

**Emiliano Descrovi (09/10/1974)**

Associate Professor of Physics

Department of Applied Science and Technology (DISAT), Politecnico di Torino, Italy

H-index: 25

About 1400 Total Citations 2005-2017

**Education and Professional Experience****1999** Trainee at Fermi National Laboratory (IL, USA).**1999** Master in Physics, Università degli Studi di Torino, score: 110/110 with honors**2000-2005** Research assistant , Institut de Microtechnique -IMT- Université de Neuchâtel (CH)**2005** PhD, University of Neuchatel, Thesis title: Longitudinally polarized fields in near-field imaging systems ([http://doc.rero.ch/lm.php?url=1000,40,4,20060405133121-NN/1\\_these\\_DescroviE.pdf](http://doc.rero.ch/lm.php?url=1000,40,4,20060405133121-NN/1_these_DescroviE.pdf))**2005-2012** PostDoc, Department of Applied Science and Technology (DISAT) Politecnico di Torino (IT)**2011-2012** Scientific collaborator, Italian Institute of Technology, Department of Nanostructures (IT)**2012** Permanent Researcher at DISAT- Politecnico di Torino (IT)**2013** Visiting Professor at Ecole Polytechnique Federale de Lausanne (CH)**2014-present** Associate Professor in Physics at DISAT- Politecnico di Torino (IT)**2015-present** Associate to the Institute of Food Science – National Research Council of Italy, Avellino (IT)**2015-present** Associate to the Istituto Nazionale di Ricerca Metrologica, Torino (IT)**2016-2017** Visiting Professor at Università Cattolica del Sacro Cuore (IT)**2017** Visiting Professor at Ecole Polytechnique Federale de Lausanne (CH)**Reviewing activity and Committee membership**

**Invited Reviewer for:** ACS Applied Materials and Interfaces (ACS); Journal of Lightwave Technology (IEEE, OSA); ACS Photonics (ACS); Light: Science & Applications (Nature Publishing Group), ACS Nano (ACS), Journal of Physical Chemistry C (ACS), ACS Sensors (ACS), Nanotechnology (IOP), Optics Letters (OSA), Applied Optics (OSA), Optics Express (OSA), J. Opt. Soc. Am. A (OSA), J. Opt. Soc. Am. B (OSA), Chinese Optics Letters (OSA), Applied Physics Letters (AIP), Journal of Applied Physics (AIP), Plasmonics (Springer), Journal of Microscopy (Wiley), Applied Surface Science (Elsevier), Journal of European Optical Society-Rapid Communication (EOS), Sensors and Actuators B (Elsevier), Sensors and Actuators A (Elsevier), BioNanoScience (Springer), Sensors (MDPI), Thin Solid Films (Elsevier), Journal of Scientific Research and Reports (ScienceDomain International), Journal of NanoBioTechnology (Springer), Crystals (MDPI), Materials Research Express (IOP), Measurement Science and Technology (IOP). Optical Materials Express (OSA), Science and Technology of Advanced Materials (IOP), Molecules (MDPI), Microelectronics Engineering (Elsevier), Journal of Materials Chemistry C (RSC).

**2010-2013** Member of Editorial Board for Journal of Nanoscience Letters**2010- present** Project reviewer for the “Office of Basic Energy Sciences”, U.S. Department of Energy.

**2011-present** Scientific committee for Micro and Nano Engineering '10, Micro and Nano Engineering '11, Micro and Nano Engineering '12, MNE2013, MNE2014, MNE2015, MNE2016, MNE2017 and the Optical Symposium OEPT 2010, OEPT2011, OEPT2012, 1st International Conference on Sensors Engineering and Electronics Instrumental Advances (SEIA 2015), The First International Conference on Advances in Sensors, Actuators, Metering and Sensing ALLSENSORS 2016 April 24 - 28, 2016 - Venice, Italy, ALLSENSORS 2017 March 19 - 23, 2017 - Nice, France.

**2012** National Substitute Member for the European COST Action MP0803 “Plasmonics Components and Devices”**2012** Italian ANVUR National Evaluator**2015** Scientific Committee NanoTechItaly (Bologna, Italy 2015)**2015-2017** Member of Editorial Board for Scientific Reports (Nature Publishing Group).**2016** National Evaluator PRIN projects proposals**2017** Guest Editor for Special Issue “Surface Waves on Planar Photonic Crystals”, Applied Sciences, MDPI [http://www.mdpi.com/journal/applsci/special\\_issues/Planar\\_Photonic\\_Crystals](http://www.mdpi.com/journal/applsci/special_issues/Planar_Photonic_Crystals)**2017** Co-organizer “Bloch Surface Wave Workshop”, EPFL, Neuchatel 18th-19th May 2017.

### ***Present and Past PhD students supervised***

Daniele Brunazzo, at DISMIC, Politecnico di Torino, 2009-2011.  
 Angelo Angelini, at DISAT, Politecnico di Torino, 2012-2014.  
 Valeria Moi, at DISAT, Politecnico di Torino, 2012-2014.  
 Riccardo Rizzo, at DISAT, Politecnico di Torino, 2014-2016.  
 Federica Pirani, at DISAT, Politecnico di Torino, 2015-2017.  
 Ugo Stella, at DISAT, Politecnico di Torino, 2016-2018.

### ***Awards***

**2010** Young Researcher Award at Politecnico di Torino.  
**2010** Selected by the New York Academy of Science as one of the two Europe's young researchers representatives for the Science and Technology in Society forum 2010, Kyoto.  
**2013** Selected for the World Science Forum, Rio de Janeiro by the Brazilian Academy of Sciences.

### ***Projects***

**2016** Morphing Metamaterials for Filtering and Energy Lensing Applications, Call “Alta Scuola Politecnica” XII cycle (2016-2017).  
**2016** Food Digital Monitoring, Piedmont Regional Call “Piattaforma Tecnologica Fabbrica Intelligente”, 2016-2018.  
**2012** Unit coordinator for the European FP7 STREP Project “BILOBA” (Grant no: 318035), 2012-2015, [www.biloba-project.eu](http://www.biloba-project.eu)  
**2009** Member of the Scientific Board for the Piedmont Regional Project “PHOENICS”, 2009-2015.

### ***Research Areas***

#### **NanoPhotonics**

The concentration of far-field propagating electromagnetic energy in localized areas and vice-versa, as well as the control of the radiation angular pattern of radiation emitted by localized sources is of outstanding relevance in a wide variety of fields, including lighting, energy harvesting and molecular sensing. Photonic crystals are well suited to this aim, as they offer the possibility to control light propagation within dielectric materials with micrometric precision. Photonic crystals are periodic dielectric structures whose periodicity is comparable with the electromagnetic wavelength. Due to low intrinsic losses in dielectric materials at the visible wavelengths, photonic crystal resonators show narrow resonances with quality factors that can be orders of magnitude higher compared to metallic resonators based, e.g. on plasmonic effects. I studied the interaction of dielectric photonic crystals with organic emitters, in order to achieve a close control over emission features such as: angular radiation pattern, emission wavelength and radiative decay lifetime. In particular, multilayered photonic crystals sustaining surface modes (Bloch Surface Waves) at their truncation interface, has been considered in the last 10 years, in an attempt to mimic and improve many concepts imported from plasmonics.

#### **On-chip Molecular Sensing**

During the last years, many different fields of research like biology, biochemistry and pharmaceutics run in parallel with the need of employing new optical sensing techniques that allow the detection of small quantities of analyte in a liquid or gaseous samples. Plasmonics is offering many different strategies for improving the detection performances in the field of biosensing, according to both label-free and fluorescence-based methods. However, the main limitation of the plasmonic approach relies in the absorption losses experienced with metallic micro/nanostructures. In order to overcome this issue, all-dielectric photonic structures can be employed. In my group, we managed to design and fabricate opto-fluidic chips based on multilayered dielectrics that can allow specific surface modes called Bloch Surface Waves confined at the top surface of the stack. Our results demonstrated how BSW can be fruitfully exploited in both a label-free (resonance spectral shift) and labelled (fluorescence) detection schemes. In particular, a new diagnostic/analytical optical architecture for compact biosensing based on fluorescence detection has been

setup, allowing an overall improvement by almost two orders of magnitude in the Limit of Detection, as compared to standard systems based on glass substrates. Small concentrations of tumoral biomarker Angiopoietin-1 and VEGF, as well as fluorescent-labelled miRNA molecules, have been reliably detected on-chip with automated signal acquisition and processing algorithms.

#### Light-responsive micro structures for cell cultures

Tuning cells behavior in response to topographic cues is an important goal in biology. The chemical and physical features of the surrounding microenvironment can affect different aspects of cell behavior like attachment, differentiation, and also cell fate. In this way Extra Cellular Matrix (ECM) plays an active role in directing signals and guiding cell behavior active structure, providing biochemical signals (fixed proteins or diffusible factors), mechanical stimuli, (hard/elastic, soft/compliant or gel-like tissues), topographic signals (fibrils, fibers, pores, meshes, protrusions). Many works highlight the evidence of material-induced cell response, with a particular emphasis on cell behavior control through material cues and surface patterning on 2D materials. Common techniques to realize substrates with topographic patterns relies on micro- and nanofabrication techniques, chiefly soft lithography, electron beam lithography, or focused ion beam lithography which allow very high resolution patterning but are time-consuming and are basically static systems in the sense that not reversible structures can be realized.

In this field, I investigate the use of stimuli-responsive materials, in particular azobenzene based polymers, which can be structured by proper light radiation to obtain a versatile platform that can be used for cell growth. More specifically, light-responsive materials are considered, which can be modified, elongated, deformed in a reversible way upon laser irradiation. In these conditions, a control of cell growth and spatial arrangement can be obtained by using proper laser irradiation on the substrate wherein cell are seeded. Such an opto-mechanical stimulus is compatible with the cell living conditions and minimally invasive giving the possibility to carry out a dynamic study *in vivo* to observe cell behavior upon mechanical stress in the substrate.

#### Advanced 3D Microscopy

Non-conventional optical tools are required to investigate complex three dimensional environment like cell aggregate, organoids or thick biological tissues. Interferometric and holographic techniques offer a powerful tool to this aim, providing insight in terms of refractive index distribution and scattering properties. The refractive index allows monitoring some peculiar features of biological samples in their own environment and without sample labeling or preparation. More specifically, I and my group are working of the following approached to 3D label-free imaging:

- lens-less laser imaging based on holographic record of optical fields combined with numerical focusing aimed at localizing scattering objects in volume;
- tomographic phase imaging for providing a 3D refractive index distribution of transparent objects.
- white-light interferometry for quantitative phase imaging (QPI) of weakly scattering objects with high resolution.

#### **Publication list**

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- 73)** A. Angelini, F. Pirani, F. Frascella, E. Descrovi, «Reconfigurable elastomeric graded-index optical elements controlled by light», LSA (**accepted**)
- 72)** R. Rizzo, M. Alvaro, N. Danz, L. Napione, E. Descrovi, S. Schmieder, A. Sinibaldi, R. Chandrawati, S. Rana, P. Munzert, T. Schubert, E. Maillart, A. Anopchenko, P. Rivolo, A. Mascioletti, F. Sonntag, M. M. Stevens, F. Bussolino, F. Michelotti, Sens. Act. B 255, 2143-2150 (2018).
- 71)** R. Rizzo, M. Alvaro, N. Danz, L. Napione, E. Descrovi, S. Schmieder, A. Sinibaldi, S. Rana, R. Chandrawati, P. Munzert, T. Schubert, E. Maillart, A. Anopchenko, P. Rivolo, A. Mascioletti, E. Forster, F. Sonntag, M. M. Stevens, F. Bussolino, F. Michelotti, Biomed. Opt. Express, accepted (2018)
- 70)** F. Pirani, A. Angelini, F. Frascella, and E. Descrovi, Int. J. Polym. Sci. 2017, 6812619, DOI : 10.1155/2017/6812619 (2017)
- 69)** Zhu, Liangfu; Badugu, Ramachandram; Zhang, Douguo; Wang, Ruxue; Descrovi, Emiliano; Lakowicz, Joseph R., Anal. Biochem. 531, 20-36 (2017)

- 67)** I. Roppolo, A. Chiappone, A. Angelini, S. Stassi, F. Frascella, C. Ricciardi, E. Descrovi, Mater. Horiz. 4, 396-401 (2017).
- 66)** F. Pirani, A. Angelini, S. Ricciardi, F. Frascella, E. Descrovi, App. Phys. Lett. 110, 101603 (2017)
- 65)** F. Pirani, N. Sharma, A. Moreno-Cencerrado, S. Fossati, C. Petri, E. Descrovi, J.L. Toca-Herrera, U. Jonas, J. Dostalek, Macromol. Chem. Phys. 218, 1600400. (2017)
- 64)** R. Badugu, A. Mao, S. Blair, D. Zhang, E. Descrovi, A. Angelini, Y. Huo and J. R. Lakowicz, J. Phys. Chem. C 120, 28727–28734 (2016)
- 63)** P. Mandracci, F. Frascella, R. Rizzo, A. Virga, P. Rivolo, E. Descrovi, F. Giorgis, J. Non-Cryst. Solids 453, 113-117 (2016).
- 62)** F. Pirani, A. Angelini, F. Frascella, R. Rizzo, S. Ricciardi, E. Descrovi, Sci. Rep. 6, 31702 (2016).
- 61)** F. Frascella, C. Petri, S. Ricciardi, L. Napione, P. Munzert, U. Jonas, J. Dostalek, F. Bussolino, C.F. Pirri, E. Descrovi, J. Lightwave Techn. 34, 3641-3645 (2016).
- 60)** L. Pasquardini, C. Potrich, V. Vaghi, L. Lunelli, F. Frascella, E. Descrovi, C. F. Pirri, C. Pederzolli, Talanta 150, 699-704 (2016)
- 59)** F. Frascella, A. Angelini, S. Ricciardi, F. Pirri, E. Descrovi, Opt. Mat. Express 6, 444-450 (2016).
- 58)** R. Badugu, H. Szmacinski, K. Ray, E. Descrovi, S. Ricciardi, D. Zhang, J. Chen, Y. Huo and J. R. Lakowicz, ACS Phot. 2, 810-815 (2015).
- 57)** R. Badugu, H. Szmacinski, K. Ray, E. Descrovi, S. Ricciardi, D. Zhang, J. Chen, Y. Huo, and J.R. Lakowicz, J. Phys. Chem. C 119, 16245–16255 (2015).
- 56)** F. Frascella, S. Ricciardi, L. Pasquardini, C. Potrich, A. Angelini, A. Chiadò, C. Pederzolli, L. Boarino, P. Rivolo, C.F. Pirri, and E. Descrovi, Analyst 140, 5459 - 5463 (2015).
- 55)** S. Ricciardi, F. Frascella, A. Angelini, A. Lamberti, P. Munzert,, L. Boarino, R. Rizzo, A. Tommasi, E. Descrovi, Sens. Act. B 215, 225-230 (2015)
- 54)** A. Lamberti, A. Virga, A. Angelini, A. Ricci, E. Descrovi, M. Cocuzza, F. Giorgis, RSC Adv. 5, 4404 (2015).
- 53)** A. Angelini, A. Lamberti, S. Ricciardi, F. Frascella, P. Munzert, N. De Leo, E. Descrovi, Opt. Lett. 39, 6391-6394 (2014)
- 52)** M. Roussey, E. Descrovi, M. Häyrinen, A. Angelini, M. Kuittinen, S. Honkanen, Opt. Express 22, 27236-27241 (2014).
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- 50)** A. Angelini, E. Barakat, P. Munzert, L. Boarino, N. De Leo, E. Enrico, F. Giorgis, H.P. Herzog, C.F. Pirri, E. Descrovi, Sci. Rep. 4, 5428 (2014)
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- 48)** R. Badugu, E. Descrovi, J.R. Lakowicz, Anal. Biochem. 445, 1-13 (2014).
- 47)** A. Sinibaldi, R. Rizzo, G. Figliozi, E. Descrovi, N. Danz, P. Munzert, A. Anopchenko, F. Michelotti, Opt. Express 21, 23331 (2013).
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- 45)** A. Virga, P. Rivolo, F. Frascella, A. Angelini, E. Descrovi, F. Geobaldo, F. Giorgis, J. Phys. Chem. C 117, 20139-20145 (2013).
- 44)** R. Badugu, K. Nowazcyk, E. Descrovi and J.R. Lakowicz, Anal. Biochem. 442, 83-96 (2013). [Featured on Journal **Cover**, issue 1]
- 43)** E. Descrovi, E. Barakat, A. Angelini, N. De Leo, L. Boarino, P. Munzert, F. Giorgis, H.P. Herzog, Opt. Lett. 38, 3374-3376 (2013).
- 42)** A. Angelini, E. Enrico, N. De Leo, P. Munzert , L. Boarino, F. Michelotti, F. Giorgis, E. Descrovi, New J. Phys. 15, 073002 (2013).
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- 40)** A. Farhang, B. Abasahl, S. Dutta-Gupta, A. Lovera, P. Mandracci, E. Descrovi, and O.J.F. Martin, Rev. Sci. Instr. 84, 033107 (2013).

- 39)** F. Frascella, S. Ricciardi, P. Rivolo, V. Moi, F. Michelotti, P. Munzert, N. Danz, L. Napione, M. Alvaro, F. Giorgis, F. Bussolino, E. Descrovi, Sensors 13, 2011-2022 (2013).
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- 36)** E. Descrovi, F. Frascella, M. Ballarini, V. Moi, A. Lamberti, F. Michelotti, F. Giorgis and C.F. Pirri, Appl. Phys Lett. 101, 131105 (2012).
- 35)** A. Sinibaldi, E. Descrovi, F. Giorgis, L. Dominici, M. Ballarini, P. Mandracci, N. Danz, and F. Michelotti, Biomed. Opt. Express 3, 2405 (2012).
- 34)** A. Sinibaldi, N. Danz, E. Descrovi, P. Munzert, U. Schulz, F. Sonntag, L. Dominici, and F. Michelotti, Sens. Act. B. 174, 292 (2012).
- 33)** M. Ballarini, F. Frascella, N. De Leo, S. Ricciardi, P. Rivolo, P. Mandracci, E. Enrico, F. Giorgis, F. Michelotti, and E. Descrovi, Opt. Express 20, 6703-6711 (2012).
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- 31)** A. Virga, P. Rivolo, E. Descrovi, A. Chiolero, G. Digregorio, F. Frascella, M. Soster, F. Bussolino, S. Marchiò, F. Geobaldo and F. Giorgis, J. Raman Spectr. 43, 730 (2012).
- 30)** P. Rivolo, F. Michelotti, F. Frascella, G. Digregorio, P. Mandracci, L. Dominici, F. Giorgis, E. Descrovi, Sens. Act. B 161 1046 (2012).
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- 28)** F. Michelotti and E. Descrovi, Appl. Phys. Lett. 99, 231107 (2011).
- 27)** L. Pallavidino, M. Liscidini, A. Virga, A. Chiodoni, E. Descrovi, J. Cos, L. Claudio Andreani, F. Geobaldo, F. Giorgis, Opt. Mat. 33, 563 (2011).
- 26)** T. Sfez, E. Descrovi, L. Yu, D. Brunazzo, M. Quaglio, L. Dominici, W. Nakagawa, F. Michelotti, F. Giorgis, O.J.F. Martin and H.P. Herzig, J. Opt. Soc. Am. B 27, 1617 (2010).
- 25)** A. Virga, R. Gazia, L. Pallavidino, P. Mandracci, E. Descrovi, A. Chiodoni, F. Geobaldo, F. Giorgis, Phys. Stat. Solidi C 7, 1196 (2010).
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- 23)** E. Descrovi, T. Sfez, M. Quaglio, D. Brunazzo, L. Dominici, F. Michelotti, H.P. Herzig, O.J.F. Martin, and F. Giorgis, Nano Lett. 10, 2087 (2010) .
- 22)** F. Giorgis, E. Descrovi, C. Summonte, L. Dominici and F. Michelotti, Opt. Express 18, 8087 (2010).
- 21)** F. Michelotti, B. Sciacca, L. Dominici, M. Quaglio, E. Descrovi, F. Giorgis, and F. Geobaldo, Phys. Chem. Chem. Phys. 12, 502 (2010) .
- 20)** F. Giorgis, A. Virga, E. Descrovi, A. Chiodoni, P. Rivolo, A. Venturello, F. Geobaldo, Phys. Stat. Solidi C 6, 1736 (2009).
- 19)** E. Descrovi, Opt. Lett. 34, 1973 (2009).
- 18)** I.Soboleva, E. Descrovi, F.Giorgis, C.Summonte, A. Fedyanin, Appl. Phys. Lett 94, 231122 (2009).
- 17)** E. Descrovi, L. Aeschimann, I. Soboleva, F. De Angelis, F. Giorgis and E. Di Fabrizio, J. Nanosci. Nanotechnol. 9, 6460 (2009).
- 16)** D. Brunazzo, E. Descrovi and O. J. F. Martin, Opt. Lett., 34, 1405 (2009).
- 15)** F. Michelotti, L. Dominici, E. Descrovi, N. Danz and F. Menchini, Opt. Lett . 34, 839 (2009).
- 14)** B. Sciacca, F. Frascella, A. Venturello, P. Rivolo, E. Descrovi, F. Giorgis and F. Geobaldo, Sens. and Act. B 137, 467 (2009).
- 13)** L. C. Andreani, A. Balestreri, J. F. Galisteo-López, M. Galli, M. Patrini, E. Descrovi, A. Chiodoni, F. Giorgis, L. Pallavidino, F. Geobaldo, Phys. Rev. B 78 , 205304 (2008).
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- 6)** E. Descrovi, B. Sciacca, F. Frascella, F. Geobaldo, L. Dominici, and F. Michelotti, Appl. Phys. Lett. 91, 241109 (2007).
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- 4)** P. Tortora, E. Descrovi, L. Aeschimann, L. Vaccaro, H.-P. Herzog and R. Dandliker, Ultramicroscopy 107, 158 (2007).
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## Patents

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<https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2011058502&recNum=1&maxRec=&office=&prevFilter=&sortOption=&queryString=&tab=PCT+Biblio>
- DESCROVI E., GIORGIS F., ANGELINI, A., Nanostruttura fotonica per amplificazione e direzionamento di radiazione luminosa, 18/03/2014, PCT/IT2015/000069, extended CN106304847A (China)  
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## Book Chapters

- 4)** E. Descrovi, P. Rivolo, L. Boarino, N. De Leo, F. Giorgis, “New sensing strategies based on surface modes in photonic crystals”, in Organic & Hybrid Photonic Crystals, Springer, ISBN 978-3-319-16579-0, 2015.
- 3)** M. Ballarini, N. Danz, F. Frascella, S. Ricciardi, P. Rivolo, P. Mandracci, L. Napione, L. Dominici, A. Sinibaldi, F. Michelotti, F. Giorgis, F. Bussolino, E. Descrovi “Bloch Surface Waves on Dielectric Photonic Crystals for Biological Sensing” book chapter in Sensors, Proceedings of the First National Conference on Sensors, Rome 15-17 February, 2012, Lecture Notes in Electrical Engineering Volume 162 2014, pp. 107-111, Springer Science+Business Media New York 2014.
- 2)** E. Descrovi, M. Ballarini, F. Frascella, in: Encyclopedia Of Nanotechnology; Springer Science+Business Media B.V., ISBN 978-90-481-9750-7, 2012
- 1)** V. Chiono, E. Descrovi, S. Sartori, P. Gentile, M. Ballarini, F. Giorgis, G. Ciardelli, in: Scanning Probe Microscopy in Nanoscience and Nanotechnology 2, Springer, 2010

## Proceedings

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## Invited talks/lectures

- 2017** Tutorial at Nikon Workshop "Nuove Frontiere in Microscopia", Bari, September 26<sup>th</sup> 2017.
- 2016** Tutorial on "Photonic nanostructures for efficient optical sensors", CLEO, San Jose (US) 5<sup>th</sup>-10<sup>th</sup> June.
- 2016** Lesson at the XXV Giornate di Studio sui Rivelatori, Scuola F. Bonaudi, Cogne, February 23th-26th.
- 2015** International Congress on Biophotonics (ICOB 2015), Florence, May 18-22 2015.
- 2015** 39<sup>th</sup> International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach (US).
- 2014** 1<sup>st</sup> CEITEC Annual Conference: Frontiers in Life and Materials Sciences, Brno (CZ)
- 2014** European Optical Society Annual Meeting, TOM1- guided optics, Berlin (DE) .
- 2014** Fotonica 2014, Napoli 12-14 maggio 2014.
- 2014** ANIS4 Vipiteno 27-31 gennaio 2014.
- 2013** NanotechItaly, Venice 27-29 November 2013.
- 2012** Short course at the Preparatory School to the Winter College on Optics: Advances in Nano-Optics and Plasmonics, Trieste ICTP, Italy.

**2012** Frontiers in Biological Detection Conference, PlasmoBio Workshop, Mons (BE).

**2010** Science and Technology in Society forum 2010, Kyoto, Japan.

**2009** NanoForum, Torino, Italy 2009