural and Spectroscopic Assessment

A. Chiasera - *IFN - CNR & FBK, Trento*, F. Scotognella - *Politecnico di Milano, IFN-CNR, Milano and Center for Nano Science and Technology@PoliMi, IIT, Milano*, S. Pietralunga - *IFN - CNR and Politecnico di Milano*, G. Speranza - *FBK and IFN - CNR, Trento*, C. Armellini - *IFN - CNR & FBK CMM, Trento*, L.T.N. Tran - *Trento University, Ho Chi Minh City University, Vietnam and IFN - CNR & FBK, Trento*, S. Varas - *IFN - CNR & FBK, Trento*, L. Zur - *Centro di Studi e Ricerche Enrico Fermi and IFN - CNR & FBK, Trento*, G. Righini - *Centro di Studi e Ricerche Enrico Fermi*, S. Taccheo - *Swansea University, UK*, D. Zonta - *Trento University, IFN - CNR & FBK, Trento and University of Strathclyde, UK*, R. Ramponi - *IFN - CNR and Politecnico di Milano*, M. Ferrari - *IFN - CNR & FBK, Trento and Centro Studi e Ricerche Enrico Fermi*

16,30 • SESSION B2 • OPTICAL NETWORKS II**ROOM B**

Chair: G. Bosco - *Politecnico di Torino*

B2 • 1 Kramers-Kronig Transceiver: a Coherent Transmission Scheme Based on Direct Detection

A. Mecozzi, C. Antonelli - *University of L'Aquila*, M. Shtaif - *Tel Aviv University, Israel*

B2 • 2 Long-Haul Propagation Experiments using PM-64QAM Constellations with Probabilistic Shaping

L. Bertignono, D. Pileri - *Politecnico di Torino*, A. Nespola - *Istituto Superiore Mario Boella*, F. Forghieri - *Cisco Photonics Italy*, G. Bosco - *Politecnico di Torino*

B2 • 3 Beneficial Effect of Strong Mode Coupling on the Nonlinear Performance of Space Division Multiplexed Transmission

C. Antonelli, A. Mecozzi - *University of L'Aquila*, M. Shtaif - *University of Tel Aviv, Israel*

B2 • 4 Low-cost Optical Wireless Communication System for Video Signal Distribution in the LUMENTILE™ Project

M. Simonetta, L. Carraro, G. Benetti, A. Tramonte, G. Capelli - *Università di Pavia*, M. Benedetti, E. Randone - *Julight*, T. Facchinetti, G. Giuliani - *Università di Pavia*

16,30 • SESSION C2 • SPECIAL SESSION SIOF/IEEE PHOTONICS II

ROOM C

Chair: P. Biagioni - *Politecnico Milano*

C2-1 Slotting Effect on Nano Patch Antenna for MID-IR Application

R. Citroni, A. Leggieri, D. Passi, F. Di Paolo, A. Di Carlo - *University of Rome Tor Vergata*

C2-2 Tin Dioxide based Photonic Systems

L.T.N. Tran - *IFN-CNR and FBK, Trento and Ho Chi Minh City University, Vietnam*, M. Meneghetti - *Université de Rennes, France*, L. Zur - *Centro di Studi e Ricerche Enrico Fermi and IFN-CNR and FBK, Trento*, A. Chiasera, C. Armellini, A. Chiappini, S. Varas - *IFN-CNR and FBK, Trento*, T.T.V. Tran - *Vietnam National University, Vietnam*, A. Vaccari - *FBK, Trento*, A. Lukowiak - *Polish Academy of Sciences, Poland*, D. Zonta - *University of Trento, IFN-CNR and FBK, Trento and University of Strathclyde, UK*, R. Ramponi - *IFN-CNR and Politecnico di Milano*, G.C. Righini - *Centro di Studi e Ricerche Enrico Fermi and IFAC - CNR, Sesto Fiorentino*, M. Ferrari - *IFN-CNR and FBK, Trento and Centro di Studi e Ricerche Enrico Fermi*

C2-3 IEEE Best PhD Thesis Award 2016

Digital Holography Microscopy at Lab-on-a-Chip Scale: novel algorithms and recording strategies

M. Paturzo, V. Bianco - *ISASI-CNR*

17,30-19,30 • POSTER SESSION with Cocktail

Chair: M. Santagiustina - *Università di Padova*

P1-1 Multilevel Pulse Width Modulation Fibre Optic Transmission for Next-Gen Fronthaul

A. Gatto, P. Parolari, L. Combi, P. Boffi, M. Martinelli, U. Spagnolini - *Politecnico di Milano*

P1-2 Influence of Gate Oxide on Infrared Photoresponse of Graphene Field Effect Transistors

A. Benfante, M.A. Giambra, R. Pernice - *University of Palermo*, W.H.P. Pernice - *Karlsruhe Institute of Technology, Germany*, R. Krupke - *Karlsruhe Institute of Technology and Technische Universität Darmstadt, Germany*, R. Danneau - *Karlsruhe Institute of Technology, Germany*, E. Calandra, S. Stivala, A.C. Busacca - *University of Palermo*

P1-3 Routing Space Size Estimation for Reconfigurable Optical Networks

A. Ferrari, M. Cantono, V. Curri - *Politecnico di Torino*

P1-4 SNAP-Driven Updates of Physical Layer to Improve Performances of Photonic Networks

M. Cantono, A. Ferrari, V. Curri - *Politecnico di Torino*

P1-5 Effect of Saturation Velocity in Germanium p-i-n Photodetectors

A. Palmieri, M. Vallone, M. Calciati - *Politecnico di Torino*, F. Bertazzi, M. Goano - *Politecnico di Torino and IEIIT-CNR, Torino*, G. Ghione - *Politecnico di Torino*

P1-6 Statistical Analysis of Differential Group Delay in Few-Mode Spun Optical Fibres

G. Guerra, L. Palmieri, M. Santagiustina, A. Galtarossa - *University of Padova*

P1-7 High-Efficiency Cr²⁺:CdSe Laser at 2.65 μm

T. T. Fernandez, Y. Wang - *Politecnico di Milano*, M.K. Tarabrin - *Bauman Moscow State Technical University and Russian Academy of Sciences, Russia*, A. Lazarev, S.O. Leonov, V.A. Karasik - *Bauman Moscow State Technical University, Russia*, Y.V. Korostelin, V.I. Kozlovsky - *Russian Academy of Sciences, Russia*, C. Svelto - *Politecnico di Milano*, N. Coluccelli, P. Laporta, G. Galzerano - *Politecnico di Milano and Istituto di Fotonica e Nanotecnologie - Consiglio Nazionale delle Ricerche, Milano*

P1-8 “Extrinsic Optical Chirality” and Resonant Absorbption in Gaas-Based Nanowires Investigated by Photo-Acoustic Spectroscopy

E. Petronijevic, G. Leahu, A. Belardini, M. Centini, R. Li Voti, C. Sibilia - *Sapienza University of Rome*, T. Hakkarainen, E. Koivusalo - *Tampere University of Technology, Finland*, M. Rizzo Piton - *Tampere University of Technology, Finland and Universidade Federal de São Carlos, Brazil*, S. Suomalainen, M. Guina - *Tampere University of Technology, Finland*

P1-9 Monitoring and Studying Rock Movements using a tri-axial Fiber Bragg Grating Strain Sensor

U. Giacomelli, N. Beverini - *Università di Pisa*, D. Carbone - *INGV - Osservatorio Etneo, Catania*, G. Carelli, F. Francesconi - *Università di Pisa and Marwan Technology*, S. Gambino - *INGV - Osservatorio Etneo, Catania*, E. Maccioni - *Università di Pisa*, M. Morganti - *Istituto Nazionale di Fisica Nucleare, Pisa and Accademia Navale di Livorno*, M. Orazi, R. Peluso - *INGV - Osservatorio Vesuviano, Napoli*, F. Sorrentino - *Istituto Nazionale di Fisica Nucleare, Genova and Marwan Technology*

P1-10 Distributed Measurement of Birefringence in Polarization-Maintaining Fibers

R. Veronese, L. Palmieri, M. Santagiustina, A. Galtarossa - *University of Padova*

P1-11 Versatile Quantum Random Number Generation for Timed Foundation Quantum Mechanics Experiments

A. Stanco, D.G. Marangon, G. Vallone, P. Villoresi - *University of Padova*

P1-12 Single-Molecule Hybrid Devices for Efficient Light-Matter Interaction

M. Colautti - *LENS, Sesto Fiorentino, Università di Firenze and Centre for Quantum Science and Technology in Arcetri*, P. Lombardi - *LENS, Università di Firenze*, S. Checcucci - *LENS, Sesto Fiorentino, Università di Firenze, CNR-INO, Florence and Centre for Quantum Science and Technology in Arcetri*, S. Pazzagli - *LENS, Sesto Fiorentino and Università di Firenze*, G. Kewes, O. Benson - *Humboldt-Universität zu Berlin, Germany*, M. Agio - *University of Siegen, Germany*, W.H.P. Pernice - *University of Muenster, Germany*, F.S. Cataliotti, F. Caruso - *LENS, Sesto Fiorentino, Università di Firenze and Centre for Quantum Science and Technology in Arcetri*, C. Toninelli - *LENS, Sesto Fiorentino, National Institute of Optics (CNR-INO), Florence and Centre for Quantum Science and Technology in Arcetri*

P1-13 FTTH Networks: Miniturization of the Materials and Types of Optical Fibres

M. Tarsi - *Telecom Italia*

P1-14 Turbulence Effects Reduction in high Performance Free-Space Optical Communication

L. Bancallari - *MBDA Italia*, J. Mocci - *University of Verona*, F. De Simio, S. Firpi - *MBDA Italia*, M. Quintavalla, S. Bonora - *CNR-IFN, Padova*, R. Muradore - *University of Verona*

P1-15 Microfluidic-Optical System for Holographic Sensor - Realization and Application

G. Bianco, S. Torino, M.A. Ferrara - *National Research Council, Institute for Microelectronics and Microsystems, Naples*, F. Borbone, R. Centore - *University of Naples Federico II, V. Striano - OHBItalia*, G. Coppola - *National Research Council, Institute for Microelectronics and Microsystems, Naples*

P1-16 Lighting Technologies and Computer Vision Algorithms Applied to Ovens: a Preliminary Study

K. Tragni, A. Cucinotta, S. Selleri - *University of Parma*

P1-17 Density Functional Tight Binding Method for Metal-Molecule Interactions

S. D'Agostino - *Center for Biomolecular Nanotechnologies@UNILE, Istituto Italiano di Tecnologia and TU Dresden, Germany*, F. Della Sala - *Center for Biomolecular Nanotechnologies@UNILE, Istituto Italiano di Tecnologia, Italy and Institute for Microelectronics and Microsystems (IMM-CNR), Lecce*

P1-18 Design of a Light Management System for Backlighting Applications with large Area and Reduced Thickness

L. Carraro - *Università di Pavia, A. Mayra - Technological Research Centre of Finland, Finland, M. Simonetta, G. Benetti, A. Tramonte - Università di Pavia, M. Benedetti, E. Randone - Ju-light, A. Ylisaukko-Oja, K. Keranen - Technological Research Centre of Finland, Finland, T. Facchinetti, G. Giuliani - Università di Pavia*

P1-19 Laser Performance of Yb:LuYAG Ceramics with Different Concentration of Dopands

A. Pirri - *IFAC-CNR, Sesto Fiorentino, G. Toci - INO-CNR, Sesto Fiorentino, J. Li, T. Xie, Y. Pan - Chinese Academy of Sciences, China, V. Babin, A. Beitlerova, M. Nikl - Academy of Sciences of the Czech Republic, Czech Republic, M. Vannini - INO-CNR, Sesto Fiorentino, Italy*

P1-20 3D EBL Fabrication of High-Quality Spiral Phase Plates and Diffractive Optical Elements

M. Massari, G. Ruffato, M. Gintoli, F. Romanato - *University of Padova and LaNN Laboratory for Nanofabrication of Nanodevices, Padova*

P1-21 Semi-Classical Nonlocal Effects in the weak and strong Coupling Regimes

R. Jurga - *Istituto Italiano di Tecnologia (IIT) and Università del Salento, S. D'Agostino - Istituto Italiano di Tecnologia (IIT), F. Della Sala - Istituto Italiano di Tecnologia (IIT) and Institute for Microelectronics and Microsystems (IMM-CNR), Lecce, C. Ciraci - Istituto Italiano di Tecnologia (IIT)*

P1-22 BST Characterization for High-Speed Electro-Optic Devices

P. Martelli, A. Fasiello, P. Boffi, M. Brunello, A. Gatto, M. Martinelli - *Politecnico di Milano, S. Kondo, T. Yamada - Nagoya University, Japan, P. Ma, O. Leuthold - ETH Zurich, Switzerland*

P1-23 Spectroscopic Characterization and Laser Emission of 2at.% Yb:GaGG Crystal

G. Toci - *INO-CNR, Sesto Fiorentino, A. Pirri - IFAC-CNR, Sesto Fiorentino, W. Ryba-Romanowski, M. Berkowski - Polish Academy of Sciences, Poland, M. Vannini - INO-CNR, Sesto Fiorentino*

P1-24 Multipath Interference in Passive Optical Networks Components

J. Gutierrez, M. Olivero, R. Orta, G. Perrone - *Politecnico di Torino*

P1-25 Development of a Multiphoton-Multicolor and Super-Resolution STED Microscope for In Vivo Experiments

M. Gintoli - *University of Padua, A. Filippi - University of Padua and Fondazione Bruno Kessler, M. Carli - University of Padua, V. Scattolini - Venetian Institute of Molecular Medicine and University of Padua, C.D. Ciubotaru - Venetian Institute of Molecular Medicine and CNR Institute of Neurosciences, Padua, C. Nardin - University of Roma Tre and CNR Institute of Cell Biology and Neurobiology, Monterotondo, Roma, A. Leparulo - University of Padua, N. Kaludercic - CNR Institute of Neurosciences, Padua, A. Avogaro, G.P. Fadini - Venetian Institute of Molecular Medicine and CNR Institute of Neurosciences, Padua, M. Bortolozzi - University of Padua and Venetian Institute of Molecular Medicine, F. Mammano - University of Padua and CNR Institute of Cell Biology and Neurobiology, Monterotondo, Roma, F. Romanato - University of Padua and LaNN, Laboratory for Nanofabrication of Nanodevices, Padova*

P1-26 One Diode Circuitual Model of Light Soaking Phenomena in Dye-Sensitized Solar Cells

A. Laudani, F. Riganti Fulginei, A. Salvini - *Università degli Studi Roma Tre, A. Parisi, R. Pernice - Università di Palermo, F. Ricco Galluzzo - IMM-CNR, Catania, A.C. Cino, A.C. Busacca - Università di Palermo*

P1-27 TIP Enhanced Raman Spectroscopy of HYPF-N Oligomers

C. D'Andrea - *Institute of Applied Physics "Nello Carrara", CNR, Sesto Fiorentino, A. Foti - Institute for Chemical and Physical Processes, CNR, Messina, M. Cottat - Institute of Applied Physics "Nello Carrara", CNR, Sesto Fiorentino, F. Chiti - University of Florence, R. Pini - Institute of Applied Physics "Nello Carrara", CNR, Sesto Fiorentino, P.G. Gucciardi - Institute for Chemical and Physical Processes, CNR, Messina, P. Matteini - Institute of Applied Physics "Nello Carrara", CNR, Sesto Fiorentino*

P1-28 Direct Laser Writing of PEGDa Scaffolds for Tissue Engineering

F. Mochi, F. De Matteis, P. Proposito, R. Francini, M. Lucci, P. Di Nardo, F. Carotenuto, M. Casalboni - *University of Rome Tor Vergata, Rome*

P1-29 Novel Approaches to Photon Detection and Timing for 7-Wavelength Time Domain Optical Mammography

E. Ferocino, E. Martinenghi, A. Dalla Mora - *Politecnico di Milano, A. Pifferi, R. Cubeddu, P. Taroni - Politecnico di Milano and National Research Council - Institute for Photonics and Nanotechnologies, Milano*

P1-30 Photonics in Agriculture: the FOSS4I Project in Lebanon

G. Breglio - *University of Naples Federico II and Optosmart, S. Buontempo - European Organization for Nuclear Research (CERN), Switzerland and Istituto Nazionale di Fisica Nucleare (INFN), Napoli, M. Consales, A. Cusano, A. Cutolo - University of Sannio, M. Gastal - European Organization for Nuclear Research (CERN), Switzerland, I. Jomah - Lebanese Agriculture Research Institute (LARI), Lebanon, A. Laudati - Optosmart, A. Youssef, A. Zaraket, H. Zaraket - Lebanese University, Lebanon*

P1-31 TDLAS as a Method for the Diagnosis of Helicobacter Pylori

L. Cocola, A. Ghetti - *CNR-IFN, Padova, G. Tondello - CNR-IFN, Padova and LPRO, G. Galzerano - CNR IFN, Milano, L. Poletto - CNR-IFN, Padova*

P1-32 Compatibility Analysis Between AGL Systems and Night Vision Googles

A. Facchinetti Forlani - *Sapienza University of Rome, D. Roncati - Progettazione Ottica Roncati, M. Mazzotti - OCEM Airfield Technology, U. Grasselli - Sapienza University of Rome*

P1-33 Blade-Coated Large Area Perovskite Solar Cells Fully Processed at Ambient Condition

L. Vesce, F. Matteocci, A.L. Palma, A. Di Carlo - *University of Rome Tor Vergata*

P1-34 Optical Modelling of Hybrid Nanoparticles for Theranostic Applications

C. Forestiere - *Università di Napoli Federico II, I. Rea, R. Moretta, M. Terracciano - IMM-CNR, Napoli, J. Spadavecchia - CNRS, Parigi, France, L. De Stefano - IMM-CNR, Napoli*

P1-35 Optical Manipulation of the Cardiac Conduction Pathway Using a Digital Micro-Mirror Device

E. Margoni - *European Laboratory for Non-Linear Spectroscopy (LENS), Florence, S. Cannizzaro - National Institute of Optics (INO) - National Research Council (CNR), Florence, C. Crocini - European Laboratory for Non-Linear Spectroscopy (LENS), Florence, C. Ferrantini, E. Cerbai, C. Poggese - University of Florence, F.S. Pavone - European Laboratory for Non-Linear Spectroscopy (LENS), Florence and University of Florence, L. Sacconi - European Laboratory for Non-Linear Spectroscopy (LENS), Florence and National Institute of Optics (INO)-National Research Council (CNR), Florence*

P1-36 Back Grating Optimization for Light Trapping in thin-Film Quantum Dot Solar Cells

F. Elsehrawy, F. Cappelluti - *Politecnico di Torino, T. Aho, T. Niemi, V. Polojärvi, M. Guina - Tampere University of Technology, Finland*

P1-37 Functionalization of Macroporous Silicon for Optical Detection of Bacteria

R. Moretta, M. Terracciano, I. Rea, M. Casalino, P. Dardano, L. De Stefano - *IMM-CNR, Napoli*

P1-38 Silicon Quantum Dot for Multispectral In Vivo Nanoimaging

R. Moretta, M. Terracciano, I. Rea - *IMM-CNR, Napoli, T. Defforge - CNRS, Tours, France, S. Vijayakumar - CNRS, Tours, France and McGill University, Canada, G. Gautier - CNRS, Tours, France, L. De Stefano - IMM-CNR, Napoli*

P1-39 Photovoltaic Parameters of Perovskite Solar Cells in high Humidity Environment

V. La Ferrara, A. De Maria, G. Rametta, L.V. Mercaldo, A. Bruno, P. Delli Veneri - *ENEA, Portici*

P1•40 Combined Fluorescence and Raman Spectroscopy for the Detection of Focal Cortical Dysplasia in Pediatric Subjects

S. Anand, R. Cicchi - *National Institute of Optics-National Research Council (INO-CNR), Sesto Fiorentino and European Laboratory for Non-Linear Spectroscopy (LENS), Sesto Fiorentino*, F. Giordano, V. Conti - *A. Meyer Children's Hospital, Florence*, A.M. Buccoliero, R. Guerrini - *University of Florence*, F.S. Pavone - *European Laboratory for Non-Linear Spectroscopy (LENS), Sesto Fiorentino, National Institute of Optics, National Research Council, Sesto Fiorentino and University of Florence*

P1•41 Analysis of Biological Microstructures by Stimulated Raman Microscopy

A. D'Arco, M.A. Ferrara - *National Research Council (CNR), Institute for Microelectronics and Microsystems, Naples*, A. Filograna - *National Research Council (CNR), Institute of Protein Biochemistry, Naples*, M. Indolfi, D. Passaro, V. Tufano - *National Research Council (CNR), Institute for Microelectronics and Microsystems, Naples*, C. Valente - *National Research Council (CNR), Institute of Protein Biochemistry, Naples*, L. Sirleto - *National Research Council (CNR), Institute for Microelectronics and Microsystems, Naples*

P1•42 Characterization of the Metabolic Conditions of Zebrafish Embryos by Two-Photon Excited Fluorescence Microscopy

C. Giubani, G. Marchetto - *European Laboratory for Non-Linear Spectroscopy, Sesto Fiorentino*, F. Vanzi - *National Institute of Optics, National Research Council, Sesto Fiorentino and University of Florence*, R. Cicchi - *European Laboratory for Non-Linear Spectroscopy, Sesto Fiorentino and National Institute of Optics, National Research Council, Sesto Fiorentino*, F.S. Pavone - *European Laboratory for Non-Linear Spectroscopy, Sesto Fiorentino, National Institute of Optics, National Research Council, Sesto Fiorentino and University of Florence*

P1•43 Picosecond Laser Scribing of CIGS Solar Cells

F. Bissoli - *Consiglio Nazionale delle Ricerche IMEM, Parma*, F. Poli, A. Cucinotta, S. Selleri - *University of Parma*, E. Gilioli - *Consiglio Nazionale delle Ricerche IMEM, Parma*

P1•44 How to Extend the Flight Time and Range of Nano-Drones

R. Citroni, A. Leggieri, D. Passi, F. Di Paolo, A. Di Carlo - *University of Rome Tor Vergata*

P1•45 Melanoma Cell Lines Discrimination Through Raman Spectroscopy

E. Baria - *European Laboratory for Non-Linear Spectroscopy, Sesto Fiorentino*, R. Cicchi - *European Laboratory for Non-Linear Spectroscopy, Sesto Fiorentino and National Institute of Optics, National Research Council, Florence*, F. Malentacchi, I. Mancini, P. Pinzani, M. Pazzagli - *University of Florence*, F.S. Pavone - *European Laboratory for Non-Linear Spectroscopy, Sesto Fiorentino, National Institute of Optics, National Research Council, Florence and University of Florence*

P1•46 Evaluation via ESPI of Delamination on GFRP Laminates Impacted at Room and Lower Temperatures

V. Pagliarulo - *CNR-ISASI, Pozzuoli*, V. Lopresto, I. Papa - *University of Naples Federico II*, P. Ferraro - *CNR-ISASI, Pozzuoli*

P1•47 Analysis of Wavelength Multiplexing Approaches for high Power Multi-Emitter Semiconductor Laser Modules

M. Azzena, H. Yu - *Politecnico di Torino*, G. Rossi, A. Braglia - *OPI Photonics*, R. Orta, G. Perrone - *Politecnico di Torino*

P1•48 Photonic Sensing Systems for the Mitigation of Risks Associated with Landslides: the OPTOFER Project

F.A. Bruno, M. Leone, S. Principe, A. Catalano, P. Mattera, R. Parente, M. Pisco, M. Consales, A. Cutolo, A. Cusano - *University of Sannio*

P1-49 Plasmonic Crystals onto Photo-mobile Polymer Films: towards Tunable nano-Sensing

R. Castagna, M. Rippa - *Institute of Applied Sciences and Intelligent Systems "E. Caianiello" of CNR, Pozzuoli*, G. Nenna - *ENEA, Portici*, F. Simoni - *Università Politecnica delle Marche*, L. Petti - *Institute of Applied Sciences and Intelligent Systems "E. Caianiello" of CNR, Pozzuoli*

P1-50 Characterization of Silica Fibers for dual-Wavelength Brillouin Sensors

A. Minardo, E. Catalano, A. Coscetta - *Università della Campania Luigi Vanvitelli*, R. Bernini - *IREA-CNR, Napoli*, L. Zeni - *Università della Campania Luigi Vanvitelli*

P1-51 Testing of Innovative Geometry for SiN Waveguides

I. López García - *Ist. Nazionale di Ottica (INO - CNR) & European Laboratory for Non-linear Spectroscopy (LENS), Sesto Fiorentino*, M. Siciliani de Cumis - *Ist. Nazionale di Ottica (INO - CNR) & European Laboratory for Non-linear Spectroscopy (LENS), Sesto Fiorentino and Agenzia Spaziale Italiana (ASI)*, D. Mazzotti, P. Cancio Pastor, I. Galli, P. De Natale - *Ist. Nazionale di Ottica (INO - CNR) & European Laboratory for Non-linear Spectroscopy (LENS), Sesto Fiorentino*, M. Ghulinyan, G. Pucker - *Fondazione Bruno Kessler*, F. Turri, S. Biasi, F. Ramiro Manzano, L. Pavesi - *Università di Trento*

P1-52 Novel Computer Generated Holograms for high-Security Anti-Counterfeiting Applications

R. Rossi, G. Ruffato, M. Massari - *University of Padova and Laboratory for Nanofabrication of Nanodevices, Padova*, F. Romanato - *University of Padova, Laboratory for Nanofabrication of Nanodevices, Padova and CNR -INFM, Basovizza, Trieste*

P1-53 A Novel Configuration for Bio-Chemical Sensors Based on Surface Plasmon Resonance

N. Cennamo - *University of Campania Luigi Vanvitelli*, M. Pesavento - *University of Pavia*, L. De Maria - *RSE*, P. Zuppella - *CNR-IFN, Padova*, F. Mattiello, L. Zeni - *University of Campania Luigi Vanvitelli*

P1-54 Portable SPR Refractometer for Contamination Analysis in a Flowing Liquid

A. Bano, M. Olivero, A. Vallan, G. Perrone - *Politecnico di Torino*

P1-55 CdTe QDs Growth within PMMA Film

F. Antolini - *ENEA, Frascati, Rome*

P1-56 PDMS Treated by Dichloromethane: Swollen Weight without Underestimation Due to the Solvent Volatility and Thermal Aging to Reduce Swelling and Morphology Damage

M. Cesaria - *Università del Salento*, V. Arima - *Istituto CNR Nanotec Lecce*, S. Rella, C. Malitesta - *Università del Salento*, M.G. Manera, R. Rella - *IMM-CNR, Lecce*

P1-57 A Machine Learning Approach to the Identification of Chemical Substances for Lidar Measurements

M. Gelfusa - *University of Rome Tor Vergata*, A. Murari - *Consorzio RFX, Padua*, A. Malizia - *University of Rome Tor Vergata*, G. Farias - *Pontificia Universidad Catolica de Valparaiso, Chile*, M. Lungaroni, E. Peluso, S. Parracino - *University of Rome Tor Vergata*, J. Vega - *CIE-MAT, Madrid, Spain*, P. Gaudio - *University of Rome Tor Vergata*

Thursday, May 4, 2017

9,00 • SESSION A3 • BIOMEDICAL IMAGING AND TREATMENT

ROOM A

Chair: R. Pini - CNR-IFAC

A3-1 Measurement of Carotid Arterial Stiffness by two-point Heart-Pulse Laser Detection

M. Benedetti, G. Capelli - *Julight*, V. Favalli - *Fondazione Policlinico San Matteo*, A. Mariano - *Università di Pavia*, N. Rebrova - *University College Cork, Ireland*, A. Consoli, J. Ayadi, L. Gilaridi - *Eclxys Sagl, Switzerland*, M. Perna - *Saphyrion Sagl, Switzerland*, P. Minzioni - *Università di Pavia*, E. Arbustini - *Fondazione Policlinico San Matteo*, G. Giuliani - *Julight*

A3-2 Functional Imaging of Zebrafish Neuronal Activity by Bessel Illumination-Based SPIM

L. Turrini, T. Alterini, C. Muellenbroich, A. Gheisari, L. Sacconi, L. Silvestri, F. Vanzi, F.S. Pavone - *European Laboratory for Non-Linear Spectroscopy and Università di Firenze*

A3-3 Mesoscale Imaging of the Cardiac Conduction System

E. Lazzeri, I. Costantini - *European Laboratory for Non-Linear Spectroscopy, Florence*, S. Cannazzaro - *National Institute of Optics, Florence*, C. Ferrantini - *University of Florence*, C. Crocini - *European Laboratory for Non-Linear Spectroscopy, Florence and National Institute of Optics, Florence, Italy*, R. Coppini, E. Cerbai, C. Poggese - *University of Florence*, F.S. Pavone, L. Sacconi - *European Laboratory for Non-Linear Spectroscopy, Florence and National Institute of Optics, Florence, Italy*

A3-4 Effects of Cross-Linking (CXL) Treatment on Corneal Collagen probed by Second Harmonic Generation Microscopy

R. Mercatelli - *National Institute of Optics (INO-CNR), Sesto Fiorentino*, F. Ratto, F. Rossi - *Institute of Applied Physics (IFAC-CNR), Sesto Fiorentino*, L. Menabuoni, A. Malandrini - *Public Hospital of Prato*, R. Nicoletti - *CSO*, F. Tatini, R. Pini - *Institute of Applied Physics (IFAC-CNR), Sesto Fiorentino*, F.S. Pavone - *European Laboratory for Non-Linear Spectroscopy (LENS), Sesto Fiorentino, National Institute of Optics (INO-CNR) and University of Florence*, R. Cicchi - *National Institute of Optics (INO-CNR), Sesto Fiorentino and European Laboratory for Non-Linear Spectroscopy (LENS), Sesto Fiorentino*

A3-5 1070 nm Fiber Laser for Dental Ceramic Surface Processing: Ultrastructural Analysis

C. Fornaini, F. Poli - *University of Parma*, E. Merigo - *University of Nice, France*, S. Selleri, A. Cucinotta - *University of Parma*

A3-6 In-Situ Laser Fenestration of Endovascular Stent-Graft in Abdominal Aortic Aneurysm Repair (EVAR)

F. Micheletti, F. Rossi - *IFAC-CNR, Institute of Applied Physics "Nello Carrara", Italian National Research Council, Sesto Fiorentino*, S. Condino, V. Ferrari, R. Piazza - *University of Pisa*, R. Pini - *IFAC-CNR, Institute of Applied Physics "Nello Carrara", Italian National Research Council, Sesto Fiorentino*

9,00 • SESSION B3 • SENSORS

ROOM B

Chair: G. Perrone - Politecnico di Torino

B3-1 Invited

A φ -OTDR Sensor for High-Frequency Distributed Vibration Measurements with Minimal Post-Processing

Y. Muanenda, C.J. Oton, S. Faralli, F. Di Pasquale - *Istituto TeCIP, Scuola Superiore Sant'Anna*

B3•2 All-Polymer Photonic Crystal Sensors

P. Lova, G. Manfredi, S. Silvano, P. Giusto, M. Alloisio, A. Servida, D. Comoretto - *Università di Genova*

B3•3 Portable Gas Analyzers for In-Field Applications to Vulcanology And Atmospheric Studies Aboard Aircraft and Drones

S. Viciani - *CNR-INO, Firenze*, A. Chiarugi - *INGV, Pisa*, A. Montori - *CNR-INO, Firenze*, L. Tozzetti - *CNR-INO, Firenze and University of Florence*, M. Burton - *University of Manchester, UK*, F. D'Amato - *CNR-INO, Firenze*

B3•4 Laser Temperature Measurement on the 2 Micron Carbon Dioxide Absorption Band

A. Ghetti, L. Cocola - *CNR IFN, Padova*, G. Tondello - *CNR IFN, Padova and LPRO*, L. Poletto - *CNR IFN, Padova*

B3•5 An Innovative Electro-Optical System for the Detection of HV Power Line Insulators Defects

E. Golinelli, G.M. Ogliari, U. Perini, G. Pirovano - *RSE*, R. Bratovich, A. Barberis - *NTW*

9,00 • SESSION C3 • SOURCES AND LASERS**ROOM C**

Chair: G. Bolognini - *CNR*

C3•1 On-Chip Photon-Pair Source by Direct Laser Writing with a Femtosecond Laser

S. Atzeni - *Politecnico di Milano and Istituto di Fotonica e Nanotecnologie - Consiglio Nazionale delle Ricerche (IFN-CNR), Milano*, G. Corrielli - *Istituto di Fotonica e Nanotecnologie - Consiglio Nazionale delle Ricerche (IFN-CNR), Milano and Politecnico di Milano*, A. Crespi - *Politecnico di Milano and Istituto di Fotonica e Nanotecnologie - Consiglio Nazionale delle Ricerche (IFN-CNR), Milano*, F. Sciarrino - *Sapienza Università di Roma*, R. Osellame - *Istituto di Fotonica e Nanotecnologie - Consiglio Nazionale delle Ricerche (IFN-CNR), Milano and Politecnico di Milano*

C3•2 Probing and Controlling the Comb Features of a THz QCL

L. Consolino, A. Campa, F. Cappelli, P. Cancio Pastor, S. Bartalini - *CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*, G. Scalari, M. Rosch, M. Beck, J. Faist - *ETH Zurich, Switzerland*, P. De Natale - *CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*

C3•3 Defect-Related Degradation in InGaN Laser Diodes

D. Monti, M. Meneghini, C. De Santi, G. Meneghesso, E. Zanoni - *University of Padova*, A. Bojarska - *Institute of High Pressure Physics "Unipress", Poland*, P. Perlin - *Institute of High Pressure Physics "Unipress", Poland and TopGaN Limited, Poland*

C3•4 Kerr-Lens Mode-Locked Cr²⁺:ZnSe Laser

Y. Wang, T.T. Fernandez - *Politecnico di Milano*, N. Coluccelli, A. Gambetta, P. Laporta, G. Galzerano - *Politecnico di Milano and Istituto di Fotonica e Nanotecnologie - CNR, Milano*

C3•5 Design and Fabrication of Dysprosium-Doped ZBLAN Fiber Laser

M.C. Falconi, D. La Neve - *Politecnico di Bari*, Y. Wang, T.T. Fernandez, G. Galzerano - *IFN-CNR Politecnico di Milano*, F. Prudenzano - *Politecnico di Bari*

C3•6 Thermal Dynamics of Yb-Doped Amplifier Based on Symmetry-Free Photonic Crystal Fiber

F. Poli, C. Molardi - *University of Parma*, L. Rosa - *Swinburne University of Technology, Australia*, A. Cucinotta, S. Selleri - *University of Parma*

10,30-11,00 • Coffee Break

11,00 • SESSION A4 • NANOSENSORS, DETECTORS AND SOURCES

ROOM A

Chair: F. Romanato - *Università di Padova*

A4-1 Multi-Sensing Meta Nanostructures with Surface-Enhanced Raman Scattering and Surface Plasmon Resonance Functionalities

M. Ripa, R. Castagna - *Institute of Applied Sciences and Intelligent Systems "E. Caianiello" of CNR, Pozzuoli*, M. Pannico, P. Musto - *Institute for Polymers, Composites and Biomaterials of CNR, Pozzuoli*, J. Zyss - *Institut d'Alembert, ENS de Cachan, France and Institute of Applied Sciences and Intelligent Systems "E. Caianiello" of CNR, Pozzuoli*, L. Petti - *Institute of Applied Sciences and Intelligent Systems "E. Caianiello" of CNR, Pozzuoli*

A4-2 Assessment of the Chromatic Behavior of Colloidal Sensors

A. Chiappini, C. Armellini - *IFN-CNR, Trento*, A. Vaccari - *Fondazione Bruno Kessler*, V. Piccolo - *University of Trento*, A. Piotrowska - *IFN-CNR, Trento and University of Trento*, D. Zonta - *IFN-CNR, Trento, University of Trento and University of Strathclyde Glasgow, UK*, M. Ferrari - *IFN-CNR, Trento*

A4-3 Low Cost Lithographic Fabrication of Tunable Plasmonic Nanostructures

A. Colombelli, M.G. Manera - *Institute for Microelectronics and Microsystems, Lecce*, S. Rizzato, A.G. Monteduro, G. Maruccio - *University of Salento*, R. Rella - *Institute for Microelectronics and Microsystems, Lecce*

A4-4 Self-Organised Flexible Plasmonic Arrays

D. Repetto, C. Mennucci, M. Barelli, F. Buatier de Mongeot - *Università di Genova*

A4-5 Hybrid Graphene/Silicon Photodetectors Operating at 2 Micron

M. Casalino - *Institute for Microelectronics and Microsystems, Research National Council, Naples*, I. Giglio - *"Mediterranea" University*, G. Coppola - *Institute for Microelectronics and Microsystems, Research National Council, Naples*

A4-6 Visible Laser Operation of a Pr³⁺:KY₃F₁₀ Single-Crystal Fibre

A. Sottile - *Università di Pisa and NEST, Istituto Nanoscienze - CNR, Pisa*, E. Damiano, Z. Zhang - *Università di Pisa*, M. Tonelli - *Università di Pisa and NEST, Istituto Nanoscienze - CNR, Pisa*

A4-7 Laser Activated Remote Phosphor for Lighting Applications

N. Trivellin, M. Buffolo, M. Meneghini, G. Meneghesso, E. Zanoni - *University of Padova*

11,00 • SESSION B4 • OPTICAL NETWORK DEVICES

ROOM B

Chair: M. Martinelli - *Politecnico di Milano*

B4-1 Invited

Lighting System with High Power LEDs, Light Management Structure, and Large-Area Electronics in the LUMENTILE™ European Project

L. Carraro, M. Simonetta, G. Benetti, A. Tramonte, G. Capelli - *Università di Pavia*, M. Benedetti, E. Randone - *Julight*, A. Ylisaukko-Oja, K. Keranen, T. Facchinetti - *Technological Research Centre of Finland, Finland*, G. Giuliani - *Università di Pavia*

B4-2 Integrated Optic Tunable Mirror

A. Righetti, M.C. Ubaldi, L. Ferrario, G. Grasso - *Fondazione CIFE*

B4-3 High-Performance SOI AWG For Optical Network Applications

C. Castellan, S. Tondini, M. Mancinelli - *University of Trento*, C. Kopp - *CEA, France*, L. Pavesi - *University of Trento*

B4-4 Silicon-Graphene Schottky Photodetectors Integrated with an Optical Cavity at 1550 nm

M. Casalino, G. Coppola - *Institute for Microelectronics and Microsystems (CNR), Naples*, U. Sassi, I. Goykhmann, A.C. Ferrari - *University of Cambridge, UK*

B4-5 Simulation of Quantum Dot Fabry-Perot Comb Lasers: Role of the Carrier Grating

L.L. Columbo - *Politecnico di Torino and CNR-IFN Istituto di Fotonica e Nanotecnologie, Bari*, P. Bardella, I. Montrosset, M. Gioannini - *Politecnico di Torino*

16,00 • SESSION A5 • BIOMEDICAL SENSING

ROOM A

Chair: S. Merlo - Università di Pavia

A5-1 Self-Assembled and Repeatable SERS Nanoprobes on Fibre Tip

M. Pisco - *University of Sannio*, F. Galeotti - *National Research Council, Institute for Macromolecular Studies (ISMAC-CNR), Milano*, G. Quero - *University of Sannio*, G. Grisci - *National Research Council, Institute for Macromolecular Studies (ISMAC-CNR), Milano*, A. Micco - *University of Sannio*, L.V. Mercaldo, P. Delli Veneri - *ENEA Portici*, A. Cutolo, A. Cusano - *University of Sannio*

A5-2 Tapered Fibers for Optogenetics: from Wide Volume to Site-Selective Optical Control of Neural Activity in the Mouse Brain

F. Pisanello - *Istituto Italiano di Tecnologia (IIT)*, G. Mandelbaum - *Harvard Medical School, USA*, M. Pisanello - *Istituto Italiano di Tecnologia (IIT) and Università del Salento*, I. Oldenburg - *Harvard Medical School, USA*, L. Sileo, E. Bellistri, B. Spagnolo - *Istituto Italiano di Tecnologia (IIT)*, J. Markowitz, R. Peterson - *Harvard Medical School, USA*, A. Della Patria - *Istituto Italiano di Tecnologia (IIT)*, T. Haynes - *Harvard Medical School, USA*, M. Emara - *Istituto Italiano di Tecnologia (IIT) and Università del Salento*, S.R. Datta, B. Sabatini - *Harvard Medical School, USA*, M. De Vittorio - *Istituto Italiano di Tecnologia (IIT) and Università del Salento*

A5-3 Micro-Opto-Acousto-Fluidic System for the Analysis of Single-Cell Mechanics

V. Vitali, T. Yang - *Università di Pavia*, F. Bragheri - *Istituto di Fotonica e Nanotecnologie, CNR, Milano*, G. Nava - *Università di Milano*, I. Chiodi, C. Mondello - *Istituto di Genetica Molecolare (IGM)-CNR, Pavia*, R. Osellame - *Istituto di Fotonica e Nanotecnologie, CNR, Milano*, K. Berg-Sørensen - *Technical University of Denmark, Denmark*, I. Cristiani, P. Minzioni - *Università di Pavia*

A5-4 Sensorized Needles for Epidurals

B. Carotenuto, A. Micco, A. Ricciardi - *University of Sannio*, E. Amorizzo, M. Mercieri - *Sapienza University, Rome*, A. Cutolo, A. Cusano - *University of Sannio*

A5-5 Plasmonic Nanostructures for Biosensing Applications

I.G. Balasa, N. Michieli, B. Kalinić, C. Scian, T. Cesca, G. Mattei - *Università di Padova*

A5-6 Low-Coherence Reflectometry for Cell Refractive Index Sensing

G. Rigamonti, F. Carpignano - *Università di Pavia*, G. Mazzini - *Istituto di Genetica Molecolare IGM-CNR Pavia and Università di Pavia*, S. Merlo - *Università di Pavia*

A5-7 Microspheres and Microbubbles for Chemical/Biological Optical Sensing

M.C. Falconi, G. Palma, D. La Neve - *Politecnico di Bari*, F. Chiavaioli, G. Nunzi Conti, G.C. Righini, C. Trono - *IFAC-CNR, Firenze*, F. Prudenzano - *Politecnico di Bari*

A5-8 We-Lab: Challenging an Educational Tool in Real Diagnostic Applications

M. Barozzi, A. Tonelli, A. Zaccarelli, A. Grazioli, M. Sozzi, A. Candiani - *DNAPhone*, A. Cucinotta, S. Selleri - *Università di Parma*

16,00 • SESSION B5 • ACCESS AND DATA-CENTER NETWORKS

ROOM B

Chair: G. Bosco - Politecnico di Torino

B5-1 Invited

Up to 4x192 LTE-A Radio Waveforms Transmission in a Point to Multipoint Architecture for Massive Fronthauling Solutions

P. Torres-Ferrera - *Universidad Nacional Autónoma de México, Mexico*, S. Straullu, S. Abrate - *Istituto Superiore Mario Boella*, R. Gaudino - *Politecnico di Torino*

B5-2 LTE Transmission over Fiber Optic Pulse Width Modulation

L. Combi, A. Gatto, M. Martinelli, P. Parolari - *Politecnico di Milano*, R. Sacchi, R. Giacometti, A. Lena, C. Canziani - *Keysight Technologies Italy*, U. Spagnolini - *Politecnico di Milano*

B5-3 Optical Network Slicing Approaches with Carrier Ethernet Tests

F. Matera - *Fondazione Ugo Bordonini*, V. Attanasio, L. Salamandra, S. Di Bartolo, P. Susanna, A. Pizzolo - *ISCOM, Rome, Italy and Università di Roma Tor Vergata*, E. Nastri, E. Manca - *ISCOM, Rome*

B5-4 Street-aware Algorithm for Optimal Dimensioning of protected-PON in very large Regions

G. Arévalo - *Universidad Politécnica Salesiana, Ecuador*, R. Gaudino - *Politecnico di Torino*

B5-5 Power and Cost Savings in Metro and Data Center Networks Using Optical Transceivers Based on a Polymeric Substrate

M. Quagliotti, A. Pagano, D. Roccatò - *Telecom Italia*, V. Katopodis, M. Spyropoulou - *National Technical University of Athens, Greece*, A. Beretta, A. Dedè, A. Vannucci - *Linkra, C. Kouloumentas, H. Avramopoulos - National Technical University of Athens, Greece*

B5-6 Intra-Datacenter Links Optical PCI Express Interconnections

A. Gatto, P. Parolari, M. Brunero, F. Corapi - *Politecnico di Milano*, V. Costa, M. Grassi - *Italtel*, P. Boffi - *Politecnico di Milano*

B5-7 Spectrum Fragmentation Metrics and their Use in Optical Channel Allocation Algorithms

M. Quagliotti - *Telecom Italia*, D. Cifuentes Arango - *Politecnico di Torino*, M. Schiano - *Telecom Italia*, A. Carena, M. Cantono, V. Curri - *Politecnico di Torino*

16,00 • SESSION C5 • EXHIBITORS' SHOWCASE**ROOM C**

Chair: G. Parladori - *SM Optics*

C5-1 Institute for photonics and nanotechnologies IFN- CNR Padova: laboratories and activities

S. Bonora, L. Cocola, A.J. Corso, V. Da Deppo, M. Fedel, F. Frassetto, M.G. Pelizzo, L. Poletto, P. Zuppella - *IFN-CNR, Padova*

C5-2 Raman THz[®] Spectroscopy: Volume Holographic Gratings (VHGs) application for easy access to low frequency region (~5-200 cm⁻¹ — ~ 0.3- 6 THz)

F.M. Vitucci - *Crisel Instruments*

C5-3 Exfo new Optical Testing Solution

M. Harrop - *Ampercom*

C5-4 Polarization Maintaining Optical Components: the Importance of High-Grade Connectors

P. Bernasconi - *Diamond SA*

C5-5 TDECQ (Transmitter Dispersion Eye Closure Quaternary) for 400 Gb/s PAM4 Optical Transmitters

J. King - *Finisar Corporation, USA*, D. Leyba, G.D. LeCheminant, M. Vivarelli - *Keysight Technologies*

C5-6 The dream of the perfect mirror: frameless and totally flat

V. Roppo - *Optosigma Europe*

C5-7 Test challenges and solutions for PAM4 signals in 400G links

A. Vinci - *Tektronix*

C5-8 Soluzioni di misura per segnali ottici

Le novità per analizzare i segnali ottici di ultima generazione: 56GB 64Qam, segnali Pam4 e modulazioni coerenti

G. Fabbro - *Teledyne LeCroy*

C5-9 Non-contact Laser Vibration and Displacement Measurements

G. Capelli, M. Benedetti, E.M. Randone, G. Giuliani - *Julight*

C5-10 Thorlabs: Innovative Photonic Products with fast Delivery

R. Shokri - *Thorlabs*

Friday, May 5, 2017

ROOM A

9,00 • SESSION A6 • SPECTROSCOPY

Chair: G. Cincotti - *Università Roma Tre*

A6-1 Invited

Mid-infrared Molecular Precision Spectroscopy with a Metrological-Grade Tunable Coherent Source

M. Verde, G. Insero - *CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*, D. D'Ambrosio - *CNR-INO, Sesto Fiorentino, LENS, Sesto Fiorentino and INRIM, S. Borri - CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*, D. Calonico - *INRIM, P. Cancio Pastor - CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*, C. Clivati - *INRIM, M. Inguscio - CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*, F. Levi - *INRIM, P. De Natale - CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino*, G. Santambrogio - *CNR-INO, Sesto Fiorentino and LENS, Sesto Fiorentino and INRIM*

A6-2 Frequency Offset Raman Spectroscopy (FORS) for in-Depth Analysis of Scattering Media

S.K.V. Sekar, S. Mosca - *Politecnico di Milano*, A. Farina - *CNR, Istituto di Fotonica e Nanotecnologie, Milano*, F. Martelli - *Università di Firenze*, P. Taroni, G. Valentini - *Politecnico di Milano and CNR, Istituto di Fotonica e Nanotecnologie, Milano*, R. Cubeddu - *Politecnico di Milano*, A. Pifferi - *Politecnico di Milano and CNR, Istituto di Fotonica e Nanotecnologie, Milano*

A6-3 Broadband CW Nonlinear Generation for Metrological Grade Terahertz Spectroscopy

M. De Regis - *LENS, European Laboratory for Nonlinear Spectroscopy, Sesto Fiorentino*, L. Consolino, S. Bartalini, M. Ravaro, P. De Natale - *INO, Istituto Nazionale di Ottica - CNR, Florence and LENS, European Laboratory for Nonlinear Spectroscopy, Sesto Fiorentino*

A6-4 Broadband (600-1200 nm) Diffuse Optical Spectroscopy: Characterization of Thyroid Tissue Constituents and *In Vivo* Study

S.K.V. Sekar - *Politecnico di Milano*, A. Farina - *CNR, Istituto di Fotonica e Nanotecnologie, Milano*, A. Dalla Mora - *Politecnico di Milano*, P. Taroni - *Politecnico di Milano and CNR, Istituto di Fotonica e Nanotecnologie, Milano*, C. Lindner - *ICFO-Institut de Ciències Fotòniques, Spain*, M. Mora - *IDIBAPS-Fundació Clínic per la Recerca Biomèdica, Spain*, P. Farzam, M. Pagliuzzi - *ICFO-Institut de Ciències Fotòniques, Spain*, M. Squarcia, I. Halperin, F. Hanzu - *IDIBAPS-Fundació Clínic per la Recerca Biomèdica, Spain*, H. Dehghani - *University of Birmingham, UK*, T. Durduran - *ICFO-Institut de Ciències Fotòniques, Castelldefels and ICREA-Institució Catalana de Recerca i Estudis Avançats, Spain*, A. Pifferi - *Politecnico di Milano and CNR, Istituto di Fotonica e Nanotecnologie, Milano*

A6-5 Fluorescence Measurements of Neuronal Activity during PTZ-induced Seizures in Zebrafish

L. Turrini - *LENS, Sesto Fiorentino*, C. Fornetto, G. Marchetto - *University of Firenze*, N. Tiso, A. Vettori - *University of Padova*, F.S. Pavone - *LENS, Sesto Fiorentino, INO-CNR, Sesto Fiorentino and University of Firenze*, F. Vanzi - *LENS, Sesto Fiorentino and University of Firenze*

ROOM B

9,00 • SESSION B6 • OPTICAL FIBERS

Chair: F. Poli - *Università di Parma*

B6-1 Geometric Phase and Angular Momentum of the Light

P. Martelli, A. Fasiello, M. Martinelli - *Politecnico di Milano*

B6-2 Diffractive Optics for OAM-MODE Division Multiplexing in Optical Fibers

G. Ruffato, M. Massari, E. Gazzola - *University of Padova and Laboratory for Nanofabrication of Nanodevices, Padova*, G. Parisi - *SM Optics*, F. Romanato - *University of Padova, Laboratory for Nanofabrication of Nanodevices, Padova and CNR -INFN, Trieste*

B6-3 Singularities in Higher Order Modes of Optical Fiber

C.H. Krishna, S. Roy - *National Institute of Technology, India*

B6-4 Modeling the Parametric Amplification in Few Mode Fibers

A. Trichili - *University of Carthage, Tunisia and Università di Padova*, M. Zghal - *University of Carthage, Tunisia and Institut Mines-Télécom, France*, L. Palmieri, A. Galtarossa, M. Santagiustina - *Università di Padova*

B6-5 Polarization Scrambling in Nonlinear Fiber Optic with Counterpropagating Delayed Loop

J. Morosi - *Politecnico di Milano*, M. Guasoni - *University of Southampton, UK*, J. Fatome - *Université de Bourgogne Franche-Comté, France*

B6-6 Extrusion of Glass for the Fabrication of Complex-Shaped Optical Fibers

E. Ceci Ginistrelli - *Politecnico di Torino and University of Southampton, UK*, J. Lousteau - *University of Southampton, UK*, D. Frisari - *Politecnico di Torino and University of Southampton, UK*, N.G. Boetti - *Istituto Superiore Mario Boella*, D. Pugliese, D. Janner - *Politecnico di Torino*, F. Poletti - *University of Southampton, UK*, D. Milanese - *Politecnico di Torino*

9,00 • SESSION C6 • ADVANCED MICROSCOPY**ROOM C**

Chair: F. Prudenzano - *Politecnico di Bari*

C6-1 Deconvolution Techniques for THz Characterization of thin Painting Layers

I. Cacciari, D. Ciofini, S. Siano - *Istituto di Fisica Applicata "N. Carrara" - Consiglio Nazionale delle Ricerche, Florence*

C6-2 LiF Imaging Detectors Read by Confocal Laser Microscope for Characterization of X-Ray Beam Coupled with Polycapillary Optics

F. Bonfigli - *ENEA, Frascati*, D. Hampai - *INFN - LNF, Frascati*, S.B. Dabagov - *INFN - LNF, Frascati, NR Nuclear University MEPhI and NR Nuclear University MEPhI, Russia*, R.M. Montereali - *ENEA, Frascati*

C6-3 Femtosecond Stimulated Raman Losses and Stimulated Raman Gain Microscopy

A. D'Arco, M.A. Ferrara, M. Indolfi, D. Passaro, V. Tufano, L. Sirleto - *National Research Council (CNR), Institute for Microelectronics and Microsystems, Naples*

C6-4 Photon Assisted Ultrafast Scanning Electron Microscopy

S.M. Pietralunga - *CNR-IFN, Milano and Center for Nanoscience and Technology at poliMI, Istituto Italiano di Tecnologia*, M. Zani - *Politecnico di Milano*, V. Sala, G. Irde - *Center for Nanoscience and Technology at poliMI, Istituto Italiano di Tecnologia and Politecnico di Milano*, C. Manzoni - *CNR-IFN, Milano*, G. Isella - *Politecnico di Milano and L-NESS*, G. Cerullo - *Politecnico di Milano*, G. Lanzani, A. Tagliaferri - *Center for Nanoscience and Technology at poliMI, Istituto Italiano di Tecnologia and Politecnico di Milano*

C6-5 Invited**A Pocket Device for High-Throughput Optofluidic Holographic Microscopy**

M. Paturzo, V. Bianco, B. Mandracchia, P. Ferraro - *CNR-ISASI, Pozzuoli*

10,30-11,00 • Coffee Break



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