PERSONAL INFORMATION

Silvia Maria Pietralunga

via Pordenone, 1 20132 Milano, Italia

Tel.: +39 02 2399 6073

silviamaria.pietralunga@cnr.it

http://www.mi.ifn.cnr.it/people/silvia-pietralunga

ORCID: 0000-0001-7229-4528

SCOPUS AUTHOR ID: 7004091755

Sex Female | Date of birth 01/11/1966 | Nationality Italian

WORK EXPERIENCE

Dec 2011 – today (Senior Researcher since Jan-2023)

Tenured researcher at CNR- Institute for Photonics and Nanotechnologies

Institute for Photonics and Nanotechnologies (IFN), National Research Council of Italy (CNR) Piazza Leonardo da Vinci, 32 - 20133, Milano (Italia), www.ifn.cnr.it

Business: Public Research Body. Sector: Dept. of Physical Science and Technology of Matter

Main activities:

- Laboratory Responsible for the Lab of Electron Microscopy (EM Lab) at IFN-CNR, Milan.
- Development of advanced techniques of laser-assisted Dynamical Scanning Electron Microscopy, for the characterization of charge transport phenomena at semiconductor surfaces and in nanosystems. Real-time time-resolved SEM and pump-probe ultrafast SEM in UHV. Characterization of photoinduced dynamical electrical polarization in hybrid perovskites thin films for solar cells applications.
- Morphological and physico-chemical characterizations of low-dimensional materials and systems, by scanning electron microscopy and Scanning Auger Microspectroscopy.
- Optical, electrical, dielectric and morphological characterizations of tungsten oxide thin films and nanostructures, for optical and photoelectrochemical applications. Study and characterizations of sub-stoichiometric WO3-x films for plasmonics.
- Photovoltaics: optical study and design of stationary and trackless solar concentrators, based on two-stage optics and with high refractive index dielectrics.
- Key person of the Italian Partner AEIT-CORIFI/CNR in the H2020 CSA Projects supporting the activities of the Photonics Technology Platform and PPP Photonics21.
- Head of IFN-CNR Research Unit in national research projects on photonics and nanotechnology for energy and agrifood.
- WorkPackage Leader and Task Leader in national research projects on photonics and nanotechnology for energy and agrifood.

Jul 2011 –Nov 2011

Scientific Consultant

Foundation Tronchetti Provera – Milan, Italy

Main themes and activities: Plasmonics and photovoltaics: study and evaluation of the impact of nanoantennas optical structures onto thin film solar cells, to improve energy harvesting and yield. .

Jan 2009 – Jun 2011

Senior researcher

Foundation Politecnico di Milano, Piazza Leonardo da Vinci, 32 20133 Milano, Italy

Business: Private non-profit research body.

Main activities:

- Optical design of low concentration photovoltaic modules. Fabrication and functional tests of modules (collaboration with the Research Body CIFE-International Center of Photonics for Energy (prot. MIUR-regione Lombardia 19/07/2010)).
- Laboratory Manager. Coll with Dept. of Electronics and Information at Politecnico di Milano.

Jan 1998 – Dec 2008

Research Manager and Principal Investigator

CoreCom – Consorzio Ricerche Elaborazione Commutazione Ottica Milano, via G. Colombo 81, 20133 Milano, Italia. (Joint-venture Research Labs of PirelliCavi e Sistemi S.p.A. & Politecnico di Milano).

Business: Private non-profit research body. Sector: Optical communications.

Main activities:

- 2000-2008: Principal investigator for the Area Materials and Devices, participating into the management and coordination of research and development activities, relatively to the fabrication and characterization of devices for the processing of optical signals for telecom applications, as well as the growth, characterization and testing of innovative materials.
- Leader of CoreCom activities in National and International Research Projects.
- 2000-2004: Head of the Optical Physics Lab: set-up and management of the Lab Research activities ;
- 1998-2000: Head of Optical Switching Lab – Area Materials and Devices, coordination of the Research group; management of Research activities also in collaboration with other research institutions.

Jul 1995 – Dec 1997

Assistant researcher

CoreCom – Consorzio Ricerche Elaborazione Commutazione Ottica Milano, via G. Colombo 81, 20133 Milano, Italy

Business: Private non-profit research body. Sector: Optical communications.

Main activities:
Participating to the founding team of CoreCom research consortium; partaking into the setting-up of the Laboratories.
Head of Optical Switching Lab – Area Materials and Devices, supporting the development of the Laboratory; characterization facilities related to electro-optics, acousto-optics, photoconduction, non-linear and ultrafast optics.

Jan 1994 – Jun 1995

Assistant researcher

Politecnico di Milano, Department of Electronics and Information, via Ponzio 34/5, 20133 Milano, Italia

Business: Academic Institution. Sector: Optical communications.
Main activity:
In the founding team of the Photonics Laboratory at the Dept. of Electronics and Information of the Politecnico di Milano. Activity on photonic switching in semiconductors.

EDUCATION AND TRAINING

Nov 1994 – May 1998

Ph.D. in Electronics and Communication Engineering

ISCED 8

Politecnico di Milano, Piazza Leonardo da Vinci, 32 20133 Milano, Italia

Sector: Optical communications
Major research theme and Thesis: " Development of optical switches in semiconducting materials"
Minor research theme and Thesis : "Design of a Calcite-based de-multiplexing stage for a multimodal laser source for HDWDM applications".
Experimental-theoretical activity; photo-generation of electrical charge carriers in semi-insulating semiconductors; electronic transport; electro-optics and photo-conductive phenomena. Processing of the optical state of polarization in birefringent materials: theory, design, fabrication and test of devices.
Ph.D. Title awarded on May 19th 1998, at Politecnico di Torino, National certificate n. 167–delivered on Dec 7th 1998.

Nov 1986 – Dec 1993

Laurea (M.Sc degree) in Electronics Engineering - Optoelectronics specialization

ISCED 7

Politecnico di Milano, Piazza Leonardo da Vinci, 32 20133 Milano

Mathematical methods for engineers; analog electronics; electronic devices; optoelectronics; optics; quantum electronics; quantum physics.
Thesis: "Passive device for non-coherent all-optical wavelength conversion".
Final score: 100/100 *cum Laude.*

ACADEMIC TEACHING:

2000-2017

Adjunct Professor

- Academic Year 2016/17: Professor of Fundamentals of Experimental Physics B – Electrostatic

and Magnetostatic (Cod. 081387), at Politecnico di Milano (FIS/01)

- Academic Year 2015/16: Professor of Fundamentals of Experimental Physics B – Electrostatic and Magnetostatic (Cod. 081387), at Politecnico di Milano (FIS/01)
- Academic Year 2014/15: Professor of Fundamentals of Experimental Physics B – Electrostatic and Magnetostatic (Cod. 081387), at Politecnico di Milano (FIS/01)
- Academic Year 2007-2008: Professor of "Technology of Optical Interconnection and Packaging", at International Master in Materials Science for micro and nano-technologies (II Level)" at IUSS-Istituto Universitario di Studi Superiori, Pavia, Italy.
- Academic Year 2006-2007: Professor of "Technology of Optical Interconnection and Packaging", *(Cod. 079494),* at Politecnico di Milano.

2012-2022 Teaching Assistant and Lecturing

- Academic Year 2021-2022: Teaching Assistant for the Course "Electron and Scanning Probe Microscopy "(Cod. 054861) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2020-2021: Teaching Assistant for the Course "Experimental Physics A+B "(Cod. 083428) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2020-2021: Teaching Assistant for the Course "Electron and Scanning Probe Microscopy "(Cod. 054861) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2020-2021: Teaching Assistant for the Course "Experimental Physics A "(Cod. 096215) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2019-2020: Teaching Assistant for the Course "Electron and Scanning Probe Microscopy "(Cod. 054861) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2019-2020: Teaching Assistant for the Course "Experimental Physics A "(Cod. 096215) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2018-2019: Teaching Assistant for the Course "Fundamentals of Experimental Physics"(Cod. 081389) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2018-2019: Teaching Assistant for the Course "Experimental Physics A "(Cod. 096215) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2017-2018: Teaching Assistant for the Course "Fundamentals of Experimental Physics"(Cod. 081389) – at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2012-2013: Teaching Assistant for the Course "Experimental Physics" (Cod. 091104) at the Dept. of Physics, Politecnico di Milano.
- Academic Year 2012-2013: Teaching Assistant for the Course "Experimental Physics I+B" (Cod. 081386-081387) at the Dept. of Physics, Politecnico di Milano.
- 2005: Lecturing on "Technology of hybridization, pigtailing and packaging" at the Training Course on Optical Technologies for the monitoring of structures, infrastructures and implants" at Politecnico di Milano, Dept. Of Electronics.
- 2001: Lecturing on "Optical Devices and Amplifiers" at Master Course in "Optical Communications Systems and Networks" Poliedra PoliMI– Milano, Italy.

Ph.D. Supervisor

- Supervisor of Ph.D. Candidate Hao Chen, Ph.D. Course in Physics (XXXVI cycle) at Politecnico di Milano. On going.
- Co-supervisor of Ph.D. Candidate Gabriele Irde, Ph.D. Course in Physics (XXXI cycle) at Politecnico di Milano. Thesis title: "Photovoltages investigated by real-time and ultrafast pump-probe scanning electron microscopy" defended on March 15th 2019.
- Co-supervisor of Ph.D. Candidate Vittorio SALA, Ph.D. Course in Physics (XXX cycle) at Politecnico di Milano. Thesis title: "Ultrafast Scanning Electron Microscopy: charge dynamics at semiconductor and insulator surfaces" defended on February 20th 2018.

M.Sc. and B. Sc. Theses Supervisor

- (A.A. 2019-2020) M-Sc. Theses Supervisor, Degree in Materials and nanotechnology Engineering (ID: 213377), Thesis Title: "USEM technique for 2D dynamical probing of photo

excited charge fields and surface photo-voltage: addressing signal normalization"; Author: Keyan Ji, matr. 897831

- (A.A. 2019-2020) M-Sc. Theses Supervisor, Degree in Materials and nanotechnology Engineering (ID: 213386), Thesis Title : "RF-sputtered tungsten oxide amorphous thin films as optical layers: towards plasmonic applications by e-beam reduction"; Author: Hao Chen, matr. 894177.
- (A.A. 1994-2008) Supervising more than 30 Theses of B.Sc and M.Sc degree, mostly in Electronics and Communication Engineering, in collaboration with the Dept. of Electronics and Information at Politecnico di Milano.

LECTURES AND SEMINARS

2008 WIP-Women in Photonics School on Photonics Metamaterials "Photonic crystal fabrication techniques", Apr. 14-18 2008, Paris, France. (LECTURE)

2016 Giornata della Fotonica 2016 – Trento- Liceo Scientifico G. Galilei, 21 ottobre 2016 "Da Energia-Luce a Energia-Lavoro: architetture fotoniche" (LECTURE)

2016 PLESC 2016, International Workshop Plasmonics and Nanoantennas for solar cells, IFN-CNR Povo (Trento), Italy, 15 giugno 2016 " Concentrating optics and light management for competitive trackless planar photovoltaic modules and installations" (LECTURE)

2018 COST ACTION MP1401, WG3 Technical Meeting, 11-12 giugno 2018, POlitecnico di Milano, Milano, "Laser assisted Ultrafast scanning electron microscopy" (LECTURE).

2019 PHOTOTRAIN-ICTP School on Design, Fabrication and Applications of Devices for Energy Production", ICTP Trieste May 13-16 2019, "Photonics for zero energy building" (LECTURE)

"Scanning Auger Microspectroscopy" (LECTURE) for the Doctoral School on Advanced Atomic Scale Characterization, @ Politecnico di Milano, IDEA LEAGUE Network (25 oct 2019)

AWARDS

2013-2014 Research Scholarship "C.M.Lerici" Foundation

Research collaboration with KTH-ICT School in Stockholm (Sweden) in "Physics of low-dimensional III-V semiconductor heterojunctions for solar cell applications".

RESEARCH ACTIVITY

Summary

The research activity, as it is documented by publications, has been developed along different themes, mainly of experimental character. The transversality of research is originated by the different working contexts. A common reference frame is represented by the photo-physics and physico-chemical properties of electronic and photonic materials and related applications.

The following main activities can be detailed:

Dynamical Electron Microscopy: Development of dynamical Scanning Electron Microscopy techniques, assisted by laser beams. Development of a real-time technique for the characterization of photoinduced phenomena at the surface of materials and devices, over temporal ranges going from quasi-static regimes up to milliseconds. Application of the technique to the study of photoinduced polarization in hybrid perovskites films for solar energy conversion. Development of a ultrafast dynamical SEM technique, assisted by pulsed laser sources in pump-probe configuration.

Electron Microscopy and Microspectroscopy: Morphological and compositional analyses of nanostructured and low-dimensionality materials by SEM. Compositional analysis and oxidation-state analyses at surfaces by Scanning Auger Microscopy (SAM).

Linear and nonlinear optics: Linear and non-linear optical studies for photonic applications: absorption spectroscopy, spectroscopic ellipsometry, optical Kerr effect, second-order and third-order harmonic generation for the measurement of nonlinear optical susceptibility (Maker's fringe method); characterization of birefringence of amorphous and crystalline materials and optical fibers; development of experimental setups to characterize the State of Polarization of light and the spatial distribution of the birefringence along specialty optical fibers; study of the evolution of the SOP of fiber-optics transmitted optical signals for telecommunications; Polarization Mode Dispersion (PMD). Development of

experimental setup for optical photoelastic tomography, for the evaluation of stress field in optical fiobers and waveguides.

Statistical optics and quantum optics: theoretical studies on the photonic statistics of amplified optical signals and of related impact on the quality of transmitted optical signals for telecommunication; definition and measurement of optical signal-noise ratio at different modulation formats and optical and electroical filetring conditions. Set-up of a fiber-optic based Optical Homodyne Tomography (OHT) apparatus for the characterization of photon statistics of optical signal and related evaluation of the in-band signal-to-noise ratio.

Innovative optics for sensors and energy: Study and fabrication of photonic bandgap structures in oxides (TiO_2, Al_2O_3, SiO_2) for optical sensing applications. Evaluating the performances of photonic solutions to increase the energy conversion efficiency of solar cells. Design, fabrication and test of low-gain concentrating optics for stationary photovoltaic modules.

Growth and characterizations of materials for integrated optics: optical and acousto-optical characterization of multicomponent TeO_2- based glass alloys in the near IR regime; growth of thin films of amorphous TeO_2 by RF-sputtering technique for non_linear integrated optics devices; growth of germanium-over-silicon layers by RF-sputtering for near-IR integrated optics detectors.

Growth and characterizations of thin films and structures for plasmonics: Design, fabrication and test of metal-dieletric nanostructures for near IR plasmon-polariton propagation; deposition of metallic thin films -over dielectric substrates by RF-sputtering technique and related morphological and optical characterization; numerical study of the effects of local electromagnetic field enhancement by 2D plasmonic gratings.

Electrooptic and magnetooptic modulation and switching of optical signals: Design, fabrication and test of near IR electrooptic modulators and switching in semi-insulating charcogenides; photoconductiona dn electronic transport; design, fabrication and test of *endless* polarization controllers and stabilizers for fiber-optic signals, in electrooptic and magnetooptic technologies.

Publications and patents (see annex list for details)

International Journal Papers: 74
International Patents: 10 Patents deposited (Europe, US).
Book chapters: 3
Editing: 3
International Conference proceedings: 84 (13 INVITED)
Citations: 1140 (source Google Scholar)
h-index: 18 (source Google Scholar)

Funded Projects (with CNR-IFN, since 2011)

2021-2023 BestPhoRM21-" Boosting Europe's Sovereignty in Technology by driving Photonics from Research to Market – Photonics21"
- Funding: European Commission. Action: CSA Ref. N. Call: H2020-ICT-2020-2, Activity: ICT-37-2020-CSA, Project: 101016520
- https://cordis.europa.eu/project/id/101016520/it
- Role: Key person for the Italian partner AEIT-CORIFI (CNR Linked Third Party)

2021-2023 QuantDia - "Smart manufacturing of Quantum devices in diamond by laser irradiation and ion implantation "
- Funding: Italian Research Ministery.
- Action/Project: FISR2019_05178
- Role: Participant

2020-2022 Best4U-" Technology for high-efficiency 4T Bifacial solar cells for "utility scale"
- Funding: Italian Ministery MIUR ,PON/FSC (D.D. 1735 13/7/2017) Cod. ARS01_00519 .
- Role: Workpackage Leader WP4, Scientific responsible for RU CNR-IFN

2020-2022 sPATIALS3-HUB -" Miglioramento delle produzioni agroalimentari e tecnologie innovative per un'alimentazione più sana, sicura e sostenibile"
- Funding: Lombardy region, POR FESR 2014-2020 - Call HUB Ricerca e Innovazione
- Role: Scientific responsible for RU CNR-IFN.

2018-2020 NextPho21-" Developing and implementing the Next European Photonics21 industrial PPP Strategy"
- Funding: European Commission. Action CSA Ref. N. Call: H2020-ICT-2016-2017,Topic: H2020-ICT-2017, GA 769664
- Role: Key person for the Italian partner AEIT-CORIFI (CNR Linked Third Party)

2015-2017 EUROPHO21-"Implementing the European Photonics21 PPP strategy"
- Funding: European Commission. Action: CSA , Call: H2020-ICT-2014-1
- Topic: CSA H2020 *GA n. 779664*
- Role: Key person for the Italian partner AEIT-CORIFI (CNR Linked Third Party)

2016-2018 I-ZEB- "Towards Zero Energy Buildings for Smart City",
- Funding: Lombardy region, ID n° 19366/RCC (10/01/2017)
- Topic: Energy
  - Call: 3° Framework Programme CNR-Lombardy Region
  - Role: Task Leader T1.2: "study, characterization and simulation of technological solutions to maximize energy performance of building envelope".

2016-2018 FHfFC- ""Future Home for Future Communities (FHfFC)"",
- Funding: Lombardy region.
- Topic: Technologies for life
- Call: 3° Framework Programme CNR-Lombardy Region
- Role: participan

2013-2016 TIMES- "Tecnologie e materiali per l'utilizzo efficiente dell'energia solare",
- Funding: Lombardy region.
- ID: 17348 Call: 2° Framework Programme CNR-Lombardy Region
- Role: Work Package Leader WP2-Inorganic Photovoltaics

Other Projects (with CoreCom Research Center 2012-2023)

2006-2008 National Italian Project FIRB "Molecular compounds and nanostructured hybrid materials with resonant and non-resonant optical properties for photonics devices"
- Funding: Italian Ministery of Research
- Role: Responsible for the CoreCom Research unit

2004-2008 PHOREMOST-"Nanophotonics to realise molecular scale technologies"
- Funding: European Commission.
- Action: NOE FP6-IST *GA n. 551616*

Role: Industrial Advisory Board Member, Deputy Mgmt. Board Member.

2005-2007 National Italian Project "Development of optical devices based on self-aggregating nanostructured materials produced by electro-chemical process"
- Funding: Cariplo Foundation (Rif. 2004.1105/11.4988 - Bando Ricerca Applicata).
- Role: Responsible for the CoreCom Research unit; P.I. deputy.

2001-2002 Research Project: "Aerial optical Networks"
- Funding: WIND (#2001003969).
- Role: Task Leader for polarimetric measurements.

1996 -2000 Italian National Project: "Optically-controlled routing system for optical signals"
- Funding: IMI (n. 62055).
- Role: Task Leader for hardware design and implementation and for performance test.

SCIENTIFIC AFFILIATIONS:

- IEEE Photonics Society Italy Chapter : Past President
- Institute of Electrical and Electronics Engineers (IEEE) Senior Member, Member ('01), Associate Member ('96)
- OPTICA: Senior Member ('22), Member ('96)
- AEIT: Member ('90)
- Electromagnetic Italian Society:(SIEm): Member (2012-2020)

CONFERENCES AND WORKSHOP ORGANIZATION

- CMD30-FISMAT2023 Joint Conference, Sept. 4-8 2023, Milano, Italy, ***Organizing Committee Member,*** , ***Co.Chair of Mini-Colloquium on*** "New perspectives on Electron Microscopy for Condensed Matter Physics"
- ICOP 2022 – Italian conference on Optics and Photonics, 15-17 June 2022, Trento, Italy, ***Executive Committee Member, Session Chair " Optical Imaging and Sensing – Novel Approaches***
- **IEEE School:** 1st International School of the IEEE Photonics Society Italy Chapter : Photonics Integration: Advanced materials, new Technologies and Applications , Sep. 25th – Oct 1st 2018, ERICE -.Italy. ***Scientific Committee Member***.
- Italian national Conference: Fotonica 2017 – Convegno Italiano delle Tecnologie Fotoniche, 19a edizione, 3-5 Maggio, 2017—Padova, Italy (IEEE Technical Sponsor) - ***Executive Committee Member***
- Italian national Conference: Materials 2018, 22-26 Ottobre 2018, Bologna, Italy – ***Scientific Committee Member***

- Italian national Conference Fotonica 2018 - Convegno Italiano delle Tecnologie Fotoniche, 20a edizione, Maggio 23-25, 2018— Lecce, Italy- (IEEE Technical Sponsor) - ***Executive Committee Member***
- **IEEE Conference** RTSI – 2018 4th International Forum on Research and Technologies for Society and Industry, Palermo, Italy, Sep 10-1, 2018 - ***Scientific Committee Member- Chair and organizer of Session: 2.5: PHOTONICS TECHNOLOGIES FOR INDUSTRY 4.0***
- International Conference PIERS 2019 – 17-20 giugno 2019, Roma Italia- (IEEE Technical Sponsor) ***Scientific Committee Member- Chair and organizer of Special Session SC3: Visible, Near-infrared and Beyond: Materials and Devices***
- Italian National Conference ICOP2020 – Italian Conference on Optics and Photonics, Parma, 9-11 September 2020, (IEEE Technical Sponsor) ***Scientific Committee Member- Publ. Chair.***

EDITING ACTIVITY AND SCIENTIFIC REVIEWER

- OPTICA -Optics Express, Optics Letters- REVIEWER
- WILEY – Advanced Electronic Materials - REVIEWER
- Elsevier - Optical Materials,, Optical Materials X Nanoenergy, Applied Surface Science - REVIEWER
- IEEE Photonics Technology Letters, J. Lightwave Technology – REVIEWER
- SPIE – *Optical Engineering* - REVIEWER
- ASME Journal of Solar Energy Engineering - REVIEWER
- Hindawi – AMSE Advanced Materials Science and Engineering – ASSOCIATE EDITOR

TECHNICAL SKILLS AND COMPETENCES

Linear and nonlinear optical properties of materials; dielectric properties of matter; polarization optics; photo-physics of semiconductors (II-VI and III-V); fiber optics; operating laser sources and related exploitations in free-space and guided-mode propagation (laser diodes, solid-state-lasers, gas lasers, CW, pulsed modulated, tunable); photonic laboratory equipment; Scanning Electron Microscopy; Scanning Auger Micro-spectroscopy; working in UHV environment; spectroscopic ellipsometry; editing and computational software (data acquisition and analysis, numerical simulation), laboratory equipment interfacing; photonic lab activity: design and commissioning of optical benches for linear and nonlinear optical measurements, electrooptic and polarimetric characterizations, photoconductivity, acousto-optics; operating in clean-room environment; general competences related to the management of opto-electronic facilities and clean-room.

LANGUAGES

Mother tongue: ITALIAN

Other languages

	COMPREHENSION		SPEAKING		WRITING
	Hearing	Reading	Interaction	Oral	
English	C1	C2	C1	C2	C2
French	C2	C2	C1	C1	C2

Diplome d'Etudes Françaises 2ème Degré (eq. DALF) – CUEF Université Grenoble Alpes

Levels: A1/A2: Basic - B1/B2: Intermediate - C1/C2: Advanced
European Languages Reference Frame

ANNEXES

List of publications and patents.

Milan, March 20th 2023

Silvia Maria Pietralunga

Dr. Silvia Maria Pietralunga
List of Publications

International Refereed Journals

1996-2011

1. S. Pietralunga, F. Breviario, M. Martinelli , D. Di Rocco,"Calcite Frequency Splitter for dense HDWDM Transmitter*",IEEE Photonics Technol. Lett., 8, 1659-1661 (1996)*
2. S. Pietralunga, P. Boffi, M. Martinelli, "CdTe:In monocrystal modules for all-optical processing*", Journal of Non-Linear Optical Physics & Materials, 5, 247-268 (1996)*
3. S. Pietralunga., P. Boffi, G. Vegetti , M. Martinelli, "Non-coherent direct optical conversion from 1.3 to 1.5 nm", *Journal of Optical Communications, 17 , 59-64 (1996)*
4. P. Boffi, S. Pietralunga , M.Martinelli "Optical time-to-space converter", *Optics Communications, 123, 473-476 (1996)*
5. A. Zappettini, S. M. Pietralunga, A. Milani, M. Martinelli and A. Mycielski, "Measurements of second-order susceptibility at λ = 1.5 μm in CdTe-based ternary alloys for efficient wavelength conversion", *Journal of Applied Physics, 88, 4913-4915 (2000)*
6. S. M. Pietralunga, Andrea Tonini, Paolo Martelli, Maddalena Ferrario, and Mario Martinelli,"Direct polarization-heterodyne measurement of Kerr–induced birefringence in optical fibers",*IEEE Phot. Technol. Lett, 12, 1231-1233 (2000)*
7. S.M. Pietralunga, A. Zappettini., A. Milani, L. Cerati and M. Martinelli, "Optically Induced Switching in CdZnTe", *IEEE Phot. Technol. Lett, 12 , 1037-1039 (2000)*
8. A. Milani, E. Bocchi A. Zappettini. S.M. Pietralunga, and M. Martinelli, "Characterization of Electro-optic Shielding Effect in Bulk CdTe:In Crystals*" Journal of Crystal Growth, 214/215, 913-917 (2000)*
9. Zappettini. L. Cerati, A. Milani, S.M. Pietralunga, and M. Martinelli, "Sub-nanosecond all-optical switching in CdZnTe", *Journal of Crystal Growth, 204/205, 866-869 (2000)*
10. G. Ghislotti, S.M. Pietralunga, L. Ripamonti, "Effect of Deep Traps on photo-generated carriers dynamics in high resistivity CdTe*", Journal of Crystal Growth, 214/215, 212-215 (2000)*
11. G. Ghislotti, S.M. Pietralunga, L. Ripamonti, S. Micheletti, F. Bosisio and R. Sacco, "Time resolved photocurrent and electric field measurements in high resistivity CdTe", *Journal of Applied Physics, 87, 322-328 (2000)*
12. A. Milani, S.M. Pietralunga, A. Sangiovanni, A. Zappettini and M. Martinelli, "Two-dimensional mapping of residual stress-induced birefringence in differently-grown semiconductors for optical communication applications", *Material Science and Engineering A, 288, 205-208 (2000)*
13. Y. Qin, S. M. Pietralunga, M. Martinelli, "Quasi-Phase-Matched Difference Frequency Generation in a Mirrorless Counter-Propagating Configuration*", IEEE Journal of Lightwave Technology, IEEE Journal of Lightwave Technology, vol. JLT-30 (6), 1298-1306 (2001)*
14. E. Bocchi, A. Milani, A. Zappettini, S.M. Pietralunga, M. Martinelli, "Determination of ionic and pure electronic contributions to the electro-optic coefficient of cadmium telluride ang gallium arsenide single crystals", *Synthetic Metals, 124, 257-259 (2001)*
15. S.M. Pietralunga, P. Martelli, M. Ferrario,M. Martinelli, "Measurement of Self-Phase modulation of Amplified Spontaneous Emission: the role of second-order degree of coherence in determining the Kerr effect", *IEEE- Photonics Techonology Letters vol. 13 (11), 1179-1181 (2001)*
16. M. Lanata, M. Cherchi, A. Zappettini, S. M. Pietralunga, M. Martinelli, "Titania inverse opals for infrared optical applications*", Optical Materials, vol. 17, 11-14 (2001)*
17. S. M. Pietralunga, A. Milani, A. Zappettini, M. Martinelli, "Experimental charcterization of ternary $Cd_{0.9}Zn_{0.1}Te$ as a basic material for all-optical processing in the 1.5um range", *Journal of the Optical Society of America B, 18 (2), 176-181 (2001)*
18. A. Zappettini, S.M. Pietralunga, A. Milani, M. Martinelli, A. Mycielski, "Efficient near-IR second harmonic generation in II-VI semiconductors", *Synthetic Metals, 124, 261-263 (2001)*
19. A. Zappettini, L. Cerati, A. Milani, S.M. Pietralunga, P. Boffi, M. Martinelli, "High Pressure Bridgman Grown CdZnTe for electro-optic applications", *Journal of Electronics Materials, vol. 30 (6), 743-747 (2001)*
20. A. Zappettini, S. M. Pietralunga, A. Milani, D. Piccinin, M. Fere', M. Martinelli "Near-IR comparative characterization of optical second-order nonlinearities in Te-based semiconductors", *Journal of Electronics Materials, vol. 30 (6), 738-742 (2001)*

21. S. M. Pietralunga, A. Zappettini, F. Ranni, F. Bissoli, M. Martinelli, "CdTe-based Auston switch for Optically-driven Integrated Optics Devices*", Physica Status Solidi (b), vol. 229 (2), 1077-1080 (2002)*

22. F. D'Amore, A. Zappettini, G. Facchini, S. M. Pietralunga, M. Martinelli, C. Dell'Erba, C. Cuniberti, D. Comoretto, and G. Delle piane, "Third order optical characterization of a π-conjugated polydiacetylene by Maker fringes technique*", Synthetic Metals, vol. 127, p. 143-146 (2002)*

23. S. M. Pietralunga, P. Martelli and M. Martinelli, " Photon statistics of amplified spontaneous emission in a dense wavelength-division multiplexing regime", Optics Letters, vol.28, No.3, 152-154 (2003), 10.1364/OL.28.000152.

24. F. D'Amore, S. M. Pietralunga, M. Martinelli, M. Alloisio, D. Cavallo, C. Cuniberti, C. Dell'Erba, and G. Dellepiane " Linear and third-order optical characterization of poly-DPCHD" *Synthetic Metals, vol. 138,no.1-2, 363-367 (2003), 10.1016/S0379-6779(02)01297-3.*

25. G. M. Farinola, F. Babuadri, F. Naso, Y. Dobitsky, A. Zaopo, F. D'Amore, S. M. Pietralunga,, "Structural effects on third order nonlinear optical properties of PPV derivates*", Syntethic Metals, vol. 137, no.1-3, p. 1473-1474 (2003)*

26. F. D'Amore, M. Di Giulio, S. M. Pietralunga, A. Zappettini, L. Nasi, , V.Rigato, M. Martinelli, "Sputtered Stoichiometric TeO_2 Glass Films: Dispersion of Linear and Nonlinear Optical Properties", *Journal of Applied Physics vol.94, no.3 p. 1654-61 (2003), 10.1063/1.1590060.*

27. F. D'Amore, S. M. Pietralunga, P. Lorusso, M. Martinelli, A. Zappettini, E. Dal Bo, F. Tassone, P. Tognini and M. Travagnin, " Nonlinear optical characterization of CdS and PbS quantum dots dispersed in a glass matrix*", Physica Status Solidi (c), 1(4) 1001-1004 (2004), 10.1002/pssc.200304275*

28. A. Zappettini, S. Vivarelli and S. M. Pietralunga, "A study of the electro-optic shielding effect in II/VI semiconductors*", Physica Status Solidi (c), 1 (4), 698-701 (2004), 10.1002/pssc.200304273.*

29. A. Zappettini, F. D'Amore, S. M. Pietralunga, A. Terio, M. Martinelli, D. F. Bliss and J. Callahan, "Wavelength dependence of the third order non-linear coefficient in hydrothermally grown ZnO crystals", Physica Status Solidi (c),1 (4), 997-1000 (2004), 10.1002/pssc.200304274.

30. S. M. Pietralunga, M. Ferrario, P. Martelli and M. Martinelli, "Direct observation of local birefringence and axis rotation in spun fiber with centimetric resolution", IEEE *Photonics Technology Letters, vol. PTL-16 (1) pp.212-214 (2004), DOI: 10.1109/LPT.2003.820459.*

31. F. D'Amore, M. Lanata, S. M. Pietralunga, M. C. Gallazzi, G. Zerbi, "Enhancement of PMMA nonlinear optical properties by means of a quinoid molecule", *Optical Materials, Vol 24/4 pp 661-665 (2004), doi.org/10.1016/S0925-3467(03)00181-2.*

32. S. M. Pietralunga, J. Colombelli, A. Fellegara and M. Martinelli, "Fast polarization effects in optical aerial cables caused by lightning and impulse current", IEEE *Photonics Technology Letters, vol. PTL-16 (11) pp.2583-2585 (2004), DOI: 10.1109/LPT.2004.835198.*

33. P.Martelli, S.M. Pietralunga, D.Nicodemi and M.Martinelli, "Accurate sensitivity in optically preamplified direct detection",*Optics Letters, vol: 29, No. 13, 1473-1475, (2004), doi.org/10.1364/OL.29.001473.*

34. M. Ferrario, S. M. Pietralunga, M. Torregiani and M. Martinelli, "Modification of local stress-induced birefringence in low-PMD spun fibres, evaluated by high-resolution optical tomography", *Photonics Technology Letters, vol. PTL-16 (12) pp.2634-2636 (2004), DOI: 10.1109/LPT.2004.837515.*

35. M. Di Giulio, A . Zappettini, L. Nasi and S. M. Pietralunga , "RF-sputtering growth of stoichiometric amorphous TeO_2 thin films", *Cryst. Res. Technol., vol. 40, No.10-11, pp. 1023-1027, (2005) doi.org/10.1002/crat.200410479 .*

36. S.M. Pietralunga, F. D' Amore and A. Zappettini, "Optical properties of reactively sputtered TeOx amorphous films", *Applied Optics, vol. 44, (4), pp.534-537 (2005), doi.org/10.1364/AO.44.000534.*

2006- 2020

37. S. M. Pietralunga, M. Ferrario, M. Tacca and M. Martinelli, "Local Birefringence In Unidirectionally Spun Fibers", *IEEE Journal of Lightwave Technology, vol. JLT-24 (11) pp.4030-4038 (2006)* DOI 10.1109/JLT.2006.884197.

38. M. Martinelli, P. Martelli and S.M. Pietralunga, "Polarization Stabilization in Optical Communications Systems", *IEEE Journal of Lightwave Technology, vol. JLT-24 (11) pp.4172-4183 (2006)* DOI 10.1109/JLT.2006.884228.

39. A. Q. LeQuang, R. Hierle, J. Zyss, I. Ledoux, G. Cusmai, R. Costa, A. Barberis and S. M. Pietralunga, "Demonstration of net gain at 1550 nm in an erbium-doped polymer single mode rib waveguide", *Applied Physics Letters,vol. 89, pp. 141124-141124-3 (2006), doi.org/10.1063/1.2360179.*

40. R. Bratovich, M. Ferrario, S. M. Pietralunga and M. Martinelli , "Spin profiles reconstruction in spun fibers by long-range polarization-sensitive optical coherence tomography", IEEE *Photonics Technology Letters, vol. PTL-18 (13) pp.1454-1456 (2006)* DOI 10.1109/LPT.2006.877239.

41. R. Bratovich, M. Ferrario, S. M. Pietralunga and M. Martinelli , "Actually Transferred Alternating Spin Profiles in Low-PMD Fibers: Short-Range Reconstruction",, IEEE *Photonics Technology Letters, vol. PTL-18 (3) pp.448-450 (2006)* DOI10.1109/LPT.2005.863180.

42. *P. Martelli, S. M. Pietralunga, L. Ranzani, R. Siano and M. Martinelli , "Optical signal-to-noise ratio measurement by optical homodyne tomography", Optics Letters, vol.31, No.3, 302-034, (2006), http://dx.doi.org/10.1364/OL.31.000302.*

43. V. Stasi, G. Cattaneo, S. Franz, M. Bestetti, M.C. Ubaldi,D. Piccinin and S. M. Pietralunga,, "Aluminium pre-patterning for highly ordered nanoporous anodized alumina", *Photonics and nanostructures, Fundamental and Applications, vol. 5 pp.136-139 (2007)* DOI 10.1016/j.photonics.2007.07.009, http://www.sciencedirect.com/science/article/pii/S1569441007000302.

44. S. M. Pietralunga, M. Ferrario, A. Licciardello and M. Martinelli, "Reflection Photoelastic Tomography for the Detection of Stress Distribution in Planar Optical Waveguides", *J. Opt. Soc. America A, vol. 25, No. 5, pp. 1130-1141, (2008), doi:10.1364/JOSAA.25.001130,* http://dx.doi.org/10.1364/JOSAA.25.001130

45. S. M. Pietralunga, M. Lanata, M. Ferè, D. Piccinin, G. Cusmai, M. Torregiani and M. Martinelli, "High-contrast waveguides in sputtered pure TeO_2 glass thin films", *Opt. Expr., Vol. 16, No. 26 , Dec. 2008, pp. 21662-21670, 10.1364/OE.16.021662.*

46. S. M. Pietralunga, M. Feré, M. Lanata, D. Piccinin, G. Radnóczi, F. Misják, A. Lamperti, M. Martinelli, P. M. Ossi, "Heteroepitaxial sputtered Ge on Si (100): Nanostructure and Interface Morphology", *Europhysics Letters, Vol. 88 (2009) 28005-p1/p6 doi: 10.1209/0295-5075/88/28005.*

47. S. M. Pietralunga, M. Feré, M. Lanata, G. Radnóczi, F. Misják, A. Lamperti, M. Martinelli, P. M. Ossi, "Sputtered Ge-on-Si heteroepitaxial pn junctions: nanostructure, interface morphology and photoelectrical properties", Microelectronics Engineering, Volume 88, Issue 4, April 2011, Pages 518-521. DOI: 10.1016/j.mee.2010.10.014

48. M. Ronchi, A. O. Biroli, D. Marinotto, M. Pizzotti, M. C. Ubaldi e S. M. Pietralunga, "The Role of the Chromophore Size and Shape on the SHG Stability of PMMA Films with Embebbed NLO Active Macrocyclic Chromophores Based on a Cyclotetrasiloxane Scaffold", J. Phys. Chem. C 2011, vol. 115, (2011) Pages 4240–4246. dx.doi.org/10.1021/jp1107476

49. R. Macchi, E. Cariati, D. Marinotto, E. Tordin, R. Ugo, G. Santoro, M. C. Ubaldi, S. M. Pietralunga, G. Mattei, "In situ growth in a PMMA film of oriented nanocrystals of the hybrid inorganic-organic acentric material [(E)-N,N-dimethylamino-N'-methylstilbazolium][Cu_5I_6]", J. Mater. Chem.,Volume 21, Pages 9778-9783, (2011) DOI:10.1039/C1JM11424G.

50. M. P. Bolzoni, G. G. Gentili, S.M. Pietralunga,, "LR-SPP mode cutoff in strip waveguides as affected by technologically induced asymmetries: a numerical study", IEEE *Photonics Technology Letters, vol. PTL-23 (15) pp.1082-1084 (2011)* DOI 10.1109/LPT.2011.2155051.

51. *M.G. Beghi, F. Di Fonzo, S. Pietralunga, C. Ubaldi, C.E. Bottani, "Precision and accuracy in film stiffness measurement by Brillouin spectroscopy",* Rev. Sci. Instrum. 82, 053107 (2011); doi:10.1063/1.3585980.

2012 - today

52. G. Grasso, A. Righetti, M. C. Ubaldi, F Morichetti and S. M. Pietralunga, "*Competitiveness of Stationary Planar Low concentration photovoltaic Modules Using Silicon Cells: a focus on concentrating optics",* Solar Energy 86, 1725–1732, (2012), DOI 10.1016/j.solener.2012.03.015

53. W. Metaferia, Yan-Ting Sun, S. M. Pietralunga, M. Zani, A. Tagliaferri and S. Lourdudoss, "Polycrystalline indium phosphide on silicon by indium assisted growth in hydride vapor phase epitaxy*", Journal of Applied Physics , 116 (3), 33519 (2014), doi.org/10.1063/1.4890718.*

54. D Dellasega, S M Pietralunga, A Pezzoli, V Russo, L Nasi, C Conti,M J Vahid, A Tagliaferri and M Passoni, "Tungsten oxide nanowires grown on amorphous-like tungsten films", *Nanotechnology, 26, 365601 (10pp), (2015), doi:10.1088/0957-4484/26/36/365601*

55. E. Vassallo, M. Pedroni, S.M. Pietralunga, R. Caniello, A. Cremona, F. Di Fonzo, F. Ghezzi, F. Inzoli,G. Monteleone, G. Nava, V. Spampinato, A. Tagliaferri, M. Zani, G. Angella "Black-silicon production process by CF4/H2 plasma", *Thin Solid Films 603 (2016) 173–179,* 10.1016/j.tsf.2016.02.008

56. M. Pedroni, M. Canetti, G.L. Chiarello, A. Cremona, F. Inzoli, S. Luzzati, S.M. Pietralunga, A. Tagliaferri, M. Zani, E. Vassallo, "*Tungsten oxide thin film photo-anodes by reactive RF diode sputtering*", Thin Solid Films, 616, (2016), 375–380. DOI: doi: 10.1016/j.tsf.2016.08.010

57. G. L. Chiarello, M. Bernareggi, M. Pedroni, M. Magni, Mirko, S. Pietralunga, A. Tagliaferri, E. Vassallo, E. Selli, "Enhanced photopromoted electron transfer over a bilayer WO3 n-n heterojunction prepared by RF diode sputtering", *J. Mater Chem A, 5, 12977, (2017), DOI: 10.1039/c7ta03887a*

58. A. Abdelmalek, B. Sotillo, Z. Bedrane, V. Bharadwaj, S. Pietralunga, R. Ramponi, E.-H. Amara, and S. M. Eaton, "Origin of femtosecond laser induced periodic nanostructure on diamond", AIP Advances 7, 105105 (2017), DOI: doi.org/10.1063/1.5001942

59. M.Zani, V.Sala, G.Irde , S.M.Pietralunga , C. Manzoni , G. Cerullo, G.Lanzani , A. Tagliaferri, “Charge dynamics in aluminum oxide thin film studied by Ultrafast Scanning Electron Microscopy”, Ultramicroscopy 187, April 2018, 93–97 (2018), doi: 10.1016/j.ultramic.2018.01.010.
60. D. Dellasega, M. Bollani, L. Anzi, A. Pezzoli, D. Chrastina, A. Gulinatti, G. Irde, R. Sordan, M. Passoni, S.M. Pietralunga “High energy pulsed laser deposition of ohmic tungsten contacts on silicon at room temperature”, Thin Solid Films, 666 (2018), pp. 121-129, doi.org/10.1016/j.tsf.2018.09.042.
61. A.Chiappini, L.Pasquardini, S.Nodehi, C.Armellini, L.Lunelli, S.Pelli, M.Ferrari, S.M. Pietralunga, “Fluorescent aptamer immobilization on inverse colloidal crystals”, Sensors, 18, 4326-1, 13, (2018), ISSN: DOI: 10.3390/s18124326
62. Irde G, Pietralunga SM, Sala V, Zani M, Ball JM, Barker, AJ, Petrozza A, Lanzani G, Tagliaferri A, “Imaging photoinduced surface potentials on hybrid perovskites by real-time Scanning Electron Microscopy”, Micron 121 (2019) 53–65, https://doi.org/10.1016/j.micron.2019.03.002
63. Andrea Chiappini , Cristina Armellini, Nicola Bazzanella, Somayeh Nodehi, Anna Lukowiak, Silvia M. Pietralunga, Valentina Piccolo, Daniele Zonta, Gualtiero Nunzi Conti, Giancarlo C. Righini, Maurizio Ferrari “Modification of the Near-Infrared Spontaneous Emission in Er3þ-Activated Inverse Silica Opals” Phys. Status Solidi B 2019, 1900476 (1-6), doi.org/10.1002/pssb.201900476.
64. G. M. Paternò, L.Moscardi, Stefano Donini, Aaron M. Ross, Silvia M. Pietralunga, Nicholas Dalla Vedova, Simone Normani, Ilka Kriegel, Guglielmo Lanzani and Francesco Scotognella, “Integration Of Bio-Responsive Silver In 1d Photonic Crystals: Towards The Colorimetric Detection Of Bacteria”DOI: 10.1039/D0FD00026D, Faraday Discussions 223, 125–135 (2020).
65. Silvia Maria PIETRALUNGA, Gabriele Irde, Alex J Barker, James M. Ball, Annamaria Petrozza, Vittorio Sala, Maurizio Zani, Guglielmo Lanzani, Alberto Tagliaferri, “Dynamical Imaging of Surface Photo-potentials in Hybrid Lead Iodide Perovskite Films under High Optical Irradiance and the Role of Selective Contacts", Adv. Mat. Interf., 2020, 7, 2000297 (14 pages) DOI: 10.1002/admi.202000297
66. Giuseppe M. Paternò, Aaron M. Ross, Silvia M. Pietralunga, Nicholas Dalla Vedova, Jakkarin Limwongyut, Gaia Bondelli, Liliana Moscardi, Guillermo C. Bazan, Francesco Scotognella,and Guglielmo Lanzani, "The Impact of Bacteria Exposure on the Plasmonic Response of Silver Nanostructured Surfaces" Chem. Phys. Rev. 2, 021401 (2021), DOI: 10.1063/5.0042547.
67. Pedroni,M.; Vassallo,E.; Aloisio, M.; Brasca, M.; Chen, H.; Firpo, G.; Ghezzi, F.; Morandi, S.; Pietralunga, S.M.; Silvetti, T.; et al. Plasma Sputtered Tungsten Oxide Thin Film on Poly(lactic acid) for Food Packaging Applications. Coatings 2021,11,1281. https:// doi.org/10.3390/coatings11111281
68. A. N. Giakoumaki, G. Coccia, V. Bharadwaj, J. P. Hadden, A. J. Bennett, B. Sotillo, R. Yoshizaki, P. Olivero, O. Jedrkiewicz, R. Ramponi, S. M. Pietralunga, M. Bollani, A. Bifone P. E. Barclay, A. Kubanek, and S. M. Eaton, “Quantum technologies in diamond enabled by laser processing”, Applied Physics Letters (Vol.120, Issue 2), online: https://doi.org/10.1063/5.0080348 DOI: 10.1063/5.0080348 *Accepted for Publication*
69. Hao Chen, Alessandro Chiasera, Stefano Varas, Osman Sayginer, Cristina Armellini, Giorgio Speranza, Raffaella Suriano, Maurizio Ferrari, Silvia Maria Pietralunga, “Tungsten oxide films by radio-frequency magnetron sputtering for near-infrared photonics”, Optical Materials X, Volume 12, December 2021, 100093 https://doi.org/10.1016/j.omx.2021.100093.
70. A. N. Giakoumaki, G. Coccia, V. Bharadwaj, J. P. Hadden, A. J. Bennett, B. Sotillo, R. Yoshizaki, P. Olivero, O. Jedrkiewicz, R. Ramponi, S. M. Pietralunga, M. Bollani, A. Bifone P. E. Barclay, A. Kubanek, and S. M. Eaton, “Quantum technologies in diamond enabled by laser processing”, Applied Physics Letters, 2022 Vol.120, Issue 2, 020502, https://doi.org/10.1063/5.0080348 DOI: 10.1063/5.0080348
71. Ghezzi, Francesco; Pedroni, Matteo; Kovač, Janez; Causa, Federica; Cremona, Anna; Anderle, Mariano; Caniello, Roberto; Pietralunga, Silvia; Vassallo, Espedito, "Unraveling the mechanism of maskless nanopatterning of black-silicon by CF4/H2 plasma reactive ion etching." ACS Omega 2022, 7, 29, 25600–25612, DOI: 10.1021/acsomega.2c02740
72. Andrea Farina, Alice Carlotto, Stefano Varas, Alessandro Chiasera, Silvia Maria Pietralunga, “An asymmetric Low Concentrator and Spectral Splitting Approach to Bifacial Four-Terminal Photovoltaic Modules”, Prog Photovolt Res Appl. 2022;1–16 (2022), Special Issue Article, DOI: 10.1002/pip.3644.
73. Vassallo E; Pedroni M; Aloisio M; Chen H; Firpo G; Pietralunga SM; Ripamonti D. , “Plasma deposition to improve barrier performance of biodegradable and recyclable substrates intended for food packaging”, Plasma 2022, 5(4), 451-461; https://doi.org/10.3390/plasma5040033.
74. A. Carlotto, T.N. Lam Tran, B. Babiarczuk, N. Bazzanella, A. Szczurek, S. Varas, J. Krzak, O.S. Bursi, D. Zonta, A. Lukowiak, G.C. Righini, M. Ferrari, S.M. Pietralunga, A. Chiasera,“Low losses Er3+-doped flexible planar waveguide: Toward an all-glass flexible planar photonic system”, Ceramics International, pre-print, available online, march 3, 2023, https://doi.org/10.1016/j.ceramint.2023.03.012.

Patents:

1. Patent number: EP1302808 Publication date: 16/04/2003

Patent number: US6872794 Publication date 29/03/2005
NLO POLYMERS AND OPTICAL WAVEGUIDES BASED THEREON

2. M. Martinelli, P. Martelli, S.M. Pietralunga
European Patent Application EP1787408 A1
METHOD AND DEVICE FOR STABILIZING THE STATE OF POLARIZATION OF AN OPTICAL RADIATION

3. A. Barberis, S. Caselli, S.M. Pietralunga, M. Martinelli
Patent number: EP0924507 Publication date: 23/06/1999
Patent number: US6181429 Publication date:30/01/2001
INTERFEROMETER FOR MEASUREMENTS OF OPTICAL PROPERTIES IN BULK SAMPLES

4. P. Martelli, M. Martinelli, S.M. Pietralunga
United States Patent 7307722 Publication date: 12/11/2007
Patent number: EP1412808 Publication date: 28/04/2004.
POLARIZATION STABILIZATION

5. M. Martinelli, A. Paganini, S.M. Pietralunga, A. Zappettini
United States Patent 7209607, Publication date: 24/04/2007
Patent number: CA2467668 Publication date:05/06/2003
Patent number: EP1449403 B1 Publication date:5/08/2004, Granted on 15/02/2006
OPTICAL SPACE SWITCHING MATRIX

6. A. Zappettini, S.M. Pietralunga, E. Gombia
Patent number: WO03052431 Publication date: 26/06/2003
Patent number:EP1456674 Publication date: 15/09/2004
Patent number:US 7,099,069 Publication date: 29/08/2006
ELECTRO-OPTIC SEMICONDUCTOR MODULATORS

7. A. Melloni, F. Morichetti, S.M. Pietralunga, M. Martinelli
United States Patent 7324267 Publication date: 29/01/2008
Patent number: WO2004003653 Publication date: 08/01/2004
WAVELENGTH CONVERSION BASED ON FOUR WAVE MIXING AND DEVICES

8. M. Martinelli, P. Martelli, S.M. Pietralunga, A. Righetti
Patent number: US 7528360, Publication date: 05/05/2009
Patent No. PCT/EP2005/009549 Filed on 06/09/2005
METHOD AND DEVICE FOR STABILIZATING THE STATE OF POLARIZATION OF AN OPTICAL RADIATION

9. P. Martelli, M. Martinelli, S.M. Pietralunga, L. Ranzani
Patent number: WO 2006/119795 A1, Patent No. PCT/EP2005/005277 Filed on 13/05/2013
METHOD AND SYSTEM FOR OPTICAL COMMUNICATION COMPRISING OSNR MONITORING BY USE OF OPTICAL HOMODYNE TOMOGRAPHY.

10. G. Grasso, M. Morichetti, S.M. Pietralunga, A. Righetti, M. C. Ubaldi
Patent number: WO 2013/030720 A1 Patent No. PCT/IB2012/054241 Filed on 22/08/2012
A SOLAR CONCENTRATOR FOR PHOTOVOLTAIC SYSTEMS

International Refereed Conferences

1996-2011

1. P. Boffi, S. Pietralunga, M. Martinelli, *"Cd-Te monocrystal elementary blocks for all-optical information processing",* Proc. NOMA' 95 – 2nd Topical Meeting on Novel Optical Materials and Applications, Cetraro – Italy, (1995).
2. P. Boffi, S. Pietralunga, D. Piccinin, M. Martinelli, *"Photonic time-space converter for digital communication signals",* Proc. 0C'96 - International Topical Meeting on Optical Computing, Sendai - Japan, April 21-25, 1996, pp.12-13. (1996). ISBN): 4-9900487-0-9

3. P. Boffi, S. Pietralunga, D. Piccinin, M. Martinelli*", Free-space subsystems for all-optical information processing at 1.5 micron wavelength",* Proc. 2nd International Conference on Optical Information Processing, p. 45, S.Petersburg - Russia. June 17-21, 1996.
4. F. Breviario, S. Pietralunga, M. Martinelli, D. Di Rocco, "*Calcite Frequency Splitter for High-Density Wavelength-Division-Multiplexing Transmission",* Proc. CLEO/Europe-EQEC'96, Paper CThB1, Hamburg - Germany, Lasers and Electro-optics Europe, 1996. CLEO/Europe., Conference on. 8-13 Sept. 1996 Page(s):229 - 229 (1996); ISBN: 0-7803-3171-0; IEEE Cat.nN. 96TH 8162
5. S. Caselli, S. Pietralunga and M. Martinelli,"*Time-Resolved Cross Phase Modulation Measurements at λ =1550nm in semiconductors using Mach-Zehnder Interferometry",* Proc. NOMA' 97 – 3rd Topical Meeting on Novel Optical Materials and Applications, Cetraro – Italy, (1997).
6. A.Zappettini, L. Cerati, A. Milani, S.M. Pietralunga and M. Martinelli, "*Optically induced switching in CdZnTe",* Proc. CLEO'99 - Conference on Lasers and Electro-Optics, 283, Paper CWF51,Baltimore - MD, (1999); (ISBN): 0-7803-5661-6
7. A. Milani, S.M. Pietralunga, A. Sangiovanni, A. Zappettini and M. Martinelli, "*Two-dimensional mapping of residual strain-induced birefringence in differently grown semiconductors for optical communication applications",* Proc. E-MRS 1999 Spring Meeting, Strasbourg – France, Paper H-P19 (1999)
8. G. Ghislotti, S.M. Pietralunga, L. Ripamonti, "*Effect of Deep Traps on photo-generated carriers dynamics in high resistivity CdTe",* Proc. of Ninth International Conference on II-VI Compounds, Kyoto – Japan, Paper TuP012 (1999)
9. A. Zappettini. L. Cerati, A. Milani, S.M. Pietralunga, and M. Martinelli, "*Characterization of Electro-optic Shielding Effect in Bulk CdTe:In Crystals",* Proc. of Ninth International Conference on II-VI Compounds, Kyoto – Japan, Paper TuP013 (1999)
10. A. Zappettini. L. Cerati, A. Milani, S.M. Pietralunga, and M. Martinelli, "*Sub-nanosecond all-optical switching in CdZnTe",* Proc. of Ninth International Conference on II-VI Compounds, Kyoto – Japan, Paper TuP014 (1999)
11. P. Martelli, S. M. Pietralunga, M. Ferrario, M. Martinelli, "Ultra-sensitive Kerr birefringence measurement by a polarisation-heterodyne scheme", Europhysics Conference Abstracts PELS 2000, W14, Vol. 24H, Pag. 18. The International Interdisciplinary Conference on Polarization Effects In Lasers, Spectroscopy and Optoelectronics (PELS 2000) was held at Southampton University, UK on 6-8 September 2000.
12. S. M. Pietralunga, A. Zappettini, A. Milani, D. Piccinin, M. Feré and M. Martinelli,"Second-order Nonlinear Efficiency in II-VI Semiconductors for wavelength conversion applications in the near IR", IEEE Publication N. 00TH8498, Proc. of IEEE 27th International Symposium on Compound Semiconductors, Monterey- CA, 2-5 Oct. 2000, pp.97 – 102, (Cat.No.00TH8498), ISBN: 0-7803-6258-6, DOI 10.1109/ISCS.2000.947136
13. S. M. Pietralunga, A. Tonini, P. Martelli, M. Ferrario, A. Barberis, and M. Martinelli, "Polarization-heterodyne measurement of Kerr coefficient in optical fibers," in Quantum Electronics and Laser Science Conference, T. Gallagher, H. Van Driel, H. Gibbs, and D. Wineland, eds., OSA Technical Digest (Optical Society of America, 2000), paper QTuA7. Quantum Electronics and Laser Science Conference 2000, San Francisco, California United States, 7–11 May 2000, ISBN: 1-55752-608-7
14. M. Lanata, M. Cherchi, A. Zappettini, S. M. Pietralunga, M. Martinelli, "*Titania Inverse Opals for IR Optical Applications*", Proc. of E-MRS 2000 Spring Meeting, Paper P-G012, Strasbourg – France (2000)
15. E. Bocchi, A. Milani, A. Zappettini, S. M. Pietralunga, M. Martinelli, *"Determination of ionic and pure electronic contribution to the electro-optic coefficient of Cadmium Telluride and Gallium Arsenide single crystals"*, Proc. of E-MRS 2000 Spring Meeting, Paper P-HP-49, Strasbourg – France (2000)
16. A. Zappettini, S. M. Pietralunga, A. Milani, M. Martinelli, A. Mycielski, "*Efficient near-IR Second Harmonic generation in II-VI Semiconductors",* Proc. of E-MRS 2000 Spring Meeting, Paper P-HP-50, Strasbourg – France (2000)
17. A. Zappettini, L. Cerati, A. Milani, S.M. Pietralunga, P. Boffi, M. Martinelli, "*High Pressure Bridgman Grown CdZnTe for electro-optic applications*", US Workshop on the Physical and Chemical Properties of II-VI Materials 2000 – Extended Abstracts 211-212, Albuquerque – New Mexico (2000)
18. A. Zappettini, S. M. Pietralunga, A. Milani, D. Piccinin, M. Fere', M. Martinelli, *"Near-IR comparative characterization of optical second-order nonlinearities in Te-based semiconductors",* Proc. of US Workshop on the Physical and Chemical Properties of II-VI Materials 2000 – Extended Abstracts 209-210, Albuquerque – New Mexico (2000)
19. S. M. Pietralunga, P. Martelli, M. Ferrario and M. Martinelli, *"Kerr coefficient for chaotic light in optical fiber",* Technical Digest Symposium on Optical Fiber Measurements,, 2000, Paul A. Williams, Gordon W. Day Eds., U.S. Department of Commerce-NIST , Boulder- CO (2000), Special Publication (NIST SP) – 953.
20. M. Ferrario, S. M. Pietralunga, P. Martelli, and M. Martinelli, "*Enhanced Kerr effect experienced by ASE light", in Optical Fiber Communication Conference, 2001 OSA Technical Digest Series (Optical Society of America, 2001), paper WW1.* Anaheim – CA, 12-22 Marzo 2001.

21. Y. Dubitsky, A. Zaopo, A. Zappettini, G. Facchini, S. Pietralunga, M. Martinelli, ""Third order non-linear optical properties of polyphenylene vinylene derivatives in the infrared range", Proc. of MRS Spring Meeting 2001, Aprile 16-20, 2001, San Francisco, California, Paper C1.4

22. F. D'Amore, A. Zappettini, S.M. Pietralunga, M. Martinelli, Y. A. Dubitsky and A.Zaopo, "*Infrared Third Order NonLinear Optical characterization of Polyphenylene Vinylene Derivatives",* Proc. NOMA' 01 – 5rd Topical Meeting on Novel Optical Materials and Applications, Cetraro – Italy, (2001)

23. S.M. Pietralunga, A. Zappettini, F. Ranni, F. Bissoli, M. Martinelli, *CdTe-based Auston switch for optically driven integrated optics devices*, Proc. Tenth International Conference on II-VI Compounds, Settembre 9-14 2001 Bremen, Germania,paper Mo-P54

24. Martelli, P.; Pietralunga, S.M.; Martinelli, M. *Amplified spontaneous emission at dense wavelength-division multiplexing regime: direct detection of photon statistics,* 2002 IEEE/LEOS Annual Meeting Conference 10-14 Nov. 2002 Glasgow, UK Proceedings. 15th Annual Meeting of the IEEE Lasers and Electro-Optics Society (Cat. No.02CH37369) Part vol.1 p. 145-6 vol.1 (2002) Publisher: IEEE , Piscataway, NJ, USA, ISBN: 0-7803-7500-9

25. Yuri Dubitsky, Antonio Zaopo, Andrea Zappettini, Giulia Facchini, Silvia Pietralunga, Mario Martinelli, "Third order non-linear optical properties of polyphenylene vinylene derivatives in the infrared range", Mater. Res. Soc. Symposium Proceedings Vol.665, p. 23-8 (2002), DOI: https://doi.org/10.1557/PROC-665-C1.4, Published online by Cambridge University Press: 21 March 2011

26. A. Melloni, M. Martinelli, F. Morichetti, S.M. Pietralunga, *"Nonlinear Interactions in slow-wave structures",* Technical Digest of OSA Topical Meeting NLGW – Non Linear Guided Waves and their Applications, Sept. 1-4, 2002, Stresa – Italy, Poster presentation NLMD15, Nonlinear Guided Waves and Their Applications OSA Trends in Optics and Photonics (Optical Society of America, 2002), paper NLMD15 •https://doi.org/10.1364/NLGW.2002.ISBN: 1-55752-723-7

27. M. Ferrario, P. Martelli, S. M. Pietralunga, M. Martinelli, *"Experimental observation of local birefringence and axis rotation in spun fibers on a centimetric scale", in OSA Trends in Optics and Photonics (TOPS) Vol. 86,Optical Fiber Communication Conference, Technical Digest, Postconference Edition (Optical Society of America, 2003), pp.368-369, ISBN 1-55752-746-6*

28. A. Melloni, F. Morichetti, S. M. Pietralunga, M. Martinelli, *"Slow-wave wavelength converter",* Proceeding of 11th European Conference on Integrated Optics,ECIO 2003, vol. 1, p. 97 (2003) ISBN 80-01-02729-5.

29. Yi-qiang Qin, Silvia M. Pietralunga and Mario Martinelli, "Optical switching and amplification in counter-propagating difference frequency generation", Proc. SPIE 4225, 357 (2000); PROCEEDINGS VOLUME 4225, OPTICS AND OPTOELECTRONIC INSPECTION AND CONTROL: TECHNIQUES, APPLICATIONS, AND INSTRUMENTS | 8-10 NOVEMBER 2000, Optical Interconnects for Telecommunication and Data Communications", Editor(s): Xiaomin Ren, Suning Tang, doi:10.1117/12.402674

30. S. M. Pietralunga, P. Boffi, J. Colombelli, L. Marazzi, J. Osmond, A. Melloni, M. Martinelli, A. Fellegara, G. Vegetti; "Effects of lightning and short-circuit discharges on WDM overhead transmission at 10 Gb/s", in OSA Trends in Optics and Photonics (TOPS) Vol. 96, Conference on Lasers and Electro-Optics, Technical Digest, Postconference Edition (Optical Society of America, 2004), ISBN 1-55752-777-6, paper CTuEE2. San Francisco, CA, May 16-21 2004, DOI 10.1109/CLEO.2004.181245

31. M. Ferrario, S. M. Pietralunga, M. Torregiani, P. Martelli, M. Martinelli *"Modification of internal stress distribution in low-PMD spun fibers, evaluated by photoelastic tomography",* in OSA Trends in Optics and Photonics (TOPS) Vol. 96, Conference on Lasers and Electro-Optics, Technical Digest, Postconference Edition (Optical Society of America, 2004), ISBN 1-55752-777-6, paper CTuEE2. San Francisco, CA, May 16-21 2004, paper CWM7. San Francisco, CA, DOI 10.1109/CLEO.2004.181418.

32. P.Martelli, M.Martinelli, S.M. Pietralunga, D.Nicodemi *"Accurate Bit Error Rate Evaluation in Optically Preamplified Direct-Detection"* in Proceedings OPNETEC 2004 Optical Networks and Technologies Conference, Pisa Italy, October 18-20, 2004, Springer IFIP International Federation for Information Processing, vol.165, Ed. K. Kitayama, F.Masetti-Placci and G. Prati, pp.340-345, (2005), ISBN 0-387-23177-3, DOI 10.1007/0-387-23178-1_42.

33. M. Ferrario, S.M. Pietralunga,R. Bratovich,M. Martinelli, *"*Alternate spin profile reconstruction in low-PMD fibers" *in Quantum Electronics and Laser Science Conference, 2005. QELS '05* Vol. 3, 22-27 May 2005, pp:1714 - 1716 , *ISBN 1-55752-796-2, DOI 10.1109/QELS.2005.1549258*

34. P. Martelli, S. M. Pietralunga, and M. Martinelli, "Optimum Filtering for Optically Preamplified Direct Detection: The Influence of Photon-Count Statistics" Proceedings of WFOPC2005, 4th IEEE/LEOS Workshop on Fibres and Optical Passive Components, ©IEEE 2005, IEEE Catalog N.: 05EX1021, ISBN: 0-7803-8949-2, pp. 323-328

35. P. Martelli, S. M. Pietralunga, and M. Martinelli , "Optical Amplifier Noise Figure Measurement by All-fibre Optical Homodyne Tomography" Proceedings of 2005 31st European Conference on Optical Communication, ECOC 2005, Glasgow, Scotland, September 26-30, 2005, paper We4.P.55, ISBN: 0-86341-543-1; DOI: 10.1049/cp:20050634.

36. M. Ferrario, R. Bratovich, S. M. Pietralunga, and M. Martinelli, “Spin Profiles Reconstruction in Low-PMD Fibers by Long Range Polarization-Sensitive Optical Coherence Tomography” in Optical Fiber Communication Conference and Exposition and The National Fiber Optic Engineers Conference, Technical Digest (CD) (IEEE, 2006), paper OWA5. Anaheim, CA, USA, March 5-10 2006. ISBN: 1-55752-803-9, DOI: 1-55752-803-9

37. M. Ferrario, S. M. Pietralunga, M. Tacca, M. Martinelli, “Spinning-induced stress distribution affecting beatlength in constantly spun fibers” *in Optical Fiber Communication Conference, 2006 and the 2006 National Fiber Optic Engineers Conference. OFC 2006, 5-10 March 2006 , p. 3, ISBN: 1-55752-803-9 DOI 10.1109/OFC.2006.215504*

38. Q. LeQuang, R. Hierle, J. Zyss, I. Ledoux, S. Pietralunga *“Demonstration of net gain at 1550 nm in an erbium-doped polymer single mode rib waveguide”,* in *Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies 2006 Technical Digest* (Optical Society of America, Washington, DC, 2006),CLEO / QELS 2006 Technical Digest, Long Beach, CA, May 21-26, Paper CWM4 ISBN: 1-55752-813-6

39. Q. LeQuang, E. Besson,R. Hierle,A. Medhi, C. Reyé, R. Corriu,J. Zyss, S. Pietralunga and L. Ledoux, *“*Erbium-doped polymer-based materials and waveguides for amplification at 1,55 µm” *Proc. SPIE, 6123, 612302 (2006*) DOI: 10.1117/12.644655. PROCEEDINGS VOLUME 6123, INTEGRATED OPTOELECTRONIC DEVICES 2006 | 21-26 JANUARY 2006, Integrated Optics: Devices, Materials, and Technologies X, Editor(s): Yakov Sidorin, Christoph A. Waechter.

40. M. Martinelli, P. Martelli and S.M. Pietralunga “*Polarization control in advanced optical communication systems”* 2006 Bilateral China-Italy Workshop on Photonics for Communication & Sensing, Oct. 23-24, 2006, Xi’an, China, (INVITED PAPER)

41. P. Martelli, P. Boffi, M. Ferrario, L. Marazzi, P. Parolari, S. .M. Pietralunga, R. Siano, A. Righetti and M. Martinelli, *“Polarization Stabilizer for Polarization-Division Multiplexed Optical Systems”* Proc. Of ECOC 2007 33rd European Conference and Exhibition on Optical Communications– Sept. 10-20 2007, Berlin Germany, Technical Digest CD, paper 6.6.5, ISBN:978-3-8007-3042-1, DOI:10.1049/ic:20070246.

42. M. Ferrario, A. Licciardello, S. M. Pietralunga, M. Martinelli, “Reflection Photoelastic Tomography for the Detection of Axial Stress Distribution in Planar Optical Waveguides” *in European Conference on Lasers and Electro-Optics, 2007 and the International Quantum Electronics Conference CLEOE-IQEC 2007, 17-22 June 2007, p.1*, Session Nanostructured optical devices (CE6), paper CE6_4. The European Conference on Lasers and Electro-Optics 2007, ISBN: 1-4244-931-4, *DOI 10.1109/CLEOE-IQEC.2007.4386164.*

43. P. Martelli, P. Boffi, M. Ferrario, L. Marazzi, P. Parolari, S.M. Pietralunga, A. Righetti, R.Siano, M.Torregiani, M. Martinelli, “Endless Polarization Stabilizer for High Bit-rate Polarization-Division Multiplexed Optical Systems” in *Conference on Optical Fiber communication/National Fiber Optic Engineers Conference, 2008. OFC/NFOEC 2008, 24-28 Feb. 2008, pp.1 – 3, DOI 10.1109/OFC.2008.4528222,* San Diego, CA, USA , February 24-28 2008. ISBN: 978-1-55752-859-9.

44. M. Ferrario, S. M. Pietralunga, “Local Birefringence In Optical Fibers for Low-PMD Performances”, *Transparent Optical Networks, 2007. ICTON '07. 9th International Conference on*, Volume 1, 1-5 July 2007, Roma Italy, pp.164 - 166 DOI 10.1109/ICTON.2007.4296057, (INVITED TALK), ISSN: 2162-7339

45. V. Stasi, G. Cattaneo, M. C. Ubaldi, D. Piccinin and S.M. Pietralunga, *“Direct laser writer aluminium pre-patterning for ordered nanoporous alumina”* Proc. Nanometa 2007, Seefeld, Austria, January 8-11 2007, Paper Tue4f-39

46. S. M. Pietralunga, A. Pianciola, M. Romagnoli, M. Martinelli, *“Complex Optical Systems in Telecommunications: packaging issues”,* OSC’08- Second International Conference on Optical Complex Systems, March 17-20, 2008, Cannes-France – (INVITED TALK)

47. M. Lanata, M. Feré, D. Piccinin, S. M. Pietralunga, M. Martinelli, *“Sputtered Tellurite Glass Thin Films for Planar Optical Devices”,* in Proc. of ICTON 2008- Athens, Greece, 22 -26 June 2008, vol. 3 p. 227-230, ISBN 978-1-4244-2625-6, *DOI 10.1109/ICTON.2008.4598696* (INVITED TALK)

48. S. M. Pietralunga, A. Pianciola, M. Romagnoli, M. Martinelli, “*The art of optoelectronic packaging”,* in Proc. of ICTON 2008 - Athens, Greece, 22 -26 June 2008, vol. 4, p. 120-122 (2008), ISBN 978-1-4244-2625-6 (INVITED TALK)

49. S. M. Pietralunga, M. Lanata, G. Cusmai, M. Torregiani and M.Martinelli , *"Technology to high-contrast waveguides in Tellurite glass thin films"*, EOS Annual Meeting 2008, Paris, France, 29th September - 2nd October 2008, Poster presentation, TOM 6-Topical Meeting on Nonlinear Optics: Materials, Devices and Spatio-Temporal Effects.

50. “P. Martelli, P. Boffi, M. Ferrario, L. Marazzi, P. Parolari, S.M. Pietralunga, A. Righetti, R.Siano, M.Torregiani, M. Martinelli, “Endless Polarization Stabilizer for High Bit-rate Polarization-Division Multiplexed Optical Systems” in *Conference on Optical Fiber communication/National Fiber Optic Engineers Conference, 2008. OFC/NFOEC 2008,* San Diego, California United States, *24-28 Feb. 2008, pp.1 – 3, DOI 10.1109/OFC.2008.4528222*, ISBN: 978-1-55752-859-9.

51. P.G. Ferrandi, S. Micheletti, A. Melloni, M. Martinelli, S.M. Pietralunga*" Design of superprism for wavelength division multiplexing based on nanoporous alumina"* EOS Annual Meeting 2008, Paris, France, 29th September - 2nd October 2008, TOM 3-Topical Meeting on Nanophotonics, Photonic Crystals and Metamaterials.
52. A. Bianco, C. Bertarelli, G. Dassa, G. Toso, M. Lanata, S. M. Pietralunga, M. Martinelli and G. Zerbi, "New developments in photochromic materials showing large change in the refractive index", Proc. SPIE 7051, 705107 (2008); doi:10.1117/12.794868
53. M. Feré, M. Lanata, D.Piccinin, S.M. Pietralunga, A. Zappettini, P. M. Ossi and M. Martinelli *"Sputtered Ge/Si Heteroepitaxial Thin Films for Photodetection in Third Window*", Proc. of IEEE 5th Int.nl Conf. on Group IV Photonics, 17-19 Sept. 2008 Sorrento, Italy, pp. 270, DOI 10.1109/GROUP4.2008.4638169.
54. A. Greco, G. Gentili,S. M. Pietralunga, and M. Martinelli, "Impact of Material Asymmetries on LRSPP Modes in Strip Waveguides", Proc. of the IEEE-LEOS 21st Annual Meeting, 8-13 Nov. 2008, Newport Beach, California, Paper TuI4, IEEE Catalog Number: CFP08LEO-CDR ISBN: 978-1-4244-1932-6
55. G.Badenes, A. Cebollada, N. Gaponik, C. Lopez, M.C. O' Regan, D. Piccinin, S. M. Pietralunga, D.Wiersma, "*The PhOREMOST emerging nanophotonics roadmap*", Technical Digest of the Fourteenth Microoptics Conference, Sept. 252-7, 2008, Brussels, -Belgium. Printed in Brussels, pp. 98-99 (INVITED TALK)
56. M.P. Bolzoni, G.G. Gentili, S.M. Pietralunga, "A study on cutoff at 1.55 um for LR-SPP modes in strip waveguides", In: Proceedings of 3rd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics Metamaterials 2009 , London, UK, Aug 30th-Sept 4th 2009, pp. 740-742.
57. M.C. Ubaldi, F. Morichetti, S.M. Pietralunga, A. Righetti, and G. Grasso, "TOWARDS COMPETITIVE STATIONARY L-CPV MODULES USING SILICON CELLS"; Proc. of 26th EU-PVSEC, 5-8 September 2011, Hamburgh- Germany, p. 153, Oral presentation Paper 1BO.11.6. ISBN 3-936338-27-2

2012 - today

58. Silvia M. Pietralunga, Alessandro Geroldi, and Mirko Serafini "Optical diffraction into thick slab waveguides: a finite-beam RCWA approach to solve extremely asymmetrical scattering-EAS in slanted holographic gratings", SPIE PHOTONICS EUROPE, 16-19 April 2012, Brussels, Belgium, Proc. SPIE 8428, Micro-Optics 2012, 84280E (8 May 2012); https://doi.org/10.1117/12.918558.
59. F. Morichetti, A. Righetti, G. Grasso, M.C. Ubaldi and S.M. Pietralunga ""Gondola": Trackless LCPV Module for Si Cells with Low-Aspect Ratio and High Energy Rating", Photovoltaic Specialists Conference (PVSC), 2012 38th IEEE, June 3-8 2012, Austin, TX, USA, DOI: 10.1109/PVSC.2012.6317761 pp.000957-60, INSPEC Accession Number: 13045867.
60. G. Grasso, F. Morichetti, A. Righetti, S. M. Pietralunga and M. C. Ubaldi, "Trackless LCPV modules: A competitive solution?," 2012 38th IEEE Photovoltaic Specialists Conference, June 3-8 2012 Austin, TX, 2012, pp. 002048-002051, doi: 10.1109/PVSC.2012.6318001. INSPEC Accession Number: 13055529.
61. M. Bolzoni, G.G. Gentili, S.M. Pietralunga, "3D analysis of grating plasmonic coupler", Proc. of Sixth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – *Metamaterials 2012* – September 17-20 2012, St. Petersburg – Russia, Poster Presentation 16.3D.
62. M.P. Bolzoni, G.G. Gentili, S.M. Pietralunga "Grating-assisted LR-SPP coupling: introducing 3D numerical analysis", EOS Annual Meeting 2012 (EOSAM 2012), Aberdeen, Scotland, UK, 25-28 September 2012, Poster Presentation TOM3_5810_028. ISBN: 978-1-62748-118-2
63. D.Dellasega, S.M. Pietralunga, A. Pezzoli, V.Russo, L. Nasi, M. J.Vahid, A. Tagliaferri and M. Passoni, "Low temperature growth of Tungsten oxide nanowires on amorphous-like Tungsten films", E-MRS Spring Meeting 2015, Lille, France, 11-15 May 2015, Oral Talk, Symposium N.
64. S. M. Pietralunga, Cristian Manzoni, Ettore Carpene, Davide Bugini, Stefano Dal Conte, Hamoon Hedayat, Giancarlo Soavi, Mohammad J. Vahid, Maurizio Zani,Claudia Dallera, Roman Sordan, Alberto Tagliaferri, Giulio Cerullo, "Advanced spectroscopies of graphene and 2D materials," 2016 18th International Conference on Transparent Optical Networks (ICTON), Trento, Italy, 2016, pp. 1-4.doi: 10.1109/ICTON.2016.7550392. INSPEC Accession Number: 16263680. Electronic ISSN: 2161-2064.
65. *V. Sala, S.M. Pietralunga, M. Zani, G. Irde, C. Manzoni, G.Isella, G. Cerullo, G. Lanzani, A.Tagliaferri, "Charge carrier dynamics by secondary electron detection in ultrafast scanning electron microscopy", emhtr2017 Electron Microscopy with High Temporal Resolution, Strasbourg France, 9-31 May 2017, Oral Talk.*
66. V. Sala, M. Zani, G. Irde, S. M. Pietralunga, G. Cerullo, G. Lanzani, A. Tagliaferri, "Charge dynamics in aluminum oxide thin film revealed by ultrafast scanning electron microscopy", IM2-P004, Poster Presentation, Proceedings of Microscopy Conference 2017, 21 - 25 August 2017, Lausanne, p. 593, www.mc2017.ch

67. V. Sala, M. Zani, G. Irde, S. M. Pietralunga, G. Cerullo, G. Lanzani, A. Tagliaferri, "Charge carrier dynamics at doped silicon surface by ultrafast scanning electron microscopy", IM2-P008, Poster Presentation, Proceedings of Microscopy Conference 2017, 21 - 25 August 2017, Lausanne, p. 599, www.mc2017.ch

68. S. M. Pietralunga, V.Sala, C. Manzoni, G.Cerullo, G.Lanzani, G.Irde, M. Zani, A.Tagliaferri, "Ultrafast Scanning Electron Microscopy (USEM) to probe charge dynamics at surfaces of oxide thin films", ICTON 2018 – 20th International Conference on Transparent Optical Networks, July 1-5 2018, Bucharest, Romania, Symposium SWP IV-Sub-wavelength Photonics Devices Paper Tu.A4.4, http://icton2018.upb.ro/programme/ INVITED Talk. ISBN: 978-1-5386-6604-3

69. S. M. Pietralunga, V.Sala, G.Cerullo, G.Lanzani, G.Irde, M. Zani, A.Tagliaferri, "Ultrafast Scanning Electron Microscopy (USEM) to probe charge dynamics in oxide thin films", Proceedings of CIMTEC 2018- 14th International Ceramics Congress, Perugia, Italy, June 4-8, 2018, Symposium CL7-Inorganic Materials Systems for Advanced Photonics, INVITED Talk.

70. G.Irde, S. M. Pietralunga, V.Sala, M.Zani, J. M. Ball, A.J. Barker, A. Petrozza, G.Lanzani, A.Tagliaferri, "Real-time dynamical imaging of light induced photo-voltages in hybrid halide perovskites by Scanning Electron Microscopy", Proceedings of EMAG2018, Applications of Electron Microscopy to Beam Sensitive Materials, 4–6 July 2018, University of Warwick, Warwick, UK, http://emag2018.iopconfs.org/home Oral Talk.

71. S. M. Pietralunga, V.Sala, G.Irde, G.Cerullo, G.Lanzani, M. Zani, A.Tagliaferri, "Ultrafast scanning electron microscopy (USEM) probing surface charge dynamics in oxide thin films", D-PHOTON 2018, Ist International Conference on Dielectric Photonic Devices and Systems Beyond Visible, October 1-2, 2018, Bari, Italy http://d-photon.fbk.eu/ INVITED Talk

72. A. Chiappini, C. Armellini, S.Nodehi, S.M. Pietralunga, "Tailoring Luminescence Properties of Silica-Based Er3+-Activated Inverse Opals", D-PHOTON 2018, Ist International Conference on Dielectric Photonic Devices and Systems Beyond Visible, October 1-2, 2018, Bari, Italy http://d-photon.fbk.eu/ Oral Talk

73. S.M. Pietralunga, V.Sala, M.Zani, G. Irde, G.Cerullo, G.Lanzani, A. Tagliaferri, "UHV Ultrafast Scanning Electron Microscopy", PhotonIcs & Electromagnetics Research Symposium- PIERS 2019, Rome, June 16-20, Session 1A2, Monday June 17th, Oral Talk (INVITED)

74. A. Chiappini, C. Armellini, S.Nodehi, S.M. Pietralunga and M. Ferrari, "Tailoring Luminescence Properties of Silica-Based Er3+-Activated Inverse Opals", IS-OM8 – 8th International Symposium on Optical Materials, June 9-14 2019, Wrocrawl, Poland, paper I-3, INVITED TALK. ISBN: 9788360043363 https://is-om8.chem.uni.wroc.pl/uploads/isom8/files/root/IS-OM8%20Book%20of%20Abstracts_compressed%20(1)_98b297.pdf

75. F. Ghezzi, M. Pedroni, E. Vassallo, S. M. Pietralunga, V. Spampinato, F. Causa, A. Cremona, M. Anderle, R. Caniello,J. Kovac, "Characterization of nanostructures formation in black-silicon obtained by CF4/H2 plasma process", IVC-21 - 21st International Vacuum Congress, July 1st-5th, 2019 Malmö Sweden, oral talk.

76. Giuseppe M. Paternò, Liliana Moscardi, Stefano Donini, Aaron M. Ross, Silvia M. Pietralunga, Nicholas Dalla Vedova, Simone Normani, Ilka Kriegel, Guglielmo Lanzani, and Francesco Scotognella "Hybrid plasmonic/photonic crystals for optical detection of bacterial contaminants", Proceedings of EOS Annual Meeting (EOSAM 2020), Topical Meeting (TOM) 7- Organic & Hybrid Semiconductor Materials and Devices, EPJ Web of Conferences 238, 07002 (2020), Number of page(s): 2, DOI https://doi.org/10.1051/epjconf/202023807002

77. Giuseppe M. Paternò, Aaron M. Ross, Silvia M. Pietralunga, Simone Normani, Liliana Moscardi,Guglielmo Lanzani and Francesco Scotognella, "The impact of bacteria exposure on the plasmonic response of silver nanostructured surfaces " Proceedings of EOS Annual Meeting (EOSAM 2021), Topical Meeting (TOM) 14- Advances and Application, oral talk.

78. Mohamed Zaghloul, Silvia M. Pietralunga, Gabriele Irde, Vittorio Sala, Giulio Cerullo, Hao Chen, Giovanni Isella, Guglielmo Lanzani, Maurizio Zani and Alberto Tagliaferri1, "Dynamical imaging of local photovoltage at semiconductor surface by photo-assisted ultrafast scanning electron microscopy", EOS Annual Meeting (EOSAM 2021) Topical Meeting (TOM) 13- Ultrafast Optical Technologies and Applications, EPJ Web of Conferences 255, 11001 (2021).

79. Hao Chen, Alessandro Chiasera Cristina Armellini, Giorgio Speranza Stefano Varas, Osman Sayginer, Antonio Alfano Marco Cassinelli, Mario Caironi, Raffaella Suriano, Mohamed Zaghloul, Alberto Tagliaferri, Maurizio Ferrari and Silvia M. Pietralunga, "Near-IR transparent conductive amorphous tungsten oxide thin layers by non-reactive radio-frequency magnetron sputtering", EOS Annual Meeting (EOSAM 2021) Topical Meeting (TOM) 6- Optical Materials: Crystals, Thin Films, Organic Molecules and Polymers, Syntheses, Characterization and Devices, EPJ Web of Conferences 255, 05003 (2021), https://doi.org/10.1051/epjconf/202125505003.

80. Silvia M. Pietralunga, Hao Chen, Alice Carlotto, Osman Sayginer, Lam T. N. Tran, Alessandro Chiasera, "Tungsten oxide films for near-infrared photonics and sensing", Proc. SPIE Europe, 2022, Strasbourg, France April 3,7 2022, INVITED TALK, Paper 12142-7. SPIE Proceedings Volume 12142, Fiber Lasers and Glass Photonics: Materials through Applications III; 1214205 (2022) https://doi.org/10.1117/12.2626511

81. Alice Carlotto, Osman Sayginer, Hao Chen, Lam T. N. Tran, Rossana dell' Anna, Anna Szczurek, Stefano Varas, Bartosz Babiarczuk, Justyna Krzak, Oreste S. Bursi, Daniele Zinta,Anna Lukiowiak, Giancarlo C. Righini, Maurizio Ferrari, Silvia M. Pietralunga, "RF-Sputtering fabrication of flexible glass-based 1D photonic crystals", Proc. SPIE Europe, 2022,

Strasbourg, France April 3,7 2022, Oral Talk, Paper 12142-9. SPIE Proceedings Volume 12142, Fiber Lasers and Glass Photonics: Materials through Applications III; 1214206 (2022) https://doi.org/10.1117/12.2621281

82. Hao Chen , Alice Carlotto, Cristina Armellini, Marco Cassinelli, Mario Caironi, Mohamed Zahgloul, Alberto Tagliaferri, Alessandro Chiasera, Silvia M. Pietralunga, , "Amorphous WO3 as transparent conductive oxide in the near-IR" Proc. SPIE Europe, 2022, Strasbourg, France April 3,7 2022, Poster presentation, Paper 12142-97. Proceedings SPIE 12142 (2022) pp. 121421J, Fiber Lasers and Glass Photonics: Materials through Applications III, doi: 10.1117/12.2626565.
83. A. Carlotto,S.M. Pietralunga, L.T.N. Tran, O. Sayginer, E. Iacob, A. Szczurek, S. Varas, J. Krzak, O.S. Bursi, D. Zonta A. Lukowiak, G.C. Righini, M. Ferrari, A. Chiasera, "RF – Sputtering Fabrication of Flexible SiO2/hfO2 Glass-based 1D Photonic Crystals and Planar Waveguides", CIMTEC 2022 - Symposium CL -Inorganic Materials Systems for Advanced Photonics, Perugia, Italy, June 20-24, 2022, Oral Talk CL-5:L04.
84. Alice Carlotto, Lam T.N. Tran, Anna Szczurek, Bartosz Babiarczuk, Osman Sayginer, Stefano Varas, Justyna Krzak, Oreste S. Bursi, Daniele Zonta, Anna Lukowiak, Giancarlo C. Righini, Maurizio Ferrari, Silvia Maria Pietralunga, Alessandro Chiasera "Flexible photonic systems: from 1D photonic crystals to active planar waveguides", SHIFT 2022- "Spectral sHapIng For biomedical and energy applicaTions", La Laguna, Tenerife – Canary Islands, Spain, October 10th-14th 2022, INVITED TALK.

Book chapters

1. A. Melloni, M. Martinelli, S. M. Pietralunga, and F. Morichetti, "Nonlinear interactions in slow-wave structures," in Nonlinear Guided Waves and Their Applications, A. Sawchuk, ed., Vol. 80 of OSA Trends in Optics and Photonics (Optical Society of America, 2002), paper NLMD15.
2. P.Martelli, S.M. Pietralunga, D.Nicodemi and M.Martinelli "Accurate Bit Error Rate Evaluation in Optically Preamplified Direct-Detection" in Optical Networks and Techologies, Ed. K. Kitayama, F. Masetti-Placci and G. Prati, Springer, New York, ©2005 ISBN: 0-387-23177-3, pp. 340-345Q.
3. S. M. Pietralunga, "Nanoparticle-doped organics waveguide optical amplifiers", in: "Emerging Nanophotonics Roadmap", Published by PhOREMOST Network of Excellence, Tyndall National Institute, Lee Maltings, Prospect Row,Cork,Ireland (2008) ISBN 978-0-9559725-0-8 ,pp. 87-89.

Book Editing:

1. S. M. Pietralunga, co-Editor in: " Emerging Nanophotonics Roadmap", Published by PhOREMOST Network of Excellence, Tyndall National Institute, Lee Maltings, Prospect Row,Cork,Ireland (2008) ISBN 978-0-9559725-0-8.
2. T. Tambosso, S. M. Pietralunga Eds., "Tecnologie per il fotovoltaico", AEIT, vol. 100 n. 9, September 2013 , ISSN 1825-828X
3. S. M. Pietralunga and S. Selleri, Editors "2020 Italian Conference on Optics and Photonics (ICOP)", Copyright ©2020 by the IEEE, IEEE Catalog Number:CFP20W76-ART, ISBN: 978-1-7281-6239-3, on-line at link: https://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=2020%20Italian%20Conference%20on%20Optics%20and%20Photonics%20

Silvia Maria Pietralunga