

Michele Celebrano, Prof.

Born: March 5th, 1979 in Piacenza, Italy.

michele.celebrano@polimi.it

ORCID: <https://orcid.org/0000-0003-3336-3580>

ResearcherID: D-6503-2011

Scopus Author ID: 22978563500

CONTACT INFORMATIONS

Private address

Piazza XX Settembre, 10
26845, Codogno (Lodi), Italy

Mobile: +39 334 63 36 684

Professional address

Politecnico di Milano

Physics Department
Piazza Leonardo Da Vinci, 32
20133, Milan, Italy

Office Tel : +39 02 2399 6127

Office Fax: +39 02 2399 6126

Content of the CV:

Page 2 – CAREER FACTS
Page 3 – EDUCATION
Page 3 – RESEARCH EXPERIENCE
Page 4 – TEACHING EXPERIENCE
Page 5 – COMMUNITY WORK
Page 5 – MEMBERSHIPS
Page 5 – LANGUAGES
Page 5 – PATENTS
Page 5 – FUNDED PROJECTS
Page 6 – SCIENTIFIC PUBLICATIONS
Page 9 – BOOK CHAPTERS
Page 10 – CONFERENCE PROCEEDINGS
Page 11 – INVITED CONTRIBUTIONS
Page 12 – ORAL CONTRIBUTIONS (personally presented)
Page 14 – OTHER CONTRIBUTIONS

CAREER FACTS

I received my master in Electronic Engineering with full marks in 2004 and the Ph.D. in Physics in 2008 working in the framework of MIUR-FIRB 2001 project *Nanotechnologies and Nanodevices for the Information Society*. Under the supervision of Prof. Giulio Cerullo I developed a near field microscope (SNOM) to *map the near-field nonlinear response in plasmonic nano-resonators*.

I received the Best Talk Award at the OSA Italian Student Chapter Workshop in Ancona in 2007.

I spent 6 months of my PhD as an exchange student at ETH Zurich in the Nano-Optics group of Prof. Vahid Sandoghdar, working on the spectroscopy of ultra-small metal nanoparticles.

From July 2008 to April 2011, as a Post-Doc position in the same Nano-Optics group in Zurich, I focused on the development of interferometric scattering microscopy and *detect for the first time a single molecule without fluorescence at room temperature*. **This result, published in Nature Photonics, constituted a milestone of the FP6 Integrated project:** Integrated technologies for in-vivo Molecular imaging (Project Reference: 503259).

In December 2012 I got a permanent position (Assistant Professor) at the Physics Department of the Politecnico di Milano, where I became Associate Professor in 2018. The same year **I received the Full Professor habilitation**.

I am the responsible of the Nano-optics and Plasmonics Lab at the Physics Department where conduct my independent research on Nanophotonics and Plasmonics with a specific focus on the enhancement of light-matter interaction at the nanoscale. In particular, I investigate *the linear and nonlinear optical processes in plasmonic and photonic nanoantennas and metasurfaces* with the aim of exploiting nonlinear photon interaction for sensing and optical logic operations.

The first seminal findings **were published in high impact journals, such as Nature Nanotechnology, and funded by the Cariplo Foundation in 2012** (National PI - 200 k€ grant - project: *SHAPES*).

Recently, we obtain further funding **by the Italian Ministry of Research and Education (MIUR)** (Local PI - 700 k€ grant – project – *NOMEN*) to extend our concept to metasurfaces.

I also spent 3 months as academic guest in 2012 in the Labs of Prof. M. Krishnan at the University Zurich focussing on the manipulation of nano-objects. On this subject **we filed the patent “Device for placing an object in at least a first and a second orientation or spatial location”** (European Patent: EP 2891006 A2, US Patent: US 20150212316 A1).

I also recently obtained a 3 k€ grant within the framework of the EUR EIPHI project, an international integrated MSc/PhD program. As a result, I spent 1 months in 2019 as visiting professor at University Bourgogne Franche-Comté (Dijon) where, along with the research activity, I gave a lecture on nonlinear optics at the nanoscale within a master course.

I am the author of **more than 80** among **scientific papers and proceedings** that were subject to an international review process and collect **more than 1600 citations, H-index = 20 according to Google Scholar** (more than 1200 citations, H-index = 16 Scopus). My research has been highlighted by the scientific press and by other high impact journals such as **Nature, CE&N News, Physics Today and ACS Highlights**.

I attended several national and international conferences and workshops, giving **more than 30 oral presentations (13 Invited Talks)**.

I organized 1 national Workshop (Plasmonica 2013 in Milan) and **1 international Topical Meeting** on Nonlinear Plasmonics (within the Nanospectroscopy Conference in Rome in 2015) and a Special Focus Session at PIERS 2019 Conference in Rome.

I chaired and severed in the scientific committee of 2 international conferences, the OSA Advanced Photonics Congress 2018 in Zurich and the SPIE Photonics Europe Congress 2020, respectively.

While at ETH Zurich I was involved as a teaching assistant in a Bio-photonics, Molecular Optics and Spectroscopy courses taught in English, at Politecnico di Milano I am currently assistant professor and lecturer in electromagnetism courses. I supervised several bachelor theses and **I have directly supervised 2 Ph.D. students**, who carried out their activity in the above-mentioned projects.

EDUCATION

- 2005-2008 **Ph. D. degree in Physics - ?**
Department of Physics – Politecnico di Milano (Italy),
Ph.D. thesis title: “Near- and far-field imaging and spectroscopy of single nanoparticles” Mentors: Prof. Giulio Cerullo and Prof. Sandro De Silvestri.
- 2007 **Exchange PhD Student**
ETH Zurich, Laboratory of Physical Chemistry, (Research group: Prof. V. Sandoghdar)
Nano-Plasmonics
- 1998-2004 **Master degree in Electronic Engineering – with full marks**
Politecnico di Milano, Piazza Leonardo Da Vinci 32, 20133 Milano (Italy),
Master thesis title: “Development of a near-field optical microscope coupled to ultrashort pulses” Mentor: Prof. Giulio Cerullo.

RESEARCH EXPERIENCE

- 09/2019-10/2019 **Visiting Professor**
Laboratoire Interdisciplinaire Carnot de Bourgogne, University Bourgogne Franche-Comté, 9 avenue Alain Savary BP 47870, 21078 Dijon Cedex (France)
- 02/2018-Present **Associate Professor**
Department of Physics –Politecnico di Milano, Piazza Leonardo Da Vinci 32, 20133 Milano (Italy)
Study of linear and non-linear optical phenomena at the nanoscale
- 12/2011-02/2018 **Assistant Professor (Researcher)**
Department of Physics –Politecnico di Milano, Piazza Leonardo Da Vinci 32, 20133 Milano (Italy)
Study of linear and non-linear optical phenomena at the nanoscale
- 04/2011-11/2011 **Post-Doc**
Department of Physics –Politecnico di Milano, Piazza Leonardo Da Vinci 32, 20133 Milano (Italy)
Study of linear and non-linear optical phenomena at the nanoscale
- 07/2008-04/2011 **Post-Doc**
ETH Zurich, Laboratory of Physical Chemistry, (Research group: Prof. V. Sandoghdar)
Nano-Optics and Nano-Plasmonics
- 03/2008-07/2008 **Post-Doc**
Department of Physics –Politecnico di Milano, Piazza Leonardo Da Vinci 32, 20133 Milano (Italy)
Development of microscopy techniques for organic optoelectronic devices diagnosis

TEACHING EXPERIENCE

- 2018 - 2019 **Lecturer** Principles of Experimental Physics: Mechanics, Thermodynamics, Electromagnetism (12 Credits)
- 2017 - 2018 **Lecturer** Principles of Experimental Physics: Mechanics, Thermodynamics, Electromagnetism (12 Credits)
- 2016 - 2017 (Politecnico di Milano)
Lecturer Principles of Experimental Physics: Electromagnetism (5 Credits)
- 2015 - 2016 (Politecnico di Milano)
Lecturer Principles of Experimental Physics: Electromagnetism (5 Credits)

2014 - 2015 (Politecnico di Milano)
Lecturer Principles of Experimental Physics: Electromagnetism (5 Credits)

2014 - 2017 (Politecnico di Milano)

2012 - 2014 **Teaching Assistant** Physics Lab Courses (Politecnico di Milano)

2014 - 2017 **Supervision** of 1 Ph.D Students (Politecnico di Milano)

2013 - 2014 **Supervision** of 1 Ph.D Students (Politecnico di Milano)
Teaching Assistant Principles of Experimental Physics: Classical Mechanics, Thermodynamics and Electromagnetism (12 Credits)

2012 – 2013 (Politecnico di Milano)
Teaching Assistant Principles of Experimental Physics: Classical Mechanics, Thermodynamics and Electromagnetism (12 Credits)

2011 – 2012 (Politecnico di Milano)
Teaching Assistant Principles of Experimental Physics: Classical Mechanics, Thermodynamics and Electromagnetism (12 Credits)

2010 - 2011 (Politecnico di Milano)

2010 - 2011 **Supervision** of a Master Student (ETH Zurich)
Teaching Assistant Advanced Optics and Spectroscopy: Biophotonics course (ETH Zurich)

2009 - 2010 Zurich)

2008 - 2009 **Teaching Assistant** Spectroscopy course (ETH Zurich)

2008 **Teaching Assistant** Chemistry Lab courses (ETH Zurich)

2006 - 2007 **Supervision** of a Master Student (Politecnico di Milano)
Teaching Assistant Fundamental Physics: Classical Mechanics, Thermodynamics and Electromagnetism (Politecnico di Milano)

COMMUNITY WORK

Reviewer activity

- Nature Nanotechnology, Scientific Reports, Light: Science and Applications (NPG);
- ACS Photonics, ACSNano, Nanoletters (ACS);
- Nanoscale (RCS);
- Physical Review Letters, Phys. Rev. B (APS);
- Journal of Optics (IOP);
- J. Applied Physics (AIP);
- Optics Express (OSA);
- Optics Materials (Elsevier);
- Plasmonics (Springer);

- Belstein Journal of Nanotechnology (Belstein);
- Nanomaterials (MPDI);

Organization and scientific committee of Conferences

- Chair of the Scientific Sub-Committee for the conference “Advanced Photonics Congress” of the OSA in Zurich (Switzerland), 01-05 July 2018.
- Scientific Committee: “Optical Nanospectroscopy III”, Rome (Italy), 22-25 March 2016.
- Organizer: “Topical Meeting on Nonlinear Plasmonics and Its Applications”, Rome (Italy), March 21st 2016;
- Organizer: “Plasmonica2013”, Milan (Italy), 01-03 July 2013;
- Organizer: “PIERS 2019”, Rome (Italy), 17-21 June 2019;

Memberships

Member of Società Italiana di Ottica e Fotonica (SIOF)

Member of the Steering Committee of “Plasmonica” – Working Group of SIOF (Italian Society of Optics and Photonics)

LANGUAGES

Italian	Mother tongue
English	Fluent, (TOEFL Certificate)
German	Basic (A1.1 Certificate of ETH language course)

PATENTS

“Device for placing an object in at least a first and a second orientation or spatial location”
(EP 2891006 A2, US 20150212316 A1).

FUNDED PROJECTS

PAST

- Project “Second Harmonic Plasmon-Enhanced Sensing (SHAPES)” (2013-0736) funded by Cariplo Foundation (200k€) (Principal Investigator)

ONGOING

- Project “PoSHGOAT: Potential-dependent Second-Harmonic Generation in Optical Antennas measured Time-resolved MSCA Individual Fellowships (Co-supervisor; Applicant: Thorsten Feichtner).
- Project “High-index dichalcogenide nanoantennas” Funded by the Molecular Foundry (Proj. Number 5387) – Team Member

- Project PRIN “NOMEN: NOnlinear photonics with MEtal-less Nanoantennas and metasurfaces” Prot. 2017MP7F8F, funded by the Italian Ministry for Research and Education (MIUR) – 700k€ (Principal Investigator of research unit Polimi)
- Project “QUASIX: Sorgente integrata di singoli fotoni in silicio per comunicazioni quantistiche nello spazio” Funded by the Italian Space Agency (ASI) – 350 k€ (Principal Investigator of research unit Polimi)
- Project EUR EIPHI for international integrated MSc/PhD exchange. Visiting professorship grant (3 k€)

I am author of more than 50 scientific papers published in international peer-reviewed journals and conference proceedings, in which I appear both as first/second (18) and last author (4):

SELECTED SCIENTIFIC PUBLICATIONS ON INTERNATIONAL PEER-REVIEW JOURNALS

1. G. Pellegrini, M. Finazzi, M. Celebrano, M. A. Iatì, O. M. Maragò, P. Biagioni
“Superchiral Surface Waves for All-Optical Enantiomer Separation”
J. PHYS. CHEM. C 123, 28336-28342 (2019)
2. M. Celebrano, A. Locatelli, L. Ghirardini, G. Pellegrini, P. Biagioni, X. Wu, S. Grossmann, L. Carletti, C. De Angelis, L. Duò, B. Hecht, M. Finazzi
“Evidence for cascaded third harmonic generation in non-centrosymmetric gold nanoantennas”
NANO LETTERS 19, 7013-7020 (2019)
3. M. Celebrano, L. Ghirardini, M. Finazzi, G. Ferrari, Y. Chiba, A. Abdelghafar, M. Yano, T. Shinada, T. Tanii, and E. Prati
“Room temperature resonant photocurrent in an erbium low-doped silicon transistor at telecom wavelength”
NANOMATERIALS 9, 416 (2019)
4. L. Carletti, G. Marino, L. Ghirardini, V. F. Gili, D. Rocco, I. Favero, A. Locatelli, A. V. Zayats, M. Celebrano, M. Finazzi, G. Leo, C. De Angelis, and D. N. Neshev
“Nonlinear goniometry by second harmonic generation in AlGaAs nanoantennas”
ACS PHOTONICS 5, 4386-4392 (2018)
5. L. Ghirardini, G. Marino, V. F. Gili, I. Favero, D. Rocco, L. Carletti, A. Locatelli, C. De Angelis, M. Finazzi, M. Celebrano, D. N. Neshev, and G. Leo
“Shaping the nonlinear emission pattern of a dielectric nanoantenna by integrated holographic gratings”
NANO LETTERS 18, 6750-6755 (2018)
6. V. F. Gili, L. Ghirardini, D. Rocco, G. Marino, I. Favero, I. Roland, G. Pellegrini, L. Duò, M. Finazzi, L. Carletti, A. Locatelli, A. Lemaître, D. Neshev, C. De Angelis, G. Leo, M. Celebrano
“Metal–dielectric hybrid nanoantennas for efficient frequency conversion at the anapole mode”
BEILSTEIN JOURNAL OF NANOTECHNOLOGY 9, 2306-2314 (2018)
7. G. Soavi, G. Wang, H. Rostami, D. G. Purdie, D. De Fazio, T. Ma, B. Luo, J. Wang, A. K. Ott, D. Yoon, S. A. Bourelle, J. E. Muench, I. Goykhman, S. Dal Conte, M. Celebrano, A. Tomadin, M. Polini, G. Cerullo, and A. C. Ferrari
“Broadband, electrically tunable third-harmonic generation in graphene”
NATURE NANOTECHNOLOGY 13, 583–588 (2018)
8. G. Pellegrini, M. Finazzi, M. Celebrano, L. Duò, P. Biagioni
“Surface-enhanced chiroptical spectroscopy with superchiral surface waves”
CHIRALITY 30, 1-7 (2018)

9. D. Rocco, V. F. Gili, L. Ghirardini, L. Carletti, I. Favero, A. Locatelli, G. Marino, D. N. Neshev, M. Celebrano, M. Finazzi, G. Leo, and C. De Angelis
 “Tuning the second-harmonic generation in AlGaAs nanodimers via non-radiative state optimization”
 PHOTONICS RESEARCH 6, B6-B12 (2018)
10. L. Ghirardini, A.-L. Baudrion, M. Monticelli, D. Petti, P. Biagioni, L. Duò, G. Pellegrini, P.-M. Adam, M. Finazzi, and M. Celebrano
 “Plasmon-enhanced second harmonic sensing”
 THE JOURNAL OF PHYSICAL CHEMISTRY C 122, 11475-11481 (2018).
11. V. F. Gili, L. Carletti, F. Chouchane, G. Wang, C. Ricolleau, D. Rocco, A. Lemaître, I. Favero, L. Ghirardini, M. Finazzi, M. Celebrano, C. De Angelis, And G. Leo,
 “Role of the substrate in monolithic AlGaAs nonlinear nanoantennas Nanophotonics”
 NANOPHOTONICS 7, 517–521 (2018)
12. M. Celebrano, L. Ghirardini, M. Finazzi, Y. Shimizu, Y. Tu, K. Inoue, Y. Nagai, T. Shinada, Y. Chiba, A. Abdelghafar, M. Yano, T. Tanii, and E. Prati
 “1.54 μm photoluminescence from Er:Ox centers at extremely low concentration in silicon at 300 K”
 OPTICS LETTERS 42, 3311-3314 (2017)
13. C. Zucchetti, F. Bottegoni, C. Vergnaud, F. Ciccacci, G. Isella, L. Ghirardini, M. Celebrano, F. Rortais, A. Ferrari, A. Marty, M. Finazzi, and M. Jamet
 “Imaging Spin diffusion in Germanium at room temperature”
 PHYSICAL REVIEW B 96, 014403 (2017)
14. G. Pellegrini, M. Finazzi, M. Celebrano, L. Duò, and P. Biagioni
 “Chiral Surface Waves for Enhanced Circular Dichroism”
 PHYSICAL REVIEW B 95, 241402 (2017)
15. L. Ghirardini, L. Carletti, V. Gili, G. Pellegrini, L. Duò, M. Finazzi, D. Rocco, A. Locatelli, C. De Angelis, I. Favero, M. Ravaro, G. Leo, A. Lemaître, and M. Celebrano
 “Polarization properties of second-harmonic generation in AlGaAs optical nanoantennas”
 OPTICS LETTERS 42, 559-562 (2017)
16. L. Carletti, D. Rocco, A. Locatelli, C. De Angelis, V. F. Gili, M. Ravaro, I. Favero, G. Leo, M. Finazzi, L. Ghirardini, M. Celebrano, G. Marino, A. V. Zayats
 “Controlling second-harmonic generation at the nanoscale with monolithic AlGaAs-on-AlOx antennas”
 NANOTECHNOLOGY 28, 114005 (2017) **Invited Paper**
17. M. Baselli, A.-L. Baudrion, L. Ghirardini, G. Pellegrini, E. Sakat, L. Carletti, A. Locatelli, C. De Angelis, P. Biagioni, L. Duò, M. Finazzi, P.-M. Adam, and M. Celebrano
 “Plasmon-Enhanced Second Harmonic Generation: from Individual Antennas to Extended Arrays”
 PLASMONICS 12, 1595-1600 (2017)

18. V. Giliberti, E. Sakat, M. Bollani, M. V. Altoe, M. Melli, A. Weber-Bargioni, L. Baldassarre, M. Celebrano, J. Frigerio, G. Isella, S. Cabrini and M. Ortolani
“Functionalization of scanning probe tips with epitaxial semiconductor layers”
SMALL METHODS 1600033 (2017)
19. L. Ghirardini, M. Malerba, M. Bollani, P. Biagioni, L. Duò, M. Finazzi, F. De Angelis, and M. Celebrano
“Nonlinear emission from silver-coated 3D hollow nanopillars”
NANOSPECTROSCOPY 2, 15-23 (2016)
20. G. Pellegrini, M. Celebrano, M. Finazzi, and P. Biagioni
“Local Field Enhancement: Comparing Self-Similar and Dimer Nanoantennas”
JOURNAL OF PHYSICAL CHEMISTRY C 120, 26021–26024 (2016)
21. V. F. Gili, L. Carletti, A. Locatelli, D. Rocco, M. Finazzi, L. Ghirardini, I. Favero, C. Gomez, A. Lemaître, M. Celebrano, C. De Angelis, and G. Leo
“Monolithic AlGaAs second-harmonic nanoantennas”
OPTICS EXPRESS 24, 15965-15971 (2016)
22. L. Ghirardini, T. Virgili, S. Bolis, M. Finazzi, and M. Celebrano
“The role of segregation in the polarized emission from polyfluorene embedded in a liquid crystal”
J. POLYM. SCI., PART B: POLYM. PHYS. 54, 1558–1563 (2016) **Cover Paper**
23. C. J. Myers, M. Celebrano, and M. Krishnan
“Information storage and retrieval in a single levitating colloidal particle”
NATURE NANOTECHNOLOGY 10, 886–891 (2015)
Highlights: NATURE 524, 391 (2015)
24. M. Celebrano, X.F. Wu, M. Baselli, S. Grossmann, P. Biagioni, A. Locatelli, C. De Angelis, G. Cerullo, R. Osellame, B. Hecht, L. Duò, F. Ciccacci, and M. Finazzi
“Mode matching in multiresonant plasmonic nanoantennas for enhanced second harmonic generation”
NAT. NANOTECHNOLOGY 10, 412-417 (2015)
25. M. Finazzi, P. Biagioni, M. Celebrano, and L. Duò
“Quasistatic limit for plasmon-enhanced optical chirality”
PHYS. REV. B 91, 195427 (2015)
26. S. Bolis, M. Celebrano, L. Ghirardini, M. Finazzi, C. Botta, J. Beeckman, P. Kockaert, T. Virgili
“Optical gain from polyfluorene keto defects in a liquid crystal mixture”
CHEMICAL COMMUNICATION 51, 9686-9689 (2015)
27. M. Celebrano, M. Baselli, M. Bollani, J. Frigerio, A. Bahgat Shehata, A. Della Frera, A. Tosi, A. Farina, F. Pezzoli, J. Osmond, X. Wu, B. Hecht, R. Sordan, D. Chrastina, G. Isella, L. Duò, M. Finazzi, and P. Biagioni
“Emission engineering in germanium nanoresonators”

- ACS PHOTONICS 2, 53-59 (2015)
28. V. Kumar, N. Coluccelli, M. Cassinero, M. Celebrano, A. Nunn, M. Levrero, T. Scopigno, G. Cerullo, M. Marangoni
“Low-noise, vibrational phase-sensitive chemical imaging by balanced detection RIKE”
J. RAMAN SPECTROSCOPY 46, 109-116 (2015)
 29. F. Bottegoni, M. Celebrano, M. Bollani, P. Biagioni, G. Isella, F. Ciccacci, and M. Finazzi
“Spin Photovoltaic Cell”
NATURE MATERIALS 13, 790-795 (2014)
 30. M. Celebrano, C. Rosman, C. Sönnichsen, and M. Krishnan
“Angular Trapping of Anisometric Nano-Objects in a Fluid”
NANO LETTERS 12, 5791-5796 (2012)
 31. M. Savoini, X. Wu, M. Celebrano, J. Ziegler, P. Biagioni, S. C. J. Meskers, L. Duò, B. Hecht, and M. Finazzi
“Circular Dichroism Probed by Two-Photon Fluorescence Microscopy in Enantiopure Chiral Polyfluorene Thin Films”
J. AM. CHEM. SOC. 134, 5832-5835 (2012)
Selected JACS Spotlights
 32. C. Sciascia, M. Celebrano, M. Binda, D. Natali, G. Lanzani, and J. R. Cabanillas-Gonzalez
“Electric field and charge distribution imaging with sub-micron resolution in an organic Thin-Film Transistor”
ORGANIC ELECTRONICS 13, 66-70 (2012)
 33. G. Grancini, N. Martino, M.-R. Antognazza, M. Celebrano, H.-J. Egelhaaf, and G. Lanzani
“Influence of Blend Composition on Ultrafast Charge Generation and Recombination Dynamics in Low Band Gap Polymer-Based Organic Photovoltaics”
J. PHYS. CHEM. C 116, 9838-9844 (2012).
 34. M. Celebrano, P. Kukura, A. Renn, and V. Sandoghdar
“Single-molecule Imaging by Optical Absorption”
NATURE PHOTONICS 5, 95-98 (2011)
News & Views: J. Hofkens and M. B. J. Roeffaers: “Single-molecule light absorption”, NATURE PHOTONICS 5, 80-81 (2011)
 35. P. Kukura, M. Celebrano, A. Renn, and V. Sandoghdar
“Single-Molecule Sensitivity in Optical Absorption at Room Temperature”
J. PHYS. CHEM. LETT. 1, 3323–3327 (2010)
Highlights: PHYSICS TODAY, Dec. Issue, 20 (2010), NATURE METHODS 8, 14 (2010)
 36. M. Celebrano, R. Lettow, P. Kukura, M. Agio, A. Renn, S. Götzinger, and V. Sandoghdar
“Efficient coupling of single photons to single plasmons”
OPTICS EXPRESS 18, 13829 (2010)

37. D. Polli, G. Grancini, J. Clark, M. Celebrano, T. Virgili, G. Cerullo and G. Lanzani
 “Nanoscale Imaging of the Interface Dynamics in Polymer Blends by Femtosecond Pump-Probe Confocal Microscopy”
 ADV. MATER. 22, 3048 (2010)
38. M. Celebrano, M. Savoini, P. Biagioni, M. Zavelani-Rossi, P.-M. Adam, L. Duò, G. Cerullo, and M. Finazzi
 “Retrieving the Complex Polarizability of Single Plasmonic Nanoresonators”
 PHYS. REV. B 80, 153407 (2009)
39. M. Celebrano, C. Sciascia, M. Zavelani-Rossi, G. Cerullo, G. Lanzani, and J. Cabanillas-Gonzalez
 “Imaging the Electric-Field Distribution in Organic Devices by Confocal Electroreflectance Microscopy”
 ADV. FUNCT. MAT. 19, 1180 (2009)
40. M. Celebrano, P. Biagioni, M. Zavelani-Rossi, D. Polli, M. Labardi, M. Allegrini, M. Finazzi, L. Duò, and G. Cerullo
 “Hollow-pyramid based scanning near-field optical microscope coupled to femtosecond pulses: A tool for nonlinear optics at the nanoscale”
 REV. SCI. INSTR. 80, 033704 (2009)
41. P. Biagioni, M. Celebrano, M. Savoini, G. Grancini, D. Brida, S. Matefi-Tempfli, M. Matefi-Tempfli, L. Duò, B. Hecht, G. Cerullo, and M. Finazzi
 “Dependence of the two-photon photoluminescence yield of gold nanostructures on the laser pulse duration”
 PHYS. REV. B 80, 045411 (2009)
42. P. Kukura, M. Celebrano, A. Renn, and V. Sandoghdar
 “Imaging a single quantum dot when it is dark”
 NANO LETTERS 9, 926 (2009). **Cover Paper**
Highlights: NATURE PHOTONICS 2, 590 (2008), NATURE PHYSICS 5, 9 (2009)
43. M. Celebrano, M. Zavelani-Rossi, D. Polli, P. Biagioni, M. Finazzi, L. Duò, M. Labardi, M. Allegrini, J. Grand, P.-M. Adam, and G. Cerullo
 “Mapping local field enhancements at nanostructured metal surfaces by second –harmonic generation induced in the near field”
 J. MICROSCOPY 229, 233 (2008)
44. M. Zavelani-Rossi, M. Celebrano, M. Labardi, J. Grand, D. Polli, P. Biagioni, M. Finazzi, L. Duò, M. Allegrini, P.-M. Adam, and G. Cerullo
 “Near-field second-harmonic generation in single gold nanoparticles”
 APPL. PHYS. LETT. 92, 093119 (2008)
45. M. Finazzi, P. Biagioni, M. Celebrano, and L. Duò
 “Selection rules for second harmonic generation in nanoparticles”
 PHYS. REV. B 76, 125414 (2007)

46. P. Biagioni, M. Celebrano, M. Zavelani-Rossi, M. Labardi, D. Polli, M. Finazzi, L. Duò, G. Lanzani, and G. Cerullo
“High-resolution imaging of local oxidation in polyfluorene thin films by nonlinear near-field microscopy”
APPL. PHYS. LETT. 91, 191118 (2007)

BOOK CHAPTERS/SECTIONS

M. Celebrano, L. Duò, M. Finazzi

“Nonlinear optical processes and spectroscopies”

To appear in “Nanoscopy and Nanospectroscopy Vol. 1” edited by M. Fleisher and P.-M. Adam. De Gruyter.

Author List TBD

“Harmonic generation with Mie resonant nanostructures”

To appear in “Nonlinear Meta-Optics”, part of “Multidisciplinary and Applied Optics Series”, edited by Vasudevan Lakshminarayanan. CRC Press Taylor and Francis Group.

CONFERENCE PROCEEDINGS

1. C. De Angelis, V. F. Gili, L. Carletti, D. Rocco, A. Locatelli, L. Ghirardini, I. Favero, C. Gomez, A. Lemaître, M. Finazzi, M. Celebrano, and G. Leo
“Second Harmonic Generation in AlGaAs Nanoantennas”
Proceeding SPIE Vol. 10111, 101111M (2017)
2. D. Polli, M. Celebrano, J. Clark, G. Grancini, T. Virgili, G. Lanzani and G. Cerullo
“Ultrafast Confocal Microscope for Functional Imaging of Organic Thin Films”
Springer Proceedings in Physics, Interface Controlled Organic Thin Films 129, 161-165 (2009)
3. D. Polli, J. Clark, M. Celebrano, G. Grancini, G. Lanzani, and G. Cerullo
“Ultrafast Confocal Microscope for Functional Imaging of Organic Thin Films”
Conference on Lasers And Electro-Optics And Quantum Electronics And Laser Science Conference (CLEO/QELS 2009), VOLS 1-5, 375-376 (2009)
4. R. Lettow, P. Kukura, M. Celebrano, Y. Rezus, S. Goetzinger, and V. Sandoghdar
“Imaging Plasmonic Nanoparticles with a Narrow-Band Single-Photon Source”
Conference on Lasers And Electro-Optics And Quantum Electronics And Laser Science Conference (CLEO/QELS 2009), VOLS 1-5, 1820-1821 (2009)
5. M. Celebrano, C. Sciascia, G. Cerullo, G. Lanzani, J. Cabanillas-Gonzalez
“High-resolution mapping of electric field inside organic optoelectronic devices”
Conference on Lasers And Electro-Optics And Quantum Electronics And Laser Science Conference (CLEO/QELS 2008), VOLS 1-9, 596-597 (2008)
6. P. Biagioni, M. Celebrano, M. Zavelani-Rossi, D. Polli, M. Labardi, G. Lanzani, G. Cerullo, M. Finazzi, and L. Duò
“A novel diagnostic for polymer degradation based on near-field two-photon photoluminescence”
Phys. Stat. Sol. (c) 5, 2587-2590 (2008)
7. M. Celebrano, M. Zavelani-Rossi, D. Polli, G. Cerullo, P. Biagioni, M. Finazzi, L. Duò, M. Labardi, M. Allegrini, J. Grand, P. Royer, and P.-M. Adam
“Near-field second-harmonic generation from resonant gold nanoparticles”
Phys. Stat. Sol. (c) 5, 2657-2661 (2008) **Cover Paper**
8. M. Celebrano, M. Zavelani-Rossi, P. Biagioni, D. Polli, M. Finazzi, L. Duò, M. Labardi, M. Allegrini, J. Grand, P.-M. Adam, and G. Cerullo
“Mapping local field distribution at metal nanostructures by near-field second-harmonic generation”
Proceedings SPIE 6641, 66411E (2007)
9. P. Biagioni, M. Celebrano, D. Polli, M. Labardi, M. Zavelani-Rossi, G. Cerullo, M. Finazzi, and L. Duò
“Nonlinear optics and spectroscopy at the nanoscale with a hollow-pyramid aperture SNOM”
J. Phys.: Conf. Series **61**, 125 (2007)

MAIN INVITED CONTRIBUTION TO NATIONAL AND INTERNATIONAL CONFERENCES

1. M. Celebrano, et al. Title TBD, Nanoplasm2020, June 15-19 2020, Cetraro (Italy) *Forthcoming*.
2. M. Celebrano, et al. Title TBD, AOM2020, April 23-26 2020, Shenzhen (China) *Forthcoming*.
3. L. Ghirardini, A. Zilli, E. A. A. Pogna, F. Rusconi, P. Biagioni, A. Mazzanti, G. Della Valle, M. Finazzi, L. Duò, L. Carletti, D. Rocco, C. Gigli, G. Marino, X. Wu, B. Hecht, G. Leo, C. De Angelis, G. Cerullo, M. Celebrano, “Enhancing and Switching Harmonic Generation in Plasmonic and Dielectric Nanoantennas”, SPIE Photonics Europe, 29/03 – 02/04 2020, Strasbourg (France) *Forthcoming*
4. A. Zilli, E. A. A. Pogna, L. Ghirardini, F. Rusconi, P. Biagioni, A. Mazzanti, G. Della Valle, M. Finazzi, L. Duò, L. Carletti, D. Rocco, C. Gigli, G. Marino, G. Leo, C. De Angelis, G. Cerullo, M. Celebrano, “All-Optical Ultrafast Control Of Nonlinear Emission In Dielectric Nanoantennas”, International Conference of Quantum, Nonlinear and Nanophotonics’2019 (ICQNN’2019) 02 – 04 September 2019, Sofia, (Bulgaria)
5. M. Celebrano, E. A. A. Pogna, L. Ghirardini, F. Rusconi, P. Biagioni, A. Mazzanti, G. Della Valle, L. Duò, L. Carletti, D. Rocco, C. Gigli, G. Marino, G. Leo, C. De Angelis, G. Cerullo, M. Finazzi “Optical switching of the Second Harmonic Generation in AlGaAs nanoantennas” META 2019, JULY 23 – 26, 2019, Lisbon (Portugal)
6. M. Celebrano, L. Ghirardini, G. Pellegrini, L. Duò, M. Finazzi, C. Gigli, V. F. Gili, G. Marino, I. Favero, M. Ravano, A. Lemaitre, G. Leo, L. Carletti, A. Locatelli, C. De Angelis, D. Neshev “Enhanced Nonlinear Nanophotonics with Dielectric and Hybrid Antennas” PIERS 2019, 17-21 June 2019, Rome (Italy)
7. M. Celebrano “Engineering Nanoantennas For Efficient Nonlinear Photon Conversion At The Nanoscale”, International Workshop on Metallic Nano-Objects (MNO 2018), 5 – 7 November 2018, Lyon (France)
8. M. Celebrano “All-Optical Switching of Second Harmonic Generation in AlGaAs Nanoantennas” ETNO Workshop, 10 – 12 September 2018 Iseo (Italy)
9. L. Ghirardini, L. Carletti, V. Gili, G. Pellegrini, L. Duo, M. Finazzi, D. Rocco, A. Locatelli, C. De Angelis, I. Favero, M. Ravano, G. Leo, A. Lemaitre, M. Celebrano. “Mode-matching in multiresonant nanoantennas for enhanced nonlinear emission” SPIE Photonics West, San Francisco (USA), 27 January -1 February 2018
10. A. Locatelli, L. Ghirardini, X. Wu, S. Großmann, P. Biagioni, G. Pellegrini, L. Carletti, C. De Angelis, B. Hecht, L. Duò, M. Finazzi, M. Celebrano “Engineering nanoantennas for efficient nonlinear photon conversion at the nanoscale” EOS Topical Meeting, Anacapri (Italy), 10 -14 September 2017

11. L. Ghirardini, L. Carletti, V. Gili, G. Pellegrini, L. Duo, M. Finazzi, D. Rocco, A. Locatelli, C. De Angelis, I. Favero, M. Ravaro, G. Leo, A. Lemaitre, M. Celebrano
 "Emission properties of second-harmonic generation in AlGaAs optical nanoantennas"
 META 17, Incheon (South Korea), 25-28 July 2017
12. M. Celebrano
 "Towards efficient detection of photons emitted by Er³⁺ ions in silicon"
 IV Bilateral Italy-Japan Seminar - Innovative Solutions for Single Atom Applications in Photonics and Nanoelectronics, Colico (Italy), 2-4 May 2017
13. C. De Angelis, V. Gili, L. Carletti, D. Rocco, A. Locatelli, L. Ghirardini, I. Favero, C. Gomez, A. Lemaître, M. Finazzi, M. Celebrano, and G. Leo
 "Second harmonic generation in dielectric nanoantennas"
 NanoPhotonics Workshop MINW, Tequisquiapan, Mexico 15 – 19 January 2017
14. C. De Angelis, V. Gili, L. Carletti, D. Rocco, A. Locatelli, L. Ghirardini, I. Favero, C. Gomez Carbonell, A. Lemaitre, M. Finazzi, M. Celebrano, and G. Leo
 "Second harmonic generation in AlGaAs nanoantennas"
 SPIE Photonic West, San Francisco (Ca), USA January 28 – February 2 2017
15. V. F. Gili, L. Carletti, D. Rocco, A. Locatelli, M. Ravaro, I. Favero, A. Lemaitre, L. Ghirardini, M. Finazzi, M. Celebrano, C. De Angelis, and G. Leo
 "Second harmonic generation in monolithic AlGaAs nanoantennas"
 NANOP2016, Paris, France 7 - 9 December 2016
16. M. Celebrano, L. Ghirardini, X. Wu, S. Großmann, P. Biagioni, G. Pellegrini, M. Baselli, A. Locatelli, C. De Angelis, G. Cerullo, R. Osellame, B. Hecht, L. Duò, F. Ciccacci, & M. Finazzi
 "Mode-matching in multiresonant nanoantennas for enhanced nonlinear emission"
 OSA Nonlinear Photonic Meeting, Sydney (AUS), 3-8 September 2016
17. M. Celebrano, L. Ghirardini, X. Wu, S. Großmann, P. Biagioni, G. Pellegrini, M. Baselli, A. Locatelli, C. De Angelis, G. Cerullo, R. Osellame, B. Hecht, L. Duò, F. Ciccacci, & M. Finazzi
 "Mode-matching in multiresonant nanoantennas for enhanced nonlinear emission"
 META 16, Malaga (Spain), 25-28 July 2016
18. M. Celebrano, X. Wu, M. Baselli, S. Großmann, P. Biagioni, A. Locatelli, C. De Angelis, G. Cerullo, R. Osellame, B. Hecht, L. Duò, F. Ciccacci, and M. Finazzi
 "Enhanced second-harmonic generation from multiresonant plasmonic nano-structures"
 OSI 11 Conference, Austin (TX) USA, 28 June-3 July 2015
19. G. Cerullo, M. Celebrano, M. Zavelani-Rossi, P. Biagioni, M. Finazzi, and L. Duò
 "Near-field second harmonic generation from single gold nanoparticles"
 DPG Spring Meeting, Regensburg (DE), 26-30 March 2007
20. M. Celebrano, M. Zavelani-Rossi, D. Polli, P. Biagioni, M. Finazzi, L. Duò, M. Labardi, M. Allegrini, J. Grand, P.-M. Adam, and G. Cerullo
 "Mapping local field distribution at metal nanostructures by near-field second-harmonic generation"

OTHER ORAL CONTRIBUTIONS (personally presented by the author)

1. "All-optical Ultrafast Control of Second Harmonic Generation in AlGaAs Nanopillars"
CLEO Europe Conference, München (Germany), 23-27 June 2019
2. "Plasmon-enhanced second-harmonic sensing on a microfluidic chip"
Optical Sensors, SeTh1A. 2 (2018) Advanced Photonics Congress,
3. "Mode matching in multiresonant plasmonic nanoantennas for enhanced second harmonic generation"
ICES 2015, Messina (Italy), October 12-15, 2015.
4. "Mode matching in multiresonant plasmonic nanoantennas for enhanced second harmonic generation"
PLASMONICA 2015, Padova (Italy), July 1-3, 2015.
5. "Mode matching in multiresonant plasmonic nanoantennas for enhanced second harmonic generation"
SCIENCE CAMP 2015, Cumberland Lodge, Windsor Great Park (UK), August 18-21, 2015.
6. "Multiresonant nanoantennas for efficient and highly tunable second harmonic generation"
MRS Fall Meeting, Boston (USA), November 30 – December 5 2014.
7. "Enhanced emission in Ge antennas for telecom wavelengths"
MRS Fall Meeting, Boston (USA), November 30 – December 5 2014.
8. "Optical generation of highly-confined complementary spin populations: the spin photovoltaic cell"
MRS Fall Meeting, Boston (USA), November 30 – December 5 2014.

9. "Anomalous propagation of surface plasmon polaritons in thin gold films on transparent substrates"
PLASMONICA2013, Milano (Italy), 1-3 July 2013
10. "Angular Trapping of Anisometric Nano-Objects in a Fluid"
FisMat2013, Milano (Italy), 9-13 September 2013.
11. "Angular Trapping of Anisometric Nano-Objects in a Fluid"
12th International Conference on Near-field Optics and related topics (NFO 12), San Sebastian (Spain), 3-7 September 2012.
12. "Single-molecule imaging by optical absorption at room temperature"
CLEO Europe Conference, München (Germany), 22-26 May 2011.
13. "Single-molecule imaging by optical absorption at room temperature"
NANOMETA Conference, Seefeld (Austria), 3-6 January 2011.
14. "Imaging single molecules at room temperature by optical absorption"
CIMST Microscopy Colloquium, Zürich (Switzerland) 30/09/2010.
15. "High sensitivity nanoscopy via interferometric scattering microscopy"
Swiss Soft Days 2nd Workshop, Lausanne (Switzerland) 23/06/2010.
16. "Sensing and tracking non-fluorescent nanoparticles via interferometric scattering microscopy (iSCAT)"
Workshop on Nano-diagnostic and Emerging Research, Milan (Italy) 19/11/2009.
17. "Linear and nonlinear near-field spectroscopy of metal nanoparticles using hollow-pyramid probes"
10th International Conference on Near-field Optics and related topics (NFO10), Buenos Aires (Argentina), 1-5 September 2008.
18. "Extinction imaging of a single Quantum Emitter in its bright and dark states at ambient conditions"
International Conference on Near-field Optics and related topics (NFO10), Buenos Aires (Argentina), 1-5 September 2008.
19. "Confocal mapping of electric field inside organic semiconductors"
E-MRS 2008 Spring Meeting, Strasbourg (FRANCE), 26-30 May 2008.
20. "Nonlinear Near-Field Microscopy: a Tool for Local Field Enhancements Investigation at Metal Nanostructures"
Italian Workshop on Optics and Photonics (IWOP07), Ancona, (Italy) 30 May-1 June 2007.
Best Talk Award

OTHER CONTRIBUTIONS TO NATIONAL AND INTERNATIONAL CONFERENCES

21. L Ghirardini, L Carletti, V Gili, G Pellegrini, L Duò, M Finazzi, D Rocco, ...
“Optical Switching of the Second Harmonic Generation in AlGaAs Nanoantennas”
Nonlinear Photonics, NpW3C. 8 (2018)
22. L Ghirardini, A Locatelli, L Carletti, C De Angelis, G Pellegrini, P Biagioni, ...
“Engineering Nanoantennas for Efficient Nonlinear Photon Conversion at the Nanoscale”
Nonlinear Photonics, NpTh4C. 4 (2018)
23. D Rocco, L Ghirardini, V Gili, L Carletti, I Favero, A Locatelli, M Guasoni, ...
“Second harmonic generation at the nanoscale in isolated and coupled AlGaAs nanodisks”
Photonics Conference (IPC), 2017 IEEE, 365-366
24. M. Celebrano, M. Baselli, M. Bollani, J. Frigerio, A. Bahgat Shehata, A. Della Frera, A. Tosi, A. Farina, F. Pezzoli, J. Osmond, X. Wu, B. Hecht, R. Sordan, D. Chrastina, G. Isella, L. Duò, M. Finazzi, and P. Biagioni
“Ge nanoantennas for enhanced emission at telecom wavelengths”
13th International Conference on Near-field Optics, Nanophotonics and Related Techniques (NFO 13), Salt Lake City (USA), August 31 – September 4, 2014.
25. M. Baselli, M. Celebrano, P. Biagioni, X. Wu, B. Hecht, L. Duò, and M. Finazzi
“Near-field scattering analysis of gold gap nanoantennas”
PLASMONICA2014, Roma (Italy), June 30 – July 2, 2014.
26. M. Baselli, M. Celebrano, P. Biagioni, X. Wu, B. Hecht, L. Duò, and M. Finazzi
“Near-field scattering analysis of gold gap nanoantennas”
Italian National Conference on Condensed Matter Physics FisMat2013, Milano (Italy), 9-13 September 2013.