



Rome, June 6-8 2016

Sapienza Università di Roma, Sede di San Pietro in Vincoli, Via Eudossiana, 18

FOTONICA 2016 AEIT

18th Edition
CONVEGNO ITALIANO
DELLE TECNOLOGIE FOTONICHE

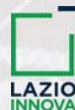
P R O G R A M M A

Organized by



AICT Society AEIT per la Tecnologia dell'Informazione e delle Comunicazioni
Gruppo Tematico "Fotonica ed Electro-ottica"

In collaboration with



FOTONICA 2016 - OVERVIEW

Monday June 6 2016

	ROOM A	ROOM B
09,30-10,30	OPENING SESSION	
10,40-12,40	SYMPOSIUM OPTICS AND PHOTONICS FOR AEROSPACE	
12,40-14,00	Lunch Break + POSTER PREVIEW I	
14,00-15,45	A1 SPACE APPLICATIONS	B1 OPTICAL MATERIALS
15,45-16,45	Wine Tasting + POSTER SESSION I	
16,45-18,30	A2 Special Session SIOF/AEIT/IEEE Photonics	B2 SENSING CONCEPTS AND DEVICES
18,30-19,30	Concert for Guitar and Flute	
21,00-22,00	Visit: Foro di Augusto (by night)	

Tuesday June 7 2016

	ROOM A	ROOM B
08,45-10,15	A3 OPTICAL AND PHOTONIC DEVICES	B3 PASSIVE OPTICAL NETWORKS
10,15-10,40	Coffee Break	
10,40-12,40	SYMPOSIUM PHOTONICS AS THE KEY TECHNOLOGY TRANSFORMING OUR CITIES IN A LIVING LAB	
12,40-14,00	Lunch Break + POSTER PREVIEW II	
14,00-15,45	A4 BIOIMAGING	B4 OPTICAL NETWORKS AND SYSTEMS
15,45-16,45	Coffee Break + POSTER SESSION II	
16,45-18,30	A5 Exhibitor Showcase	B5 Special Session PHOTONICS FOR 5G
20,30	Conference Dinner	

Wednesday June 8 2016

	ROOM A	ROOM B
08,45-10,15	A6 CULTURAL HERITAGE	B6 PHOTONIC DEVICES FOR TLC
10,15-10,30	Coffee Break	
10,30-13,00	SYMPOSIUM TECHNOLOGICAL R/D IN PHOTONICS AS AN INCUBATOR OF INDUSTRIAL INITIATIVES IN ITALY	
13,00-14,00	Lunch Break	
14,00-15,45	A7 BIOSENSING	B7 MULTIPLEXING TECHNIQUES AND MODULATION FORMATS
15,45-17,15	A8 CHEMICAL, BIOMEDICAL AND MEDICAL SENSORS	B8 GRAPHENE AND SOLAR CELLS
17,15-17,30	CLOSING SESSION	

FOTONICA 2016 - OVERVIEW

ROOM C

C1 Special Session PLASMONICS

C2 PLASMONIC COMPONENTS

ROOM C

C3 OPTICAL SOURCES I

C4 OPTICAL SOURCES II

C5 OPTICAL FIBER SENSORS

ROOM C

C6 RAMAN DIAGNOSTICS

C7 PHOTONICS FOR HEALTH I

C8 PHOTONICS FOR HEALTH II

Monday June 6 2016

PARALLEL EVENTS

14,00-15,00

AEIT-CORIFI Communications

15,00-16,00

Horizon 2020: Funding Opportunities in Photonics

Tuesday June 7 2016

PARALLEL EVENTS

09,00-10,00

Presentation of ACTPHAST Platform

14,00-16,00

Brokerage Event Face2Face: Industry meets Innovation

16,30-18,30

Methodologies and Best Practices to Finance Innovation

Wednesday June 8 2016

PARALLEL EVENTS

14,00-17,00

Workshop: Optical Quantum Information

OVERVIEW

FOTONICA 2016 is the 18th 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 2016 is structured in three days of technical sessions that include review-papers and original contributions (oral and poster presentations) relevant to the general Conference themes.

There are 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 2016 is aimed at an audience of professionals active in photonics, including researchers, manufacturers and users of technology, as well as analysts and investors interested in this sector.

EXECUTIVE COMMITTEE

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1 - Communications

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2 - Components and Appliances

G. Assanto - *Università di Roma Tre*
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G. Bolognini - *CNR*
G. Breglio - *Università di Napoli Federico II*
S. Campopiano - *Univ. di Napoli Parthenope*
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C. Sibilia - *Sapienza Università di Roma*
G. Tartarini - *Università di Bologna*

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 - *Univ. 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. Delli Veneri - *ENEA*
A. Diaspro - *IIT*
A. Farini - *CNR*
F. Fusi - *Università di Firenze*
F. Giorgis - *Politecnico di Torino*
M. Picollo - *CNR*
S. Pietralunga - *CNR*
R. Rella - *CNR*
A. Righetti - *CIFE*
L. Sirleto - *CNR*
C. Summonte - *CNR*
P. Taroni - *Politecnico di Milano*
G. Toci - *CNR*

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ABSTRACTS

Abstracts are collected in a USB distributed to all Conference Participants.

PROCEEDINGS

Final versions of the accepted contributions are collected in a publication in the IET Digital Library. All papers, categorized as "FOTONICA 2016 proceedings" will be available to all participants and will be indexed by IEEE Xplore®.

For quotes: "Title of Paper, Authors, in 2016 Fotonica AEIT Italian Conference on Photonics Technologies - Rome, Italy, June 6-8 2016 ISBN 978-1-78561-268-8".

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
AEIT/CORIFI/IEEE/ SIEm/SIOF Members Single Day Fee	Euro 250,00
Non Members Single Day Fee	Euro 317,20

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:

Monday, June 6, 2016	9,00 - 18,30
Tuesday, June 7, 2016	8,30 - 18,30
Wednesday, June 8, 2016	8,30 - 17,30

EXHIBITION

The Exhibition will be opened as follows:

Monday, June 6, 2016	11,00 - 18,30
Tuesday, June 7, 2016	8,45 - 18,30
Wednesday, June 8, 2016	8,45 - 17,30

SECRETARIAT

AEIT - Associazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni

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 as full participants of students of specific university courses.

Students of Sapienza University of Rome, which collaborates in the conference organization, are invited to participate in the Plenary and Technical Sessions as simple attendants.

WINE TASTING

During the Poster Session 1 (**Monday June 6, 2016**) selected wines by **Casale del Gioglio** will be offered to all Participants.

CONCERT

A Concert for guitar and flute will be played at the conference venue, on **Monday, June 6, 2016, at 18,30**. Music by Astor Piazzolla. Players: Emanuele Serra (Guitar), Laura Serra (Flute).

CULTURAL VISIT

A cultural visit, offered to all interested participants, will take place on **Monday, June 6, 2016, at 21,00** to the Foro di Augusto. The spectators will be accompanied by the voice of Piero Angela and by some amazing videos and reconstructions that show places as they looked like at the time of Augustus: a thrilling representation which combines historical and scientific rigor with entertainment.

Foro di Augusto

Entrance: Via Alessandrina, Largo Corrado Ricci Side

Participants are invited to show up strictly at least 30 minutes before the start of the show. Latecomers are not allowed to enter after the show has started.

CONFERENCE DINNER

The traditional conference dinner, for participants who have reserved a ticket, will take place on **Tuesday, June 7, 2016, at 20.30**, at Residenza di Ripetta Via di Ripetta, 231 - Rome.

CONFERENCE VENUE

Sapienza Università di Roma, Sede di San Pietro in Vincoli
Via Eudossiana, 18 - Roma

T E C H N I C A L

MONDAY, JUNE 6, 2016

9.30 - 10.30 OPENING SESSION

ROOM A

Prof. Fabrizio Vestroni - *Preside Facoltà Ingegneria Civile e Industriale, Sapienza Univ. di Roma*
Prof. Renato Masiani - *Pro-Rettore vicario, Sapienza Università di Roma*
Prof. Guido Fabiani - *Assessore allo Sviluppo Economico e Attività Produttive, Regione Lazio*
Prof. Massimo Inguscio - *Presidente CNR - Consiglio Nazionale delle Ricerche*

10.40 - 12.40 SYMPOSIUM Optics and Photonics for Aerospace

ROOM A

FIRST PART:

EU programme H2020-Space: the Italian Role

Augusto Cramarossa - *Agenzia Spaziale Italiana ASI*

The Italian Cluster for Aerospace Technology

Marcello Onofri - *Presidente CTNA Cluster Tecnologico Nazionale Aerospazio*

Italian Aerospace Research Centre and Campania Aerospace Technological District

Luigi Carrino - *Presidente CIRA Centro Italiano Ricerche Aerospaziali*

SECOND PART:

The Laser Interferometer Virgo and the Detection of Gravitational Waves

Fulvio Ricci - *Coordinator VIRGO*

Photonics Applications in ESA Missions

Andrea Marini - *European Space Agency ESA-ESTEC*

Electro-Optical Instruments for Meteorology and Climatology

Demetrio Labate - *Leonardo-Finmeccanica*

Hyperspectral Instruments for Airborne and Space Platforms

Gianni Uda - *Leonardo-Finmeccanica*

12.40-14.00 LUNCH BREAK + POSTER PREVIEW 1

P R O G R A M M A

14.00 Session A1 - SPACE APPLICATIONS

ROOM A

Chair: A. Cramarossa - Agenzia Spaziale Italiana ASI

A1.1 • Invited

Web-based Spatial Decision Support Systems to Monitor and Manage Coastal Environments • A. Fiduccia, F. Gugliermetti, F. Pagliaro, B. Mattoni, F. Nardecchia - *Sapienza University of Rome*, C. Canu - *Italian Space Agency (ASI)*

A1.2 • Satellite Quantum Communication • G. Vallone, D. Bacco, D. Dequal, S. Gaiarin, M. Schiavon, M. Tomasin, F. Vedovato, P. Villoresi - *Università degli Studi di Padova*, V. Luceri - *e-GEOS*, G. Bianco - *Agenzia Spaziale Italiana (ASI)*

A1.3 • Modems for Deep Space Optical Communications - From RF to Optical Deep Space: The European Contribution • D. Giancrisofaro - *Thales Alenia Space Italia*

A1.4 • Thermal-Vacuum Optical Characterization of Next-Generation Lunar Laser Retroreflectors • C. Mondaini, A. Boni, E. Ciocci, S. Contessa, S. Dell'Agnello, G. Delle Monache, N. Intaglietta, M. Maiello, M. Martini, G. Patrizi, L. Porcelli, L. Salvatori, M. Tibuzzi, P. Tuscano, R. Vittori - *INFN-LNF*, D. Currie - *University of Maryland, USA and INFN-LNF*, R. Richards - *MoonExpress (MEX)*, USA, G. Bianco - *Agenzia Spaziale Italiana (ASI) and INFN-LNF*

A1.5 • Smart Dynamic Lighting for Space Habitats • C. Burattini, B. Mattoni, D. Drakou, L. Cellucci, A. Mangione, F. Gugliermetti, F. Bisegna - *Sapienza University of Rome*

14.00 Session B1 - OPTICAL MATERIALS

ROOM B

Chair: E. Fazio - *Sapienza Università di Roma*

B1.1 • Optical and Topological Spontaneous Symmetry Breaking in Reorientational Media • A. Piccardi - *University Roma TRE*, A. Alberucci - *Tampere University of Technology, Finland*, N. Kravets - *University Roma TRE*, G. Assanto - *University Roma TRE and Tampere University of Technology, Finland*

B1.2 • Tunable Terahertz Metamaterials Based on Nematic Liquid Crystals • D.C. Zografopoulos, R. Beccherelli - *CNR-IMM, Roma*, G. Isic, B. Vasic, R. Gajic - *University of Belgrade, Serbia*

B1.3 • Light-Driven Reversible Shaping of 2D Polymeric Lattices • F. Pirani - *Politecnico di Torino and Istituto Italiano di Tecnologia IIT*, A. Angelini, F. Frascella, R. Rizzo, E. Descrovi - *Politecnico di Torino*

B1.4 • Spatio-Temporal Investigation of Light Transport in Complex Photonic Structures • R. Savo, L. Pattelli, D.S. Wiersma - *LENS - Università di Firenze*, M. Burresti - *CNR-INO, Firenze*

B1.5 • Sensitivity of PbS Colloidal Quantum Dot Photoconductors: a Comparison of Different Readout Methods • A. De Iacovo, C. Venettacci, L. Colace - *University Roma TRE*, L. Scopa, S. Foglia - *CNR-IMEM, Rome*

B1.6 • Spatial Soliton Scattering in a Randomized Potential • A. Piccardi - *University Roma TRE*, G. Assanto - *University Roma TRE and Tampere University Technology, Finland*, S. Residori - *INLN-Université de Nice, France*

14.00 Session C1 - SPECIAL SESSION PLASMONICS

ROOM C

Chair: P. Biagioni - *Politecnico di Milano*

C1.1 • Mid-Infrared Molecular Sensing with Germanium Antennas on Silicon • L. Baldassarre - *Sapienza University of Rome and Istituto Italiano di Tecnologia*, E. Sakat - *Politecnico di Milano*, A. Samarelli, K. Gallacher - *University of Glasgow, UK*, J. Frigerio, G. Pellegrini - *Politecnico di Milano*, V. Giliberti - *Sapienza University of Rome*, M.P. Fischer, D. Brida - *University of Konstanz, Germany*, G. Isella - *Politecnico di Milano*, D.J. Paul - *University of Glasgow, UK*, M. Ortolani - *Sapienza University of Rome*, P. Biagioni - *Politecnico di Milano*

C1.2 • Engineering the Second Harmonic Emission from Arrays of L-Shape Nanoantennas • P.M. Adam, A.L. Baudrion - *Université de Technologie de Troyes, France*, M. Baselli, P. Biagioni, L. Ghirardini, G. Pellegrini, L. Duò, M. Finazzi, M. Celebrano - *Politecnico di Milano*, A. Locatelli, C. De Angelis - *University of Brescia*

C1.3 • Multiplexing Nanostructured Plasmonic Device for High Throughput Biosensing • A. Sonato, A. Pozzato, F. Suran - *CNR-IOM, Basovizza (TS)*, E. Gazzola, G. Rufato, F. Romanato - *University of Padova*

C1.4 • Chiral Optical Response of Self-Assembled Plasmonic Metasurface Investigated by Linear and Nonlinear Detection Schemes • A. Belardini, M. Centini, G. Leahu, R. Li Voti, E. Fazio, C. Sibilia - *Sapienza Università di Roma*, J.W. Haus, A. Sarangan - *University of Dayton, USA*, D.C. Hooper, V.K. Valev - *University of Bath, UK*

C1.5 • The Next Generation: Miniaturized Objects, Self Powered Using Nanostructures to Harvest Ambient Energy • R. Citroni, D. Passi, F. Di Paolo, A. Di Carlo - *University of Rome Tor Vergata*

C1.6 • Optical Gas Sensors Based on Localized Surface Plasmon Resonance • M. Guglielmi, A. Martucci - *Università di Padova*, E. Della Gaspera - *RMIT University, Australia*

C1.7 • Sub-Wavelength Vectorial Fano-Imaging of Localized Photonic Modes
 F. Intonti, F. La China, N. Caselli, M. Gurioli - *LENS and University of Florence*, N. Vico Triviño, J.F. Carlin, R. Butté, N. Grandjean - *EPFL, Switzerland*

15.45-16.45 POSTER SESSION 1 + WINE TASTING

Selected wines by **Casale del Giglio** will be offered to all Participants.

16.45 Session A2 - SPECIAL SESSION SIOF/AEIT/IEEE PHOTONICS

ROOM A

Chair: F. Baldini - *CNR-IFAC, SIOF President*

A2.1 • Synthesis and Characterization of Er³⁺-Doped Al₂O₃, TiO₂ and TiO₂@SiO₂ Core-Shell Structure Nanoparticles and Their Incorporation into Phosphate Glasses • P. Lopez-Isocha, M. Ferraris, M. Salvo - *Politecnico di Torino*, D. Milanese - *Politecnico di Torino and CNR-IFN, Trento*, L. Petit - *nLight, Finland*, J. Massera - *Tampere University of Technology, Finland*, G. Baldi - *Colorbbia*

A2.2 • Therapeutic Drug Monitoring by a Novel Optical Chip for POCT Diagnostics • C. Berrettoni - *CNR-IFAC, Sesto Fiorentino and University of Siena*, S. Berneschi, A. Giannetti, S. Tombelli, C. Trono, F. Baldini - *CNR-IFAC, Sesto Fiorentino*, R. Bernini, I.A. Grimaldi, G. Testa, G. Persichetti - *CNR-IESE, K.J. Pohl - microfluidic ChipShop, Germany*

A2.3 • Rare-Earth Doped Microdisks for Mid-Infrared Applications • G. Palma, M.C. Falconi - *Politecnico di Bari*, F. Starecki, V. Nazabal - *Université de Rennes, France*, J. Charrier, L. Bodiou - *FOTON-UMR-CNRS 6082, France*, F. Prudenzano - *Politecnico di Bari*

A2.4 • Design of a High Efficiency Mid-IR laser at 4400 nm • M.C. Falconi, G. Palma - *Politecnico di Bari*, F. Starecki, V. Nazabal, J. Troles - *Université de Rennes, France*, S. Taccheo - *Swansea University, UK*, M. Ferrari - *CNR-IFN, Trento*, F. Prudenzano - *Politecnico di Bari*

A2.5 • Towards a Sensor Based on Random Laser Emission • F. Tommasi, E. Ignesti, L. Fini, F. Martelli, S. Cavaliere - *University of Florence*

A2.6 • Two- and Three-Laser Chaos Communications (AEIT Premio Bonazzi) • G. Aromataris, V. Annovazzi Lodi - *Università di Pavia*

A2.7 • Front-Side and Back-Side Illuminated Spad Arrays for 2D Imaging and 3D Ranging (IEEE- Photonics Society Italy Best PhD Thesis Award 2015) • D. Bronzi - *Politecnico di Milano*

16,45 Session B2 - SENSING CONCEPTS AND DEVICES

ROOM B

Chair: P. De Natale - *CNR-INO*

B2.1 • Invited

Liquid Droplet Resonators for Optical Sensing • A. Giorgini, R. Zullo, S. Avino, P. Malara - *CNR-INO, Pozzuoli*, P. De Natale - *CNR-INO, Firenze*, G. Gagliardi - *CNR-INO, Pozzuoli*

B2.2 • From Conoscopy to Sphenoscopy: New Experimental Methods in Crystals Inspections • L. Montalto, D. Rinaldi, L. Scalise, N. Paone, F. Davì - *Università Politecnica delle Marche*

B2.3 • Subgap Time of Flight as a Defect Spectroscopy: Application to CdTe:Cl Radiation Detectors • J. Pousset, I. Farella, A. Cola - *CNR-IMM, Lecce*, S. Gambino - *Università del Salento, Lecce and CNR-NANOTEC, Lecce*

B2.4 • Comparison in Terms of TOF Measurements Between APD and SiPM for LiDAR Applications • G. Adamo, A. Busacca - *University of Palermo*

B2.5 • Linewidth Measurement of a NIR VCSEL by Self-Mixing Interferometry Using Voltage Detection Scheme • M.C. Cardilli, M. Dabbicco, G. Scamarcio - *Università degli Studi di Bari and CNR-IFN, Bari*

B2.6 • Multipath Interference in Connectors and Components: Evaluation and Design Hints • M. Olivero, R. Orta, G. Perrone - *Politecnico di Torino*, L. Greborio, P. Pellegrino, P. Regio - *Telecom Italia*

16,45 Session C2 - PLASMONIC COMPONENTS

ROOM C

Chair: S. Merlo - *Università di Pavia*

C2.1 • Nanoplasmonic Platform for Realizing Multiparametric and High-Throughput Biosensors • F. Carpignano - *Plasmore*, R. Bombera - *Joint Research Centre, Ispra*, P. Pellacani - *Plasmore*, L. Fornasari - *Università degli Studi di Pavia*, C. Morasso - *Fondazione Don Gnocchi ONLUS*, C. Shaffer - *Schafer-N, Denmark*, F. Marabelli - *Università degli Studi di Pavia*, G. Marchesini - *Plasmore*

C2.2 • Enhanced Magneto-Optical Activity of Au Nanostructures: a Novel Transducer Platform for Chemical Sensing • A. Colombelli, M.G. Manera, A. Taurino, R. Rella - *CNR-IMM, Lecce*

C2.3 • SERS and Raman Studies of UV-Induced Modification of Graphene/DNA Interface • S. Botti, A. Rufoloni - *ENEA, Frascati*, S. Gay - *Tor Vergata University of Rome*, S. Laurenzi - *Sapienza University of Rome*, T. Rindzevicius, M.S. Schmidt - *Technical University of Denmark, Denmark*, M.G. Santonicola - *Sapienza University of Rome*

C2.4 • 3D-Structured Gold Film with Nanopores for Sensing Applications • F. Carpignano, G. Silva - *Università di Pavia and University of Southampton, UK*, A. Noual, K. Pechstedt, J.A. Grant-Jacob, B. Brocklesby, P. Horak, S.A. Boden, T. Melvin - *University of Southampton, UK*

C2.5 • Nanometal Skin of Plasmonic Heterostructures for Tip-Enhanced Raman Scattering Probes • G. Zito, G. Rusciano - *Università degli Studi di Napoli Federico II*, A. Vecchione - *CNR-SPIN and Università degli Studi di Salerno*, G. Pesce - *Università degli Studi di Napoli Federico II*, R. Di Girolamo, A. Malafrente, A. Sasso - *Università degli Studi di Napoli Federico II*

C2.6 • Heat Dissipation and Localised Melting in Self-Assembled Dye-Stabilised Gold Nanoparticle Systems • D. Catone, P. O’Keeffe, A. Paladini, F. Toschi, S. Turchini, L. Avaldi - *CNR-ISM, Rome*, G. Testa, A. Cartoni, I. Fratoddi, I. Venditti - *Sapienza University of Rome*, A. Alabastri, R. Proietti Zaccaria - *Istituto Italiano di Tecnologia*

C2.7 • Plasmonic 2D Ordered Nanostructures for Applications in Nanophotonics and Nonlinear Optics • T. Cesca, B. Kalinic, N. Michieli, C. Scian, G. Mattei - *University of Padova*, H. Sanchez Esquivel, R. Rangel Rojo - *Centro de Investigación Científica y de Educación Superior de Ensenada, Mexico*, E.V. Garcia Ramirez, J.A. Reyes Esqueda - *Universidad Nacional Autónoma de México, Mexico*

TUESDAY, JUNE 7, 2016

08.45 Session A3 - OPTICAL AND PHOTONIC DEVICES

ROOM A

Chair: P. Mataloni - *Sapienza Università di Roma*

A3.1 • Invited

Monolithic Integration of Oxide Transparent Multilayer Photonic Crystal as Optoelectronic Gate Dielectric into Organic Light-Emitting Transistor Platform • S. Toffanin, M. Natali, S.D. Quiroga, G.P. Donati, E. Benvenuti - *CNR-ISMN, Bologna*, M. Melucci - *CNR-ISOF, Bologna*, G. Bolognini - *CNR-IMM, Bologna*, L. Passoni, L. Criante - *IIT-CNST, Milano*, F. Scotognella - *Politecnico di Milano*, F. di Fonzo - *IIT-CNST, Milano*

A3.2 • Thermally Reconfigurable Quantum Photonic Circuits at Telecom Wavelength by Femtosecond Laser Micromachining • F. Flamini, L. Magrini, A.S. Rab, N. Spagnolo, V. D'Ambrosio, P. Mataloni, F. Sciarrino - *Sapienza Università di Roma*, T. Zan-drini, A. Crespi, R. Ramponi, R. Osellame - *CNR-IFN, Milano and Politecnico di Milano*

A3.3 • Large Spontaneous Emission Decay Rates on Patterned Resonant Dielectric Multilayers • A. Angelini, R. Rizzo - *Politecnico di Torino*, L. Boarino, N. de Leo - *Istituto di Ricerca Metrologica (INRIM), Torino*, E. Descrovi - *Politecnico di Torino*

A3.4 • Flexible Terahertz Wire Grid Polarizer with High Extinction Ratio and Low Loss • A. Ferraro - *CNR-IMM, Roma and University of Calabria*, D. Zografopoulos - *CNR-IMM, Roma*, M. Missori - *CNR-ISC, Roma*, M. Peccianti - *CNR-ISC, Roma and University of Sussex, UK*, R. Caputo - *CNR-NANOTEC, Rende and Università della Calabria*, R. Beccherelli - *CNR-IMM, Roma*

A3.5 • Optofluidic LC:PDMS Directional Couplers for Low Power Switches • L. Civita, R. Asquini, L. Martini, A. d'Alessandro - *Sapienza University of Rome*

08.45 Session B3 - PASSIVE OPTICAL NETWORKS

ROOM B

Chair: G. Cincotti - *Università degli Studi Roma Tre*

B3.1 • Final Results from EU Project "FABULOUS" • S. Straullu, P. Savio, A. Nespola, S. Abrate - *Istituto Superiore Mario Boella*, V. Ferrero, R. Gaudino - *Politecnico di Torino*

B3.2 • RSOA-Based FDM PON Capable of 128 Gb/s Flexible Upstream Capacity • A. Gatto, P. Parolari, M. Brunero, P. Martelli, P. Boffi - *Politecnico di Milano*, R. Brenot - *III-V Lab, France*

B3.3 • Low-Complexity Real-Time Coherent Tx/Rx Prototype for WDM Access Networks • M. Rannello, F. Bottoni, M. Artiglia, M. Presi, E. Ciaramella - *Scuola Superiore Sant'Anna-TeCIP*

B3.4 • 20-Gb/s Polarization Division Multiplexed WDM PON Transmitter Based on Self-Seeded RSOAs • M. Brunero, P. Parolari, M. Martinelli - *Politecnico di Milano*, R. Brenot - *III-V Lab, France*

B3.5 • A Novel Algorithm for PON Optimal Deployment over Real City Maps and Large Number of Users • G. Arevalo - *Universidad Politécnica Salesiana, Ecuador and Universidad Pontificia Bolivariana, Colombia*, J. Sierra - *Corporación Universitaria del Caribe, Colombia*, R. Gaudino - *Politecnico di Torino*

B3.6 • Monitoring an In-Service Passive Optical Network • F. Chiarello, L. Palmieri, A. Galtarossa, M. Santagiustina - *Università di Padova*, P. Parolari, M. Brunero, P. Boffi - *Politecnico di Milano*

08,45 Session C3 - OPTICAL SOURCES I

ROOM C

Chair: S. Selleri - *Università di Parma, IEEE Photonics Italy Chapter Chair*

C3.1 • Spectroscopic and Laser Emission Characterization of Yb Doped Lutetium Orthosilicate (LSO) • G. Toci, M. Vannini - *CNR-INO, Sesto Fiorentino*, A. Pirri - *CNR-IFAC, Sesto Fiorentino*, Y. Shoji, A. Yoshikawa - *Tohoku University, Japan*, V. Babin, J. Hybler, M. Nikl - *Academy of Sciences of the Czech Republic, Czech Republic*

C3.2 • Ceramic Mixed Garnets $\text{Yb}_{0.15}(\text{Lu}_x\text{Y}_{1-x})\text{Al}_5\text{O}_{12}$ as Laser Media • A. Pirri - *CNR-IFAC, Sesto Fiorentino*, G. Toci, M. Vannini - *CNR-INO, 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*

C3.3 • A New THz-Pump/Second Harmonic Probe Experimental Setup • A. Rubano, S. Mou - *Università di Napoli Federico II*, D. Paparo - *CNR-ISASI, Napoli*

C3.4 • Second Harmonic Generation in Fibers Poled by Linearly and Circularly Polarized Pumps • D. Ceoldo, U. Minoni, D. Modotto - *Università di Brescia*, B.M. Shalaby, K. Krupa, A. Tonello, V. Couderc - *Université de Limoges, France*

C3.5 • The ENEA Discharge Produced Plasma EUV Source: Description and Applications • L. Mezi, S. Bollanti, P. Di Lazzaro, F. Flora, D. Murra, A. Torre - *ENEA, Frascati*, L. Businaro, A. Gerardino - *CNR-IFN, Rome*

C3.6 • Single-Mode Regime of Yb-doped SF-PCFs Under Severe Heat Load • E. Coscelli, F. Poli, A. Cucinotta, S. Selleri - *University of Parma*

10,15-10,40 COFFEE BREAK

10,40-12,40 PLENARY SESSION

ROOM A

SYMPOSIUM

Photonics as the Key Technology Transforming Our Cities in a Living Lab

In the context of new urban challenges and growing request of services, our cities need to find innovative solutions to respond in real time to the uses and needs of the citizens. Photonics can be the real catalyst for the sustainable attainment of a smart connected city thanks to a pervasive optical monitoring and to a fiber-based ICT infrastructure. In the symposium the two examples regarding the cities of Bristol and L'Aquila will be presented, describing the research activities of the projects "BRISTOL IS OPEN" and "INCIPICT", respectively. Moreover, the role of photonic technologies in the development of future smart cities and IoT will be discussed, from the sensors for the cognitive inputs to the convergent interconnection networks.

Introduction: Pierpaolo Boffi - *Politecnico di Milano*

Key-note speeches:

- Dimitra Simeonidou - *University of Bristol, UK*
- Fabio Graziosi - *Università degli Studi dell'Aquila*

Round Table: How is Photonics Fundamental for the Deploying of Internet of Things and for the Development of a Smart City?

Coordinator: Mario Martinelli - *Politecnico di Milano*

- Alessandro Cavaciuti - *Cisco Photonics*
- Giorgio Cazzaniga - *SM Optics*
- Mauro Varasi - *Leonardo-Finmeccanica*
- Maddalena Ferrario - *Cohaerentia/Politecnico di Milano*

12,40-14,00 LUNCH BREAK + POSTER PREVIEW 2

14,00 Session A4 - BIOIMAGING

Chair: R. Pini - *CNR-IFAC*

A4.1 • Invited

Whole Mouse Brain Vasculature Imaging with Micrometric Resolution Using Light Sheet Microscopy • A.P. Di Giovanna, L. Silvestri, M.C. Müllenbroich, A.L.A. Mascaro, L. Sacconi, F.S. Pavone - *LENS and University of Florence*

A4.2 • Multi-Modal Optical Imaging of Brain Plasticity After Stroke • E. Conti - *LENS, A.L.A. Mascaro, L. Sacconi - LENS and CNR-INO, Sesto Fiorentino, C. Spalletti - CNR, Neuroscience Institute, Pisa and Scuola Normale Superiore, S. Lai - Scuola Superiore Sant'Anna, C. Alia - CNR, Neuroscience Institute, Pisa and Scuola Superiore Sant'Anna, A. Panarese - Scuola Superiore Sant'Anna, S. Micera - Scuola Superiore Sant'Anna and EPFL, Switzerland, M. Caleo - CNR, Neuroscience Institute, Pisa and Scuola Superiore Sant'Anna, F.S. Pavone - LENS, CNR-INO Sesto Fiorentino and University of Florence*

A4.3 • Characterization of Human Atherosclerotic Plaques Using Multimodal Multiphoton Microscopy • E. Baria - *LENS, R. Cicchi - LENS and CNR-INO, Sesto Fiorentino, G. Nesi, D. Massi - University of Florence, F.S. Pavone - LENS, CNR-INO Sesto Fiorentino and University of Florence*

A4.4 • Functional Imaging of Zebrafish Neuronal Activity by Bessel Illumination-Based SPIM • T. Alterini, L. Turrini, C. Muellenbroich, A. Gheisari, L. Sacconi, L. Silvestri, F. Vanzi, F.S. Pavone - *LENS, Sesto Fiorentino and University of Florence*

A4.5 • A New Compact 8 Channels System for Time-Resolved Diffuse Optical Tomography Based on SiPMs • L. Di Sieno, S. Tagliabue, A. Dalla Mora, E. Martinenghi, A. Farina, A. Pifferi - *Politecnico di Milano*

A4.6 • Imaging of Calcium Signalling in Plant Roots by Light Sheet Fluorescence Microscopy • A. Candeo, C. D'Andrea, G. Valentini, A. Bassi - *Politecnico di Milano, F.G. Doccula, A. Costa - Università degli Studi di Milano*

ROOM A

14,00 Session B4 - OPTICAL NETWORKS AND SYSTEMS

Chair: M. Santagiustina - *Università di Padova*

B4.1 • Invited

Experimental Demonstration of Multi-vendor Interoperable 100G DWDM CFP Line Interfaces • G. Bruno, S. Mosti, A. Tartaglia - *Ericsson Telecomunicazioni*

ROOM B

B4.2 • A Statistical Comparison of Flexible-Rate Transponders in DWDM Networks

• M. Cantono, R. Gaudino, V. Curri - *Politecnico di Torino*

B4.3 • SDN-Enabled Optical Transmission Systems: Programmability and Advanced Features

• M. Svaluto Moreolo, L. Nadal, J.M. Fàbrega - *CTTC, Spain*

B4.4 • A Novel SDN-Like DWDM All-Optical Metro-Access Network Architecture

• T. Muciaccia, V.M.N. Passaro - *Politecnico di Bari*

B4.5 • Fiber Access Cost Models from Road NGN Project

• F. Matera - *Fondazione Ugo Bordoni*, M. Vari - *Università Roma 2 Tor Vergata*, F. Giannone - *CNIT*, L. Valcarenghi - *Scuola Superiore S. Anna*, A. Marotta, C. Antonelli - *Università dell'Aquila*, G. Maier - *Politecnico di Milano*

B4.6 • Ultra-Broadband Network: Mini Optical and Power Cables

• M. Tarsi, M. Piccioni - *Telecom Italia*

14.00 Session C4 - OPTICAL SOURCES II

ROOM C

Chair: P. Laporta - *Politecnico di Milano*

C4.1 • Bow-Tie Cavity for THz Light

• A. Campa, S. Bartalini, L. Consolino, D. Mazzotti, P. De Natale - *CNR-INO, Firenze*, M.S. Vitiello - *CNR-IN, Pisa and Scuola Normale Superiore*

C4.2 • Linewidth Estimation of a Mid Infrared Quantum Cascade Laser by Voltage Noise Spectral Density Measurement

• M.C. Cardilli, M. Dabbicco, G. Scamarcio - *Università degli Studi di Bari and CNR IFN, Bari*

C4.3 • UTOFIA Project - A Novel MOPA Laser Source for a Compact, Cost-Effective System for Underwater Range-Gated Imaging

• S. Dell'Acqua, G. Piccinno, G. Reali - *Bright Solutions*

C4.4 • Perovskite Based Green-Light-Emitting Diodes: Towards Improved Stability

• L. Cinà, A.L. Palma, A. Marsella, A. Agresti, S. Pescetelli, A. Di Carlo - *University of Rome Tor Vergata*

C4.5 • Reliability of Mid-Power LEDs for Lighting Applications

• M. Buffolo, C. De Santi, M. Meneghini, G. Meneghesso, E. Zanoni - *University of Padova*

C4.6 • Glass-Based Hybrid 1-D Dielectric Microcavity: Fabrication and Spectroscopic Assessment

• A. Chiasera - *CNR-IFN, Trento & FBK CMM, Trento*, F. Scotognella - *Politecnico di Milano and CNR-IFN, Milano and Center for Nano Science and Technology@PoliMi, IIT*, S. Normani - *CNR-IFN, Trento & FBK CMM, Trento and CIMAP, France*, S. Valligatla - *CNR-IFN, Trento & FBK CMM, Trento, University of Trento and University of Hyderabad, India*, S. Varas - *CNR-IFN, Trento & FBK CMM, Trento*, J. Jasieniak - *Ian Wark Laboratory, Australia*, L. Criante - *Center for Nano Science and Technology@PoliMi, IIT*, A. Lukowiak - *Institute of Low Temperature and Structure Research, Poland*, D. Ristic - *Ruder Boskovic Institute, Croatia and CEMS, Croatia*, R. Rocha Gonçalves - *Universidade de Sao Paulo, Brazil*, S. Taccheo - *Swansea University, UK*, M. Ivanda - *Ruder Boskovic Institute, Croatia and CEMS, Croatia*, G.C. Righini - *Centro di Studi e Ricerche Enrico Fermi and CNR-IFAC, Sesto Fiorentino*, R. Ramponi - *CNR-IFN, Milano and Politecnico di Milano*, A. Martucci - *Università di Padova*, M. Ferrari - *CNR-IFN, Trento & FBK CMM, Trento and Centro di Studi e Ricerche Enrico Fermi*

C4.7 • SnO₂ Based Glasses: a Viable Photonic System • T.N. Lam Tran - *University of Trento, CNR-IFN, Trento and FBK Photonics Unit, Trento and Ho Chi Minh City University of Technical Education, Vietnam*, M. Meneghetti - *University of Trento, CNR-IFN, Trento and FBK Photonics Unit, Trento*, L. Zur - *Centro di Studi e Ricerche Enrico Fermi, CNR-IFN, Trento and FBK Photonics Unit, Trento*, T.T. Van Tran - *Vietnam National University, Vietnam*, A. Lukowiak - *Institute of Low Temperature and Structure Research, Poland*, D. Zonta - *University of Trento, CNR-IFN, Trento, FBK Photonics Unit, Trento and University of Strathclyde, Glasgow, UK*, G.C. Righini - *Centro di Studi e Ricerche Enrico Fermi and CNR-IFAC, Sesto Fiorentino*, M. Ferrari - *CNR-IFN, Trento, FBK Photonics Unit, Trento and Centro di Studi e Ricerche Enrico Fermi*

15.45-16.45 COFFEE BREAK + POSTER SESSION 2

16.45 Session A5 - EXHIBITOR SHOWCASE

ROOM A

Chair: M. Zontini - *SM Optics*

A5.1 • Advanced Silicon Photonics Packaging at the Integrated Photonic Technologies Center INPHOTEC • G. B. Preve - *INPHOTEC*

A5.2 • TiberCAD: a Tool for Multiscale Simulation of Nanostructured Devices • F. Sacconi, M. Auf der Maur, G. Romano, G. Penazzi, A. Pecchia, A. Di Carlo - *TiberLab*

A5.3 • Raman THz[®] Spectroscopy - Volume Holographic Gratings (VHG) Application for Easy Access to Low Frequency Raman Spectral Region (~5-200 cm⁻¹ - ~ 0.3⁻⁶ THz) • F. Vitucci - *Crisel Instruments*

A5.4 • Graphene-Enhanced Devices - Simulation-Based Design from Microwave to Optical Frequencies • D. Tallini - *CST*

A5.5 • Advanced Solutions for Photonics Applications • L. Calligarich - *Electron-Mec*, G. Galeazzi - *Visiorobotics*

A5.6 • MPPC: State of the Art of Silicon Photomultiplier Technology and Its Application • F. Giovenale - *Hamamatsu Photonics Italia*

A5.7 • MLasers and Multi-Wavelength LED Lightsources for Life Science Applications • F. Renzi - *LOT Quantum Design*

16.45 Session B5 - SPECIAL SESSION PHOTONICS FOR 5G

ROOM B

Chair: G. Parladori - *SM Optics*, F. Matera - *Fondazione Ugo Bordonì*

B5.1 Invited

5G Optical Networking • G. Cazzaniga - *SIAE Microelettronica*

B5.2 • DWDM Single-Fiber Resilient Access Solution for Mobile Front-Haul • R. Magri, A. Tartaglia, A. Deho - *Ericsson Telecomunicazioni*

B5.3 • Advanced Photonic Beamforming for 5G Millimeter-Wave Wireless Networks • E. Tangdiongga, Z. Cao, T. Koonen - *COBRA, Eindhoven University of Technology, The Netherlands*

B5.4 • RSOA-Based Pulse-Width Modulation for Fronthauling • P. Parolari, A. Gatto, L. Combi, P. Boffi, U. Spagnolini, M. Martinelli - *Politecnico di Milano*, R. Brenot - *III-V Lab, Marcoussis, France*

B5.5 • Dimensioning the Physical Layer of DSP-Based Radio Waveforms Aggregation for Fronthauling • M. Befekadu Debebe, R. Gaudino - *Politecnico di Torino*, S. Abrate - *Istituto Superiore Mario Boella*

B5.6 • Software Defined Networks over Carrier Ethernet for 5G: Tests from a GMPLS Test Bed • L. Pulcini, P. Grazioso, A. Valenti, F. Matera - *Fondazione Ugo Bordonì*, D. Del Buono, V. Attanasio - *ISCTI*

WEDNESDAY, JUNE 8, 2016

08.45 Session A6 - CULTURAL HERITAGE

ROOM A

Chair: A. Sytychkova - ENEA, Casaccia

A6.1 • Use of Laser Ablation for Cleaning Marble: Evaluation and Comparison at the Palazzo Vendramin Callergi Venezia (sec XV) and the New York Public Library (sec XIX) • G. Calcagno - Altech Applied Laser Technology

A6.2 • A New Nd:YAG Laser System for the Conservation of Cultural Heritage • L. Bartoli, L. Gioè, A. Zanini - *El.En.*

A6.3 • Vis-NIR Hyperspectral Imaging Scanner for Investigating Mural Paintings • M. Picollo, C. Cucci, G. Bartolozzi, A. Casini, L. Stefani, M. Poggese - CNR-IFAC, Sesto Fiorentino, A. Aldrovandi - CNR-IFAC, Sesto Fiorentino and OPD, Firenze

A6.4 • THz Characterization of Corroded Metals: the Influence of Surface Roughness • I. Cacciari, S. Siano - CNR-IFAC, Sesto Fiorentino

A6.5 • Invited

A mm-Wave/THz 3D Scanner for Mural Paintings • A. Doria, E. Giovenale, G.P. Gallerano - ENEA, Frascati, M. Picollo - CNR-IFAC, Sesto Fiorentino, K. Fukunaga - NICT, Japan

08.45 Session B6 - PHOTONIC DEVICES FOR TLC

ROOM B

Chair: R. Gaudino - Politecnico di Torino

B6.1 • Polarization Insensitive Si Photonics Based Bidirectional Communication Between ROADM Nodes for 5G Radio Access Networks • G. De Angelis, M.V. Preite, T. Cassese - Scuola Superiore Sant'Anna-TeCIP, V. Soriano - CNIT, P. Velha - Scuola Superiore Sant'Anna-TeCIP, A. Bianchi, F. Testa - Ericsson Research, M. Romagnoli - CNIT

B6.2 • Automatic Control of Si-Photonic Multiplexer and Carver for 4x10 Gbit/s L-Band WDM Transmission • A. Melloni, S. Grillanda, M. Carminati, E. Guglielmi, N. Peserico, F. Maulà, G. Ferrari - Politecnico di Milano, A. Dentin, A. Dedè, A. Beretta, D. Nicolato, M. Creatini - Linkra Microtech, B. Holmes, C. Klitis, M. Sorel - University of Glasgow, UK, S. Fu, R. Ji - Huawei Technologies, China, A. Vannucci - Linkra Microtech, M. Sampietro, F. Morichetti - Politecnico di Milano

B6.3 • Silicon Photonic Toolkit for Integrated Switching Matrices • P. Pintus, C. Manganelli, F. Gambini, F. Di Pasquale, C.J. Oton - CNIT and Scuola Superiore Sant'Anna, S. Tondini, M. Mancinelli, C. Castellan, L. Pavesi - Università degli Studi di Trento, F. Testa - Ericsson Research

B6.4 • Silicon on Insulator Reconfigurable 16-QAM Modulator Driven by only Binary Electronics • F. Fresi, A. Malacarne - Scuola Superiore Sant'Anna-TeCIP, V. Soriano, G. Meloni - CNIT, P. Velha - Scuola Superiore Sant'Anna-TeCIP, M. Midrio - CNIT and University of Udine, V. Toccafondo - CNIT, S. Faralli - Scuola Superiore Sant'Anna-TeCIP, M. Romagnoli, L. Poti - CNIT

B6.5 • Invited

Next Generation Terabit Transponders • A. D'Errico - Ericsson Telecomunicazioni, G. Contestabile - Scuola Superiore Sant'Anna-TeCIP

08,45 Session C6 - RAMAN DIAGNOSTICS

ROOM C

Chair: P. Ferraro - CNR-ISASI

C6.1 • Micro-Raman Spectroscopy Study of Conjunctival Surface Epithelium in Dry-Eye Syndrome • G. Rusciano, G. Zito, A. Sasso - *University of Naples Federico II*

C6.2 • Raman Spectroscopy and Digital Holography Reveal Visible Light Photodamage on Human Sperm Cells • A. De Angelis - *CNR-IPB, Naples*, M.A. Ferrara, G. Coppola - *CNR-IMM, Naples*, A.C. De Luca - *CNR-IPB, Naples*

C6.3 • SERS Detection of Bacteria Using Bacteriophages as Recognition Elements Immobilized on Octupolar Nanostructures • M. Rippa, R. Castagna, L. Petti - *CNR-ISASI, Pozzuoli*, M. Pannico, P. Musto - *CNR-IPCB, Pozzuoli*, R. Paradiso, G. Borriello - *Istituto Zooprofilattico Sperimentale del Mezzogiorno*, J. Zyss - *LPQM-ENS, France*

C6.4 • Identification and Classification of Acute Lymphoblastic Leukemia Cells from Peripheral Blood by Raman Spectroscopy • S. Managò, C. Valente - *CNR-IPB, Naples*, P. Mirabelli - *SDN, Istituto di Ricerca Diagnostica e Nucleare*, M. Napolitano, D. Corda, A.C. De Luca - *CNR-IPB, Naples*

C6.5 • Invited

Stimulated Raman Scattering in Single Cell • A. D'Arco - *CNR-IMM, Napoli and Second University of Naples (SUN)*, N. Brancati - *CNR-IHPCN, Napoli*, M.A. Ferrara - *CNR-IMM, Napoli*, M. Frucci - *CNR-IHPCN, Napoli*, M. Indolfi - *CNR-IMM, Napoli*, L. Zeni - *Second University of Naples (SUN)*, L. Sirleto - *CNR-IMM, Napoli*

10,15-10,30 COFFEE BREAK

10,30-13,00 PLENARY SESSION

ROOM A

SYMPOSIUM

Technological R/D in Photonics as an Incubator of Industrial Initiatives in Italy

10,30 Introduction: G. Grasso - *Fondazione CIFE*

Presentations from Italian Technological Institutions

10,35 FBK: G. Pucker

10,50 Inphotec/Scuola Superiore Sant'Anna: S. Doneda

11,05 Politecnico di Milano: A. Melloni

Success Stories of Co-operative Technological Research in Photonics

11,20 Eindhoven T.U./Bright Move: E. Roos

11,35 Fraunhofer ILT Institute: U. Thombsen

11,50 Prima Electro-Convergent Photonics/Politecnico di Torino: G. Perrone

12,05-13,00 Round Table: Which Are the Possible Business Models for Exploiting Photonics Technological Research in Italy

Coordinator: M. Gattiglio - *Prima Electro-Convergent Photonics*

Participants: M. Romagnoli - *CNIT*, G. Pucker - *FBK*, E. Gatti - *Fondazione Politecnico Milano*, S. Firpo - *MISE*, R. Zanco - *RSEED*

13.00-14.00 LUNCH BREAK

14.00 Session A7 - BIOSENSING

ROOM A

Chair: I. Rendina - CNR-IMM

A7.1 • Invited

The Light at the Service of Medicine: the Optical Biosensors Beside the Patient's Bed

• F. Baldini, B. Adinolfi, S. Berneschi - CNR-IFAC, Sesto Fiorentino, C. Berrettoni - CNR-IFAC, Sesto Fiorentino and Siena University, F. Chiavaioli, A. Giannetti, S. Tombelli, C. Trono - CNR-IFAC, Sesto Fiorentino

A7.2 • Invited

Lab on Fiber Label-Free Biosensor Based on Microgel Photonics • M. Giaquinto, A. Micco, A. Aliberti, A. Ricciardi, A. Cutolo, A. Cusano - University of Sannio, M. Ruvo - CNR-IBB, Napoli

A7.3 • Enhanced Fluorescence Detection of miRNA-16 on a Photonic Crystal • F. Frascella, S. Ricciardi - Politecnico di Torino, L. Pasquardini, C. Potrich - Fondazione Bruno Kessler, A. Angelini - Politecnico di Torino, C. Pederzoli - Fondazione Bruno Kessler, L. Boarino, N. De Leo - Istituto Nazionale di Ricerca Metrologica, F. Pirri, E. Descrovi - Politecnico di Torino

A7.4 • Reversible Porous Silicon Based Aptasensor for Label-Free Thrombin Detection • M. Terracciano - CNR-IMM, Naples and University of Naples Federico II, I. Rea - CNR-IMM, Naples, J. Politi - CNR-IMM, Naples and University of Naples Federico II, N. Borbone, G. Oliviero, G. Piccialli - University of Naples Federico II, L. De Stefano - CNR-IMM, Naples

A7.5 • Optical Detection of Tumor Cell Aggressiveness by Means of 3D Silicon Micromachined Structures • S. Merlo, F. Melloni, F. Carpignano - Università di Pavia, M. Torchio, M. Danova - Azienda Ospedaliera di Pavia, N. Panini, E. Erba - Istituto di Ricerche Farmacologiche "Mario Negri", S. Surdo, G. Barillaro - Università di Pisa, F. Aredia, A.I. Scovassi, G. Mazzini - CNR-IGM, Pavia

A7.6 • Use of Photonics to Measure a Novel Breast Tumour Biomarker • D. Gennari, F. Casali, M. Di Paola, A. Meroni, D. Poli, A. Urban - Novaura Group

14.00 Session B7

ROOM B

MULTIPLEXING TECHNIQUES AND MODULATION FORMATS

Chair: R. Castelli - AICT-FEO

B7.1 • Integrated Spatial Division (De)Multiplexer for Few-Mode Fiber Transmission • D. Melati, A. Alippi, A. Melloni - Politecnico di Milano

B7.2 • Novel Diffractive Optics for Mode Division Multiplexing of Optical Vortices Design, Fabrication and Optical Characterization • G. Ruffato, M. Massari, F. Romanato - University of Padova

B7.3 • Mode Demultiplexing by a Michelson Interferometer with Porro Prisms • P. Martelli, P. Boffi, A. Fasiello, M. Martinelli - Politecnico di Milano

B7.4 • Impact of Discretization and Boundary Conditions in Nonlinear Frequency-Division Multiplexing • S. Civelli, E. Forestieri, M. Secondini - Scuola Superiore Sant'Anna-TeCIP

B7.5 • Performance Analysis of Optical Communication Systems with Multilevel Polarization Modulation in "Twisted" Fibers • P. Perrone, S. Betti, G.G. Rutigliano - University of Rome Tor Vergata

B7.6 • Modulation Formats Analysis for Optical Short Reach Interconnects • L.S. Ronga, S. Jayousi - *CNIT*, E. Forestieri, M. Secondini - *Scuola Superiore Sant'Anna*, F. Cavaliere - *Ericsson*

B7.7 • Investigation of Phase Noise Induced by Cross Channel Nonlinear Interference • S. Musetti, P. Serena - *Università degli Studi di Parma*

14,00 Session C7 - PHOTONICS FOR HEALTH I

ROOM C

Chair: R.M. Montoreali - *ENEA*

C7.1 • Invited

Single Molecule Study of Processive Myosin Motors

L. Gardini, F.S. Pavone, M. Capitanio - *LENS and University of Florence*

C7.2 • Tomographic Phase Microscopy as a Tool for Red Blood Cell Morphological Analysis • M. Mugnano - *CNR-ISASI, Pozzuoli and University of Naples Federico II*, P. Memmolo, L. Miccio, F. Merola, P. Ferraro - *CNR-ISASI, Pozzuoli*

C7.3 • Optical Monitoring of Drug Release in Hybrid Patch Based on Polymer Microneedles and Porous Silicon Membrane • P. Dardano, A. Caliò, J. Politi, I. Rea, I. Rendina, L. De Stefano - *CNR-IMM, Naples*

C7.4 • Thin Film Devices for Real-Time Monitoring of DNA Amplification • D. Caputo, E. Parisi, N. Lovecchio, V. Viri, F. Costantini, A. Nascetti, G. de Cesare - *Sapienza University of Rome*, M. Tucci, P. Mangiapane - *ENEA, Casaccia*

C7.5 • Morphological Characterization of Human Keratoconic Corneas by SHG Microscopy • R. Mercatelli - *CNR-INO, Sesto Fiorentino*, F. Ratto, F. Rossi, F. Tatini - *CNR-IFAC, Sesto Fiorentino*, L. Menabuoni - *Public Hospital of Prato*, R. Nicoletti - *C.S.O.*, R. Pini - *CNR-IFAC, Sesto Fiorentino*, F. Pavone - *LENS, CNR-INO, Sesto Fiorentino and University of Florence*, R. Cicchi - *CNR-INO, Sesto Fiorentino and LENS*

C7.6 • Tip-Enhanced Infrared Nanospectroscopy of Transmembrane Proteins • M. Ortolani, M. Badioli, L. Baldassarre, V. Giliberti, P. Calvani, A. Nucara - *Sapienza University of Rome*, U. Schade, P. Hegemann, E. Ritter, L. Puska - *Helmoltz Zentrum Berlin, Germany*

15,45 Session A8 - CHEMICAL, BIOCHEMICAL AND MEDICAL SENSORS ROOM A

Chair: L. Poletto - *CNR-IFN*

A8.1 • TDLAS Oxygen Sensor for In-Line Measurements on Flow-Packed Products • L. Cocola, M. Fedel - *CNR-IFN, Padova*, G. Tondello - *CNR-IFN, Padova and LPRO*, L. Poletto - *CNR-IFN, Padova*

A8.2 • Label-Free Biosensors Based on Long Period Grating Combined with Thin Titania-Silica Film Overlays • F. Chiavaioli, C. Trono, A. Giannetti, S. Tombelli, F. Baldini - *CNR-IFAC, Sesto Fiorentino*, P. Biswas, S. Jana, S. Bandyopadhyay, N. Basumallick, S. Bera, A. Mallick - *Central Glass and Ceramic Research Institute, India*

A8.3 • Label Free Chemical Sensors Based on Plasmonic Nanostructures: Modeling and Functional Characterization • A. Colombelli, M.G. Manera, A. Taurino, R. Rella - *CNR-IMM, Lecce*, A.P. Caricato - *University of Salento*, N. Punjabi - *Indian Institute of Technology, India*

A8.4 • Detection of Angiopoietin 2 Biomarker in Human Plasma Using a Biosensing Platform Based on Bloch Surface Wave Enhanced Fluorescence • R. Rizzo - *Politecnico di Torino*, M. Alvaro - *Università di Torino*, N. Danz - *Fraunhofer Institute for Applied Optics and Precision Engineering, Germany*, E. Descrovi - *Politecnico di Torino*, S. Schmieder - *Fraunhofer Institute for Material and Beam Technology IWS Dresden, Germany*, A. Sinibaldi - *Sapienza Università di Roma*, R. Chandrawati - *Imperial College London, UK*, L. Napione - *Università di Torino*, S. Rana - *Imperial College London, UK*, P. Munzert - *Fraunhofer Institute for Applied Optics and Precision Engineering, Germany*, T. Schubert - *KDS Raderberger, Germany*, E. Maillart - *Horiba Scientific, France*, A. Anopchenko - *Sapienza Università di Roma*, P. Rivolo - *Politecnico di Torino*, A. Mascioletti - *Labor, F. Sonntag - Fraunhofer Institute for Material and Beam Technology IWS Dresden, Germany*, F. Bussolino - *Università di Torino*, M. Stevens - *Imperial College London, UK*, F. Michelotti - *Sapienza Università di Roma*

A8.5 • Optical Fiber Meta-Tips as a New Platform for Local Light Manipulation • M. Principe, M. Consales, A. Micco, G. Castaldi, A. Cutolo, V. Galdi, A. Cusano - *University of Sannio*, A. Crescitelli, E. Esposito - *CNR-IMM, Naples*, V. La Ferrara - *ENEA, Portici*

A8.6 • Time-Resolved Optical Studies of Dye-Stabilised Au and Ag Nanoparticles: Effects on Dye Emission and on the Plasmon Resonance • D. Catone, P. O'Keeffe, A. Paladini, F. Toschi, S. Turchini, L. Avaldi - *CNR-ISM, Rome*, G. Testa, A. Cartoni, I. Fratoddi, I. Venditti - *Sapienza University of Rome*, A. Alabastri, R. Proietti Zaccaria - *Istituto Italiano di Tecnologia*

15.45 Session B8 - GRAPHENE AND SOLAR CELLS

ROOM B

Chair: A. Busacca - *Università di Palermo*

B8.1 • Photoelectrical Response of Graphene Field Effect Transistors (GFETs) • M.A. Giambra, A. Benfante, S. Stivala, E. Calandra, A. Busacca - *University of Palermo*, W.H.P. Pernice, R. Danneau - *Karlsruhe Institute of Technology, Germany*

B8.2 • Reconfigurable Optical Beamformer with Graphene-Based Fine-Tunable Optical Delay Line • D. Conteduca, T. Tatoli, F. Innone, F. Dell'Olio, C. Ciminelli, M.N. Armenise - *Politecnico di Bari*

B8.3 • High Efficient Graphene Based Large Area (100cm²) Perovskite Solar Module • A. Agresti, S. Pescetelli, S. Razza, A.L. Palma, B. Taheri, A. Di Carlo - *University of Rome Tor Vergata*

B8.4 • Solution-Processed Indium Doped Zinc Oxide as Electron Transport Layer for Inverted Polymer Solar Cells • P. Morvillo, R. Diana, E. Bobeico, C. Minarini - *ENEA, Portici*

B8.5 • Engineered Graded-Index Optical Concentrators • M. Zitelli - *Photoneco*

B8.6 • Insight into the Current Output of Polymer Solar Cells: a Comparison Between the Standard and Inverted Architecture • P. Morvillo, R. Ricciardi, E. Bobeico, C. Minarini - *ENEA, Portici*

B8.7 • Solar Concentrators in Space with Holographic Optical Elements - Realization and Thermal-Optical Characterization • G. Bianco, M.A. Ferrara - *CNR-IMM, Napoli*, F. Borbone, R. Centore - *University of Naples Federico II*, V. Striano - *CGS*, G. Coppola - *CNR-IMM, Naples*

15.45 Session C8 - PHOTONICS FOR HEALTH II

ROOM C

Chair: P. Proposito - *University of Rome Tor Vergata*

C8.1 • Advanced Biocompatible Photolithographic Scaffolds for Tissue Engineering

• F. Mochi, P. Proposito, R. Francini, F. De Matteis, M. Casalboni, S. Melino, M. Ciocci, P. Di Nardo - *University of Rome Tor Vergata*, S. Ksenzov, S. Schrader - *Wildau University of Applied Sciences, Germany*

C8.2 • Measuring Electrical Conductibility of Cardiac T-Tubular Systems • M. Scardigli - *LENS*, C. Crocini - *LENS and CNR-INO, Florence*, C. Ferrantini - *University of Florence, T. Gabbrielli - LENS*, L. Silvestri - *LENS and CNR-INO, Florence*, R. Coppini, C. Tesi, E. Cerbai, C. Poggessi - *University of Florence*, F.S. Pavone - *LENS and University of Florence*, L. Sacconi - *LENS and CNR-INO, Florence*

C8.3 • Smart Technologies: Useful Tools to Assess the Exposure to Solar Ultraviolet Radiation for General Population and Outdoor Workers • A. Militello, M. Borra, C. Grandi - *INAIL*, F. Bisegna - *Sapienza University of Rome*

C8.4 • Optical Modelling of the Stomach Tissue to Optimize the Phototherapy Efficacy Against H. Pylori Infection • G. Romano, S. Calusi, B. Orsini, P. Faraoni, A. Gnerucci, F. Fusi - *University of Florence*, G. Tortora, A. Menciassi - *Scuola Superiore Sant'Anna*

C8.5 • Quantitative Phase-Imaging Method for Measuring the Phototoxicity Effects of Blue Light on In-Vitro Cell • A. Calabuig, M. Mugnano - *CNR-ISASI and University of Naples Federico II*, L. Miccio, S. Grilli, P. Ferraro - *CNR-ISASI*

C8.6 • Lithium Fluoride Thin Film Detectors for Proton Beam Dose-Mapping by Conventional Fluorescence Microscopy • M. Piccinini, A. Ampollini, L. Picardi, C. Ron-sivalle, F. Bonfigli, S. Libera, M.A. Vincenti, R.M. Montereali - *ENEA, Frascati*, E. Nichelatti - *ENEA, Casaccia*

17.15 - 17.30 CLOSING SESSION

ROOM A

POSTER SESSIONS

POSTER SESSION 1

Monday, June 6 (15,45-16,45 with Preview 12,40-14,00)

P1.1 • Synthesis and Characterization of Thermally Evaporated PbS Thin Films Photoconductors • A. Ferrone, A. De Iacovo, L. Colace - *University of Roma Tre*, C. Ferrari, F. Rossi - *CNR-IMEM, Parma*

P1.2 • Focused Beam Generation of Nematicons • N. Karimi, A. Alberucci, M. Virkki, M. Kauranen - *Tampere University of Technology, Finland*, G. Assanto - *Tampere University of Technology, Finland and University Roma Tre*

P1.3 • Photo-Stabilization of Nematicons • N. Karimi, A. Alberucci, M. Virkki, A. Priimagi, M. Kauranen - *Tampere University of Technology, Finland*, G. Assanto - *Tampere University of Technology, Finland and University Roma Tre*

P1.4 • Photonic Integrated Circuits' Packaging Issues: a Multi-Physical Analysis • A. Alippi, D. Melati, N. Peserico - *Politecnico di Milano*, A. Dedè, A. Vannucci - *Linkra*, A. Melloni - *Politecnico di Milano*

P1.5 • PICs4All Project: Ease the Access to Generic Foundry Technologies for Photonic Circuits • D. Melati, A. Melloni - *Politecnico di Milano*

P1.6 • Assessing Lighting Quality in Daylit Work Environments - Some Considerations and New Proposals • L. Bellia - *University of Naples Federico II*, G. Barbato - *Second University of Naples*, O. Li Rosi, L. Blaso - *ENEA, Ispra*

P1.7 • Development of High-Refractive Index Titanate-Silk Nanocomposites for Biopolymer-Based Optical Devices • E. Colusso, A. Martucci - *Università di Padova*, G. Perotto, F. Omenetto - *Tufts University, Boston, USA*

P1.8 • On Noise Suppression in Digital Holography Reconstructions and Optical Display • V. Bianco, P. Memmolo, M. Paturzo, A. Finizio, P. Ferraro - *CNR-ISASI, Pozzuoli*

P1.9 • Spectral Reflectivity Measurements on Glass Capillaries for Micro-Fluidic Applications • G. Rigamonti, S. Merlo - *Università di Pavia*, F. Carpignano - *Università di Pavia and Plasmore*

P1.10 • Self-Confined Beams with Competing Nonlinearities in Nematic Liquid Crystals • A. Piccardi - *University Roma Tre*, U. Laudyn - *Warsaw University of Technology, Poland*, A. Alberucci - *University Roma Tre*, M. Kwasny - *Warsaw University of Technology, Poland*, G. Assanto - *University Roma Tre and Tampere University of Technology*

P1.11 • Optical Low-Coherence Reflectometry for Non-Destructive Testing of Silicon Micromachined Devices • F. Carpignano - *Università di Pavia*, S. Surdo, G. Barillaro - *Università degli Studi di Pisa*, S. Merlo - *Università di Pavia*

P1.12 • Wide Band External Cavity Laser for Biomedical Applications • A. Righetti, F. Meli, M.C. Ubaldi, S.S. Bosso, G. Grasso - *Fondazione CIFE*

P1.13 • Universal Quasi-Static Limit for Plasmon-Enhanced Optical Chirality • P. Biagioni, M. Celebrano, G. Pellegrini, L. Duò, M. Finazzi - *Politecnico di Milano*

P1.14 • Silicon-Photonic Plasmonic Waveguides with Ferroelectric Materials for Electro-Optic Modulators • P. Boffi, P. Martelli, A. Fasiello, M. Brunero, A. Gatto, M. Martinelli - *Politecnico di Milano*, S. Kondo, T. Yamada - *Nagoya University, Japan*, H. Suzuki, N. Wakiya - *Shizuoka University, Japan*, T. Shiota, K. Shinozaki - *Tokyo Institute of Technology, Japan*, P. Ma, J. Leuthold - *ETH Zurich, Switzerland*

P1.15 • A Comparison of Extreme Local Field Enhancement in Self-Similar and Dimer Plasmonic Nanoantennas • G. Pellegrini, M. Celebrano, M. Finazzi, L. Duò, P. Biazioni - *Politecnico di Milano*

P1.16 • Gold and Silver Functionalized Nanoparticles as Advanced Materials for Optoelectronic Devices • L. Fontana, I. Venditti, I. Fratoddi, G. Leahu, A. Belardini, R. Li Voti, C. Sibilia, R. Matassa, G. Familiari - *Sapienza University of Rome*

P1.17 • Plasmonic Nanoparticle Detection in Cells by Combined Statistical/Microspectroscopy Technique • A. Gnerucci, G. Romano, F. Fusi - *University of Florence*, F. Ratto, S. Centi, R. Pini - *CNR-IFAC, Sesto Fiorentino*, M. Baccini, U. Santosuosso - *University of Florence*

P1.18 • Determination of Coupling Regime of High-Q Resonators Using Cavity Ring Down Spectroscopy • A. Barucci - *CNR-IFAC, Sesto Fiorentino*, M. Arjmand - *University of Isfahan, Iran*, D. Farnesi - *Enrico Fermi Centre and CNR-IFAC, Sesto Fiorentino*, S. Berneschi - *CNR-IFAC, Sesto Fiorentino*, G.C. Righini - *Enrico Fermi Centre*, S. Soria - *CNR-IFAC, Sesto Fiorentino*, M. Soltanolkotabi - *University of Isfahan, Iran*, G. Nunzi Conti - *CNR-IFAC, Sesto Fiorentino*

P1.19 • Floating Zone Sapphire with Moving Heater • G. Anatol, M. Scudu

P1.20 • SPR Sensors Based on Bilayer Metals in a D-Shaped Plastic Optical Fiber. Analysis and Experimental Results with Different Metals • N. Cennamo - *Second University of Naples*, L. De Maria, C. Chemelli - *Ricerca sul Sistema Energetico-RSE*, P. Zupella, M.G. Pelizzo, A.J. Corso - *CNR-IFN, Padova*, M. Pesavento - *University of Pavia*, F. Mattiello, L. Zeni - *Second University of Naples*

P1.21 • Arc-Induced Long Period Gratings in Fluorine-Doped Optical Fibers • F. Esposito, R. Ranjan, A. Iadicicco, S. Campopiano - *University of Naples Parthenope*, A. Stancalie, D. Sporea - *National Institute Laser, Romania*

P1.22 • Transparent Conductive Multilayer Films on Flexible Substrate for Electric Field Shielding Applications • C. Chemelli, L. De Maria, S. Marchionna, R. Malgesini, G. Pirovano - *Ricerca sul Sistema Energetico-RSE*

P1.23 • Remote LED Lighting Technology for Producing and Processing Food • F. Battisti, L. Scapin - *IODA*, L. Lessio, S. Pastore - *INAF-Astronomical Observatory of Padova*

P1.24 • Fluorimetric Study of Graphene Oxide Reduction by Microwave Heating • A. Longo, G. Carotenuto - *CNR-IPCB, Portici*, G. Ambrosone - *University of Naples Federico II and CNR-SPIN, Napoli*, U. Coscia - *University of Naples Federico II and CNISM, Napoli*

P1.25 • Structural and Electrical Characterizations of Polymer-Supported Graphene Fabricated by Graphite Nanoplatelets • M. Palomba, G. Carotenuto - *CNR-IPCB, Portici*, U. Coscia - *University of Naples Federico II and CNISM, Napoli*, G. Ambrosone - *University of Naples Federico II and CNR-SPIN, Napoli*

P1.26 • Fiber Optic Fabry Perot Pressure Sensor Based on Commercial Ferule • P. Di Palma, D. Natale, A. Iadicicco, S. Campopiano - *University of Naples Parthenope*

P1.27 • Measurement of Moisture Content in Masonry Materials by Active Distributed Optical Fiber Sensors • A. Minardo, E. Catalano, L. Zeni, R. Agliata, R. Greco, L. Mollo - *Seconda Università di Napoli*

P1.28 • Picomolar Detection with Optofluidic Spectroscopy On-Chip • G. Persichetti, I.A. Grimaldi, G. Onorato, G. Testa, R. Bernini - *CNR-IREA, Napoli*

P1.29 • A Simple Integration Approach Between Self-Assembled Polymeric Microbottle Resonators and Planar Waveguide • I.A. Grimaldi, G. Testa, R. Bernini - *CNR-IREA, Napoli*, S. Berneschi, F. Baldini, G. Nunzi Conti - *CNR-IFAC, Sesto Fiorentino*

P1.30 • Power Lines Sag Measurements by a New IR Laser Scanning System • E. Golinelli, U. Perini, G. Ogliaari - *Ricerca sul Sistema Energetico-RSE*

P1.31 • Terahertz Time-Domain Spectroscopy Based on Photoconductive Antennas • G. Balistreri, A. Tomasino, S. Stivala, P. Livreri, A.C. Busacca, A.C. Cino - *University of Palermo*

POSTER SESSION 2

Tuesday, June 7 (15,45-16,45 with Preview 12,40-14,00)

P2.1 • Multidimensional Secure Multilevel Polarization Shift Keying • G.G. Rutigliano, S. Betti, P. Perrone - *University of Rome Tor Vergata*

P2.2 • Nonlinear Interaction Length in Unmanaged and Managed Dispersion Compensation Links • F. Matera - *Fondazione Ugo Bordon*

P2.3 • Impact of WDM Impairments in Energy-Aware Design of Optical Networks • A. Coiro - *Sapienza University of Rome*, F. Matera - *Fondazione Ugo Bordon*

P2.4 • Measurement of Mode Coupling Induced by Twist in Multimode Optical Fibers • F. Chiarello, L. Marcon, L. Palmieri, M. Santagiustina, A. Galtarossa - *University of Padova*

P2.5 • PCIe-Based Network Architectures over Optical Fiber Links: an Insight from the ADVENT Project • P. Boffi, P. Parolari, P. Martelli, A. Gatto, M. Martinelli - *Politecnico di Milano*, A. Albanese, V. Costa, P.S. Crosta, C. Meani, P. Paglierani - *Italtel*

P2.6 • An Experimental 4D Video Communication Platform • V. Attanasio - *University of Rome Tor Vergata and ISCTI*, S. Betti - *University of Rome Tor Vergata*, D. Carleo - *University of Rome Tor Vergata and ISCTI*, A. Chiari - *ISCTI*, G. Marcone, M. Tabacchiera - *University of Rome Tor Vergata and ISCTI*, F. Zanuccoli - *University of Rome Tor Vergata*

P2.7 • Implementation of Superconducting Nanowire Single Photon Detectors for QIP Experiments • F. Mattioli, A. Gaggero, M. Graziosi, R. Leoni - *CNR-IFN, Rome*, A. Fiore - *Eindhoven University of Technology, The Netherlands*

P2.8 • FDM-Based High-Capacity Short-Reach Systems Exploiting VCSEL Sources • A. Gatto, D. Argenio, P. Boffi - *Politecnico di Milano*

P2.9 • Maintenance of PV Systems: How to Reduce Fire Risk and Enhance the Overall Reliability of PV Systems • P. Cancelliere - *Ministero dell'Interno CNVVF*, C. Liciotti - *KB Development*

P2.10 • A Comparative Study Between Periodic, Aperiodic and Random Texturing for High Efficiency Microcrystalline Silicon Solar Cells • A. Micco, A. Ricciardi, M. Pisco, A. Cusano - *University of Sannio*, I. Usatii, G. Pandolfi, L.V. Mercaldo, P. Delli Veneri - *ENEA, Portici*

P2.11 • Influence of Light Scattering on the Photon Solar Sail Thrust • M. Carosi, V. Macchiarulo, G. Maddalena, F. Bonetti, C. Circi - *Sapienza University of Rome*, S. Scaglione, D. Zola - *ENEA, Casaccia*

P2.12 • Multimodal Fiber Optic Based Spectroscopic Approach for the Grading and Staging of Bladder Tumors • S. Anand, R. Cicchi - *CNR-INO, Florence and LENS*, A. Crisci, G. Nesi, M. Carini - *University of Florence*, F.S. Pavone - *LENS and University of Florence*

P2.13 • Graphene Like Materials on TCO/Silicon Schottky Junction Solar Cells • L. Lancellotti - *ENEA, Portici*, L. Sansone - *CNR-IPCB, Naples*, E. Bobeico - *ENEA, Portici*, E. Lago - *Istituto Italiano di Tecnologia*, M. Casalino - *CNR-IMM, Naples*, M. della Noce - *ENEA, Portici*, A. Borriello, M. Giordano - *CNR-IPCB, Naples*, P. Delli Veneri - *ENEA, Portici*

- P2.14 • Bioresorbable Phosphate Glass Optical Fibers** • N.G. Boetti - *Istituto Superiore Mario Boella*, E. Ceci-Ginestrelli, D. Pugliese, D. Janner, D. Milanese - *Politecnico di Torino*
- P2.15 • Morphological and Optical Properties of Perovskite Films for Planar Solar Cells** • V. La Ferrara, A. De Maria, L.V. Mercaldo, P. Delli Veneri - *ENEA, Portici*
- P2.16 • Characterization of the Metabolic State of Different Tissues During Zebrafish Development by Non-Linear Microscopy** • C. Giubani - *LENS*, R. Mercatelli - *CNR-INO, Sesto Fiorentino*, F. Vanzi - *CNR-INO, Sesto Fiorentino and University of Florence*, R. Cicchi - *LENS and CNR-INO, Sesto Fiorentino*, F.S. Pavone - *LENS, CNR-INO, Sesto Fiorentino and University of Florence*
- P2.17 • Gold Nanorods in Co-Sensitized DSSCs for BIPV - Measurements and Tests for Different Sintering Procedures and Capping Techniques** • S. Lai, S. Centi, F. Ratto, R. Pini, M. Mazzoni - *CNR-IFAC, Sesto Fiorentino*, L. Zani, M. Calamante, A. Mordini, G. Reginato - *CNR-ICCOM*
- P2.18 • Low Emission Sputtered Coatings for Smart Glazing - How to Manage the Upcoming Light in Energy Efficient Buildings by Means of AlN-Ag Based Sputtered Optical Filters** • A. Castaldo, M. Ferrara, A. Antonaia - *ENEA, Portici*
- P2.19 • Interaction Between Different Graphene Ion Doping and the Antireflection Coating in Graphene/Silicon Schottky Barrier Solar Cells** • L. Lancellotti, E. Bobeico - *ENEA, Portici*, A. Capasso, E. Lago - *Istituto Italiano di Tecnologia*, P. Delli Veneri - *ENEA, Portici*, N. Lisi - *ENEA, Casaccia*
- P2.20 • On the Determination of the Backscattering Profile with Lidar in Presence of Widespread Smoke** • M. Gelfusa, A. Malizia, S. Parracino, M. Lungaroni, P. Gaudio - *University of Rome Tor Vergata*, J. Vega - *CIEMAT, Spain*, A. Murari - *Consorzio RFX*, L. De Leo, C. Perrimezzi - *Crati c/o Unical*
- P2.21 • Optical and Electrical Properties of TiO₂ Based Transparent Conductive Films and Three-Layers Systems** • M.L. Grilli, A. Sytchkova, M.R. Mancini, A. Piegari - *ENEA, Casaccia*, F. Zurlo, E. Di Bartolomeo - *University of Rome Tor Vergata*
- P2.22 • Features Extraction for Images from Stimulated Raman Scattering** • N. Brancati - *CNR-IHPCN, Napoli*, A. D'Arco - *CNR-IMM, Napoli and Second University of Naples (SUN)*, M.A. Ferrara, M. Indolfi, L. Sirleto - *CNR-IMM, Napoli*, M. Frucci - *CNR-IHPCN, Napoli*
- P2.23 • Optical Transmittance at Cryogenic Temperatures in CVD Graphene** • D. Zola, N. Lisi, T.M. Dikonimos, S. Scaglione - *ENEA, Casaccia*, A. Capasso - *Istituto Italiano di Tecnologia*
- P2.24 • Detection of the Glass Transition of Polymers Used in Art and Art-Conservation Using Raman Spectroscopy** • I. Osticioli, D. Ciofini, A.A. Mencaglia, S. Siano - *CNR-IFAC, Sesto Fiorentino*
- P2.25 • Optimized LIPS Elemental Depth Profiling of Bronzes Using 3D Microscopy** • J. Agresti, I. Cacciari, S. Siano - *CNR-IFAC, Sesto Fiorentino*
- P2.26 • Spectroscopic Characterisation of Laser-Induced Effects on Modern Paint Layers** • D. Ciofini, S. Siano - *CNR-IFAC, Sesto Fiorentino*
- P2.27 • Biosensing Platform Based on SiPM Technology** • M.F. Santangelo - *CNR-IMM, Catania and University of Palermo*, E.L. Sciuto - *University of Catania*, A.C. Busacca - *University of Palermo*, S. Petralia, S. Conoci - *STMicroelectronics*, S. Libertino - *CNR-IMM, Catania*
- P2.28 • Choice of the Proper Laser Wavelength in the Soft Tissues Oral Surgery: "Ex Vivo" Study** • C. Fornaini - *University of Parma and University of Nice, France*, M. Sozzi, F. Poli, S. Selleri, A. Cucinotta - *University of Parma*, E. Merigo, J.P. Rocca - *University of Nice, France*

PARALLEL EVENTS

Monday June 6 2016, 14,00-15,00

AEIT-CORIFI Communications

Roberta Ramponi - *President AEIT-CORIFI*

Mario Martinelli - *Vice-President AEIT-CORIFI and AEIT-AICT*

ROOM D

Monday June 6 2016, 15,00-16,00

Horizon 2020: Funding Opportunities in Photonics

Serena Borgna - *APRE - BIO, NMBP, ERC National Contact Point*

ROOM D

Tuesday June 7 2016, 09,00-10,00

Presentation of ACTPHAST Platform

ACTPHAST (Access CenTer for PHotonics innovAtion Solutions and Technology Support) is a unique "one-stop-shop" for supporting photonics innovation by European companies, which is financially supported by the European Commission under the FP7 framework.
<http://www.actphast.eu/>

ROOM D

Tuesday June 7 2016, 14,00-16,00

Brokerage Event Face-to-Face: Industry meets Innovation

There will be a session of scheduled face-to-face meetings between industry and researchers, to promote talks between representatives of industries and young researchers or experts, concerning professional development in the field and future collaborations.

BIBLIOTECA BOAGA

Tuesday June 7 2016, 16,30-18,30

Methodologies and Best Practices to Finance Innovation

Organised by CiaoTech PNO, the session will focus on:

- How to write and manage a successful proposal for your research and development projects financed by public funds;
- Best practices in the photonics sector: the LightJumps project;
- Invest readiness, European Investment Bank and European Investment Fund instruments, Regional investment strategies.

ROOM D

Wednesday June 8 2016, 14,00-17,00 - WORKSHOP

Optical Quantum Information

Coordinators: F.A. Bovino - *Leonardo-Finmeccanica*

C. Sibilia - *Sapienza Università di Roma*

PROGRAM:

14,00 Quantum Metamaterials and Quantum Optics with Metamaterials • Nikolay Zheludev - *University of Southampton, UK*

14,45 Applications of Quantum Photonics, an Industry Perspective • B. Sanguinetti - *Université de Genève and ID Quantique, Switzerland*

15,30 Superconducting Nanowires: Material Issue versus Quantum Technologies • Roberto Cristiano - *CNR-SPIN*

15,50 Dark Counts and Mechanisms in Hybrid Superconducting Single Photon Detectors • Giampiero Pepe - *Università di Napoli Federico II and CNR-SPIN*

16,15 Efficient Quantum Computing • F.A. Bovino - *Leonardo & Sapienza Univ. di Roma*

ROOM D

