# *Curriculum of Maurizio Ferrari*

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| ***Name and Surname*** | ***Maurizio Ferrari*** |
| ***Date and Place of birth*** | ***25-06-1955 Trento (Italy)*** |
| ***Present Position*** | ***Senior Researcher C.N.R. since 31-12-2001 (Researcher C.N.R. since 01-12-1988 to 31-12-2001)*** |
| ***Identification Number C.N.R.*** | ***6612*** |
| ***Istitutional address*** | ***Institute for Photonics and Nanotechnologies, Trento*** |
| ***31-03-1981*** | ***Doctor in Physics Trento University Italy*** |
| ***1981*** | ***Teaching Enablement in Mathematics and Physics*** |
| ***1982/1983 1983/1984*** | ***Professor of Mathematics and Physics at II degree school*** |
| ***28-02-1983*** | ***Military service executed [dismissal 28-02-1983 ]*** |
| ***1984*** | ***Winner of the teaching chair in Sciences in 1983, resigned in 1984 to work in the research field at Claude Bernard University (Lyon, France).*** |
| ***1984-1987*** | ***European Researcher on C.E.E. grant at "Laboratoire de Physico-Chimie des Materiaux Luminescents" Claude Bernard University (Lyon, France).*** |
| ***01-12-1988*** | ***Winner of the Researcher position at C.N.R. (Centro C.N.R.-CeFSA) Fisica degli Stati Aggregati - Povo - Trento, Italy.*** |
| ***01-02-1991/31-05-1991*** | ***Invited Professor II Class at "Institut des Sciences de la Matiere", Université Claude Bernard, Lyon I.*** |
| ***01-04-1997/31-05-1997*** | ***Invited Professor I Class at"Laboratoire de Spectrochimie Infrarouge et Raman - CNRS", Université des Sciences et Technologies de Lille (France).*** |
| ***16-04-1998/16-05-1998*** | ***Associatde Professor I Class at University of Angers , Laboratoire POMA*** |
| ***01-07-1999/31-07-1999*** | ***Propriétés Optiques des Matériaux et Applications*** |
| ***01-05-2001/31-05-2001*** | |
| ***01-06-2004/30-06-2004*** | |
| ***1997-2000*** | ***Professor with external contract at the University of Trento, Faculty of Sciences : Physical Methodologies.*** |
| ***07-04-2000/27-04-2000*** | ***Invited Professor to the University of Araraquara (S. Paolo) Brasil*** |
| ***2000-2002*** | ***Professor with external contract at theUniversity of Trento, Faculty of Engineering : "Optical communications", Telecom Engineering class.*** |
| ***2001-2002*** | ***Professor with external contract at theUniversity of Trento, Faculty of Sciences :Optical Spectroscopy-PhD class.*** |
| ***24-06-2002/20-07-2002*** | ***Invited Professor I Class at "Laboratoire de Physico-Chimie des Materiaux Luminescents" Claude Bernard University (Lyon, France).*** |
| ***01-06-2003/30-06-2003*** | ***Invited Professor I Class at Université des Sciences et Technologies de Lille, Laboratoire CERLA (Lyon, France).*** |
| ***29-03-2005/26-04-2005*** | ***Invited professor I Class at Institut de Recherche en Ingénierie Moléculaire et*** |
| ***15-03-2007/14-04-2007*** | ***Matériaux Fonctionnels IRIM2F, FR CNRS n° 2575, Laboratoire des Oxydes*** |
| ***01-03-2008/31-03-2008*** | ***et Fluorures (LdOF) - UMR CNRS 6010,Faculté de Sciences – IUT, Université du Maine, Le Mans Francia.*** |
| ***2005-2006-2007-2008*** | ***External contract for the module "Photonic crystals and active glass-ceramics" at International Master in Nanotechnologies. CIVEN, Venezia-Porto Marghera.*** |
| ***22-06-2005/22-07-2005*** | ***Invited professor I Class at Laboratoire des Matériaux Inorganiques CNRS UMR 6002, Université Blaise Pascal, Clermont-Ferrand, Francia.*** |
| ***12-06-2006/12-07-2006*** | ***Invited professor I Class at Université Jean Monnet de Saint – Etienne, Laboratoire de Traitement du Signal et Instrumentatio, Groupe "Composants à Fibre Optique et Photosensibilité", St. Etienne France.*** |
| ***07-06-2007/24-06-2007*** | ***Invited Professor I Classe at Université de Pierre et Marie Curie, Paris, France.*** |
| ***2007-2008-2009-2010-2011-2012-2013-2014*** | ***Professor with external contract at University of Trento, PhD School in Physics, "Optical methods for materials diagnostics", 3 credits course.*** |

**Managerial responsibilities at CNR-IFN**

- Since 22-10-2013: Delegate of the CNR President in the joint committee between CNR and Associazione Gruppo Italiano di Elettronica.
- Since 01-04-2010: Delegate of the CNR President in the joint committee between CNR and University of Trento.

- Since 19-06-2008: Delegate of CNR-IFN Director for Trento Unit direction (UOS-CNR-IFN Trento)
- Head of CSMFO Lab. CNR-IFN Research Line: "Characterization and Development of Materials for Photonics and Optoelectronics", (http://www.science.unitn.it/~gcsmfo/).
- Person in charge Science Advisor "Photonics: Materials, structures, and diagnostic" of CNR-IFN at the Department Materials and Devices of CNR.
- Since April 23, 2002 to January 27,: Member of the Board of Management of the CNR-IFN Institute
- Since June 25, 2010: Member of the Board of Management of the CNR-IFN Institute

## Agreements

(2008-2011) CNR-IFN Responsible for the agreement between CNR-IFN Unit of Trento and CIVEN (Coordinamento Interuniversitario Veneto per le Nanotecnologie).

(2009-2012) CNR-IFN Responsible for the agreement between CNR-IFN Unit of Trento and IUT (Institut Universitarie de Tecnologie du Mans) Le Mans – Francia.

(2010) CNR-IFN UOS Trento Responsible for the agreement with the Consejo Superior de Investigaciones Cientificas (CSIC-Spain) concerning the scientific stage of dr. Araceli de Pablos Martin at CNR-IFN Trento from 14 March to 14 May 2011.

(2013-2016) CNR-IFN Responsible for the agreement between CNR-IFN Unit of Trento and Veneto Nanotech (Distretto Veneto per le Nanotecnologie Veneto Nanotech).

## Project leader:

***a)*** CNR-CNRS (1991-1993): "Development of original techniques for characterization and study of the properties of glasses prepared by sol-gel route doped by a) semiconductor nanoparticles b) rare earth ions"
***b)*** CNR "Special Project" (1996 –1997): Material Physics: Non-linear Optics and Integrated Optics – development of materials and processing. "Glassy waveguides for non-linear optics".
***c)*** PAIS 1999 Project: "Laser deposition of thin oxide films for optoelectronic devices".
***d)*** Joint Project CeFSA-Dept. of Physics (2000): GULP –"Planar waveguides"
***e)*** CNR-CNCPRST (2000-2003): "Sol-Gel-based waveguides for all-optical chemical and biochemical sensing. Sensors for water vapor"
***f)*** CNR-ICCTI (2001-2002): "Optical amplification in rare-earth doped glass integrated optical waveguides"
***g)*** CNR-CNRS (2002-2003) : "Improvement of the multi-target rf sputtering and sol-gel techniques for fabrication of $Er^{3+}$-$Yb^{3+}$ silica-based photonic components operating in the C-telecommunication band".
***h)*** CNR-Short Mobility 2003 "Developing planar waveguides in Erbium-activated tellurite glasses.
***i)*** PAT 2004-2006 FAPVU "Fabrication of optical planar amplifiers in ultratransparent glass-ceramics."
***j)*** CNR-CNRS (2004-2007): "Application of PVD technique to the fabrication of rare earth doped zirconium fluoride-based glass ceramics working as planar optical amplifier in the C-telecommunication band".
***k)*** European Project INTAS 2004-2005: "Mechanism of Optical Losses in Low Phonon Energy Glasses for Infrared Fibers".
***l)*** CNR – GRICES 2005-2006: "Fabrication by sol-gel and rf sputtering techniques of dielectric-based photonic crystals operating in the C-telecom band"
***m)*** CNR-Short Mobility 2005 "Development by sol-gel technique of nanocomposite materials for multifunctional photonic devices".
***n)*** Ministry of Foreign Affairs: Project FOTONE: "Fabrication of planar WDM optical amplifiers in nanostructured glassy matrix". Joint project for the scientific and technologic research between Italy and Morocco.2004-2006. Area: Information and Communication Science and Technology. Partner: Institue National des Postes et Télécommunications (INPT), Rabat.
***o)*** Ministry of Foreign Affairs "Significant bilateral research project" Italia-Vietnam "Synthesis and processing of nano-materials for sensing, optoelectronic and photonic applications" Ministry of Foreign Affairs : Italian-Vietnamese Programme of scientific and technological co-operation, 2006-2008.
***p)*** PAT 2007-2010 Progetto PAT Post-Doc - FaStFAL "Fabbricazione di Strutture Dielettriche a Cristallo Fotonico Inverso per Azione Laser nella Regione Nir", referente Post-Doc Dr. Andrea Chiappini.

***q)*** FCT 2007-2010 Progetto Post-Doc "Fabrication of 3-D dielectric photonic crystals by sol-gel processing for application in fiberoptic telecommunication systems". Scientific supervisor per il CNR-IFN dell'attività Post-Doc del Dr. Luís Miguel Amante Fortes finanziata da FCT (Fundaçao para a Ciencia e a Tecnologia) Ministero portoghese della Scienza, Tecnologia e Insegnamento Superiore. Scientific supervisor per Istituto Superior Técnico: Prof. Rui Manuel Amaral de Almeida .

***r)*** Working Group WG1 "Plasmonics, Metamaterials, and Non-reciprocity", COST Action MP0702 2008-2011: Towards Functional Sub-Wavelength Photonic Structures.

***s)*** ITPAR 2008-1011 project "Fabrication and Characterization of novel photonic crystal structures (polystyrene and polystyrene-silica) and Si/Ge quantum dots for photonics applications" India-Trento (Università degli Studi di Trento, Fondazione Bruno Kessler, Provincia Autonoma di Trento) Bose-Romagnosi Program for Advanced Research. Project Coordinators Prof. D. Narayana Rao, Prof. S. K. Ray, Prof. Lorenzo Pavesi, Dr. Maurizio Ferrari.

***t)*** PAT 2010 – 2013 Progetto PAT Post-Doc Incoming - NSBMO "Novel Silicon Based Materials for Optoelectronics", referente Post-Doc Dr. Davor Ristic.

***u)*** Polish Mobility Plus Program 2011 Project entitled „Synthesis and optical characterization of nanocrystalline lanthanide tetraphosphates and their application for fabrication of transparent ceramic and glass-ceramic composites" Researcher Dr. Anna Łukowiak (from 01-06-2012 to 31-07-2013).

***v)*** "Fabbricazione e Caratterizzazione di sistemi nano-strutturati meccano-cromici su base colloidale", research project funded by CARITRO Foundation. First investigator Dr. Andrea Chiappini (from 15 October 2012 to 30 November 2013)

***w)*** Italian coordinator SHYRO Project 2012 -2015 "Sources HYperfréquences à très haute pureté spectrale à base de mini-Résonateurs Optique : Phase de démonstration de la performance" Partners – France [Foton ; Femto-ST ; LAAS ; CNES] Italy [CNR-IFN]. Coordinaor Institution : CNES.

***x)*** ITPAR 2013-2015 project "Integrated nanophotonics for green photonics" " India-Trento (Università degli Studi di Trento, Fondazione Bruno Kessler, Provincia Autonoma di Trento) Bose-Romagnosi Program for Advanced Research. Project Coordinators Prof. D. Narayana Rao (Hyderabad Uni), Prof. Lorenzo Pavesi (Trento Uni), Dr. Maurizio Ferrari (IFN-CNR).

***y)*** Italian coordinator of MAE Significant Bilateral Project between Italy and Egypt (2013-2015) titled "Smart optical nanostructures for green photonics."

***z)*** Italian coordinator CNR-PAS 2014-2016 "Nanostructured systems in opal configuration for the development of photonic devices"

***aa)*** Scientific Responsible CNR-Short Mobility 2014 "Tailoring of the free spectral range and geometrical cavity dispersion of a coated microsphere".

***bb)*** Principal Investigator for the IFN Unit in the "Progetto Premiale "coordinated by Centro Fermi "Physics and Instrumentation for Human Health"

***cc)*** Institutional contact for the ISCRA project 2015 ICoDAPA – "An innovative numerical code for the design and the assessment of the optical properties of photonic anisotropic inverse structures".

## Leader of the Assistant Contractor Group in the following Project

***a)*** FIRB (2002-2006) "Miniaturized systems for electronics and photonics".

***b)*** Industrial Research and Development project (2008 -2009) HCSC (High Concentration Solar Cell) – OPTOI Srl

***c)*** NAOMI (2008-2010) "A NAno on MIcro approach to a multispectral analysis system for protein essays"

## Key scientist of following Projects:.

***a)*** Galileo Project (1996-1998): "Study of photosensitivity in inorganic materials obtained by sol-gel route. Application to all-optical devices"

***b)*** Galileo Project (1998-2000): "Development of planar waveguides activated by $Pr^{3+}$ and $Er^{3+}$ ions and metallic nanoparticles. Application to non-linear devices such as optical amplifiers, frequency converters, and all-optical switching"

***c)*** MURST-COFIN97 (1997-1998): "Preparation and spectroscopic characterization of planar waveguides activated by rare-earths or metallic nanoparticles"

***d)*** MURST-COFIN99 (1999-2000): "Composite materials and alloys: nanostructured shapes for optical and magnetic applications".

***e)*** MIUR-COFIN2002 (2002-2003):"Dynamic and Thermodynamic in out-equilibrium materials: structural glasses, gels and polymeric materials"

***f)*** MIUR-COFIN2002 (2002-2003):" Sol-gel synthesis, functionality and characterization of nanostructured molecular units in organic-inorganic hybrid materials for photonics applications"

***g)*** MIUR-COFIN2002 (2002-2003):"Nanostructured materials for integrated optics"
***h)*** NATO (2002-2003)"Optical and electrical properties of rare-earth activated a-C films", SA(PST.CLG.978890)6607/FP
***i)*** Co-Principal Investigator of joint Research Program 2003-2006, India-Trento Bose-Romagnosi Program for Advanced Research. Project Title: "Research & Development of Active Bulk and Planar Waveguides based on Nanostructured Glassy Systems".
***j)*** European Project -FP5 (2002-2006) "New Hybrid Nanocomposites From Functional NanoBuilding Blocks" –NBB-HYBRIDS
***k)*** MIUR-PRIN2004 (2004-2005): "Nano-composite glasses for photonics"
***l)*** Italian-Vietnamese Interuniversity Network, Research Project 2004-2005. Ministry of Foreign Affairs. Area: Basic and Applied Science.
***m)*** MIUR-PRIN 2005 (2006-2007): "Hybrid organic/inorganic materials for multiphotonic applications via assembling of nanostructured molecular units."
***n)*** Galileo project 2007 "Modeling and fabrication of innovative optical devices demonstrators for high-efficiency communication systems".
***o)*** CNR – GRICES 2007-2008. "Fabrication by sol-gel and rf sputtering techniques of dielectric-based photonic crystals operating in the C-telecom band"
***p)*** "Development of biosensors based on resonant optical structures for biomarkers precursors of sepsis" MIUR Project 2012.
***q)*** CNR – CONACYT bilateral project 2013-2015 "Frequency conversion in oxide glasses doped with rare earths"
***r)*** "HPC Simulations for Studying the Optical Properties of Photonic Crystals/Glasses and Plasmonic Structures" XI call C proposal to the ISCRA programme 2013
***s)*** MaDEleNA project 2013-2016 "Developing and Studying novel intelligent nanoMaterials and Devices towards Adaptive Electronics and Neuroscience Applications" founded by Provincia Autonoma di Trento.
***t)*** MAE Significant Bilateral Project between Italy and South Africa (2014-2016) "Plasmonics for a better efficiency of solar cells"

## Publications, scientific and didactic tasks, awards

ResearcherID: H-3362-2011
h-index: 32 [15/01/2015] Web of Science
Sum of the Times Cited: 3978
Average Citations per Article: 12.67

- *240 scientific articles on international reviews (ISI-JCR).*
- *25 scientific articles on international reviews (non ISI-JCR).*
- *206 publications in proceedings of national and international conferences.*
- *442 communication at national and international congress*
- *6 other publications*
- *10 Book chapters*
- *Several lectures in Italy and abroad as invited speaker*
- *Organization of several scientific lectures, congress, school and stages of research.*
- *Guest editor of Journal of Non-Crystalline Solid, Optical Materials, Opto-Electronics Review.*
- *Research co-Director/Tutor in Italy of : 14 Laurea Thesis (12 Physics, 1 Mathematics, 1 Applied Chemistry ) , 2 thesis "Diploma di Laurea" (1 Physical Methods, 1 Telecommunication Engineering), 2 thesis (MSc Thesis Master in Physics),* 11 *PhD Thesis (1 Materials Engineering, 1 Civil, Environmental and Mechanical Engineering , 9 Physics ).*
- *Member of the Jury at 24 Ph.D. Thesis in physics (15 in France, 3 in India, 3 in Italy, 3 in Spain).*
- *Referee of 18 PhD Thesis in Physics (2 in Italy, 9 in France, 2 in India, 1 in Egypt, 4 in Spain), 1 MSc Thesis Master in Physics (Universiti Teknologi MARA), 1 PhD Thesis ICT (Italy).*
- *Referee of 2 HDR Thesis " Habilitation à diriger les recherches": 1 in Chemistry, area inorganic chemistry and materials chemistry, at Université Pierre et Marie Curie, Paris 6, title of HDR thesis "Evolutions structurales dans les verres d'oxydes sous irradiation ionisante: des verres nucléaires aux applications pour l'optique." ; 1 in Material Science at Université de Lille1, title of HDR thesis "Réalisation et caractérisation de matériaux pour des applications dans les télécommunications et en optoélectronique (cellules solaires) : matrices sol-gel et nanoparticules semi-conductrices ou métalliques."*
- *Member of several Scientific, Program and Steering Committees, and Co-Chair in national and international conferences and workshops*
- *Member of evaluation committee at CNR and for other national and foreign research institutions*
- *Member of Evaluation Committee of UMR-CNRS laboratories.*

- *Invited Professor in several Universities, especially in France, and external teacher for some courses at the Trento University.*
- *SIOF (Italian Society of Optics and Photonics), SPIE (Senior Member), OSA, EOS member*
- *Member of the Chair Committee of SIOF 2003-2008*
- *Referee of several international scientific reviews (ACS Nano; Advanced Device Materials; Advances in Materials Science and Engineering; Advanced Optical Materials; ACS Applied Materials & Interfaces; Applied Optics; Applied Physics A; Applied Physics B; Applied Physics Letters; Applied Spectroscopy; Applied Surface Science; Central European Journal of Physics; Ceramics International; Chemical Physics; Chemical Physics Letters; Chinese Optics Letters; Dyes and Pigments; European Physical Journal - Applied Physics (EPJAP); Europhysics Letters; Fibers; IEEE Journal of Quantum Electronics; IEEE Photonics Journal; IEEE Photonics Technology Letters; IEEE Transactions on Nuclear Science (TNS); International Journal of Applied Glass Science; International Journal of Optics; International Materials Reviews; Journal of Alloys and Compounds; Journal of Applied Physics; Journal of Lightwave Technology; Journal of Luminescence; Journal of Material Research; Journal of Material Science; Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3); Journal of Nanomaterials; Journal of Nanoparticle Research; Journal of Nanophotonics; Journal of Non-Crystalline Solids; Journal of Optical Society of America B; Journal of Optics; Journal of Optics A: Pure and Applied Optics; Journal of Physics and Chemistry of Solids; Journal of Physics D: Applied Physics; Journal of Physics: Condensed Matter; Journal of Raman Spectroscopy; Journal of Rare Earths; Journal of Solid State Chemistry; Journal of Sol-Gel Science and Technology; Journal of the American Ceramic Society; Laser Physics Review; Material Research Bulletin; Materials; Materials Chemistry and Physics; Materials Letter; Materials Research Express; Materials Science and Engineering B; Modern Physics Letters B; Nanoscale Research Letters; Nanotechnology; New Journal of Chemistry; New Journal of Physics; Optical Engineering; Optical Materials; Optical Materials Express; Optics Communications; Optics Express; Optics Letters; Opto-Electronics Review; Philosophical Magazine; Philosophical Magazine Letters; Photonics Journal; Physica B Condensed Matter; Physica Scripta; Physical Chemistry Chemical Physics; Physical Review B; Physical Review Letters; Physics Letters A; Powder Technology; Science of Advanced Materials; Semiconductor Science and Technology; Sensors; Sensors & Actuators: A. Physical; Solid State Communications; Solid State Sciences; Spectroscopy Letters; Surface Review and Letters; The Journal of Physical Chemistry; Thin Solid Films.)*
- *Member of Committee of Institute CNR-IFN since April 23, 2002.*
- *Scientific evaluator of Research Projects and Applications submitted to foreign institutions: 1)"Materials Sciences and Engineering", Science and Technology Foundation – Portugal; 2)"Sciences et Technologies de l'Information et de la Communication" Région Bretagne, Direction de l'Enseignement supérieur, de la Recherche, des transferts de Technologies et de la Valorisation; 3) Engineering, technology, instrumentation, materials science, experimental fluid dynamics / Opto-electronic (including lasers, optical microscopy), International Joint project, Royal Society,UK; 4) Agence Nationale de la Recherche ANR – France ; External assessor of the Universiti Teknologi MARA for the promotion exercise of academic staff; 6) Futuro in Ricerca 2010 MIUR; 7) Reviewer for the ANVUR-VQR(2004-2010); 8) RS-DFID Africa Network Grants – 2013; 9) Agency for Science and Higher education Croatia.*
- *2007 Award MIPRO Croatian Society for exceptional outstanding paper "Coherent Raman Scattering of Acoustical Vibrations of Three-dimensional Ge Quantum Dot Supracrystals" by M. Ivanda, M. Buljan, U.V. Desnica, G. Dražić, N. Radić, P. Dubćek, S. Bernstorff, M. Ferrari*
- *2010 Elected to the grade of Senior Member of SPIE for specific achievements in photonic glasses and spectroscopic characterization techniques*
- *2011 Award "Friend of Mipro" from the Croatian Society of Information Communication Technoloy, Electronics and Microelectronics – MIPRO – for dedication to the idea and mission of MIPRO*
- *Member of the Editorial Advisory Board of Journal of Non-Crystalline Solids (since 1 October 2011).*
- *Member of the Optical Engineering Editorial Board (since September 2010)*
- *SPIE Newsroom Editorial Assistant (Since 14 September 2011)*
- *Member of Editorial Board of Journal of Materials (Since 19 July 2012)*
- *Member of the Editorial Board of Optical Materials (Since 13 March 2013)*
- *Member of the Editorial Board of Indian Journal of Materials Science (Since 30 April 2013)*
- *2012 OSA Journal Referee lapel pin assigned by the Optical Society for Maurizio Ferrari commitment to maintain the quality of OSA publications.*
- *2012 OSA Outstanding Reviewer Award*
- *2013 Elected on 28 Nov 2012 to the grade of Fellow of SPIE for achievements in synthesis and characterization of rare-earth doped optical materials.*
- *2014 Optical Materials - Certificate of Excellence in Reviewing 2013*
- *2014 Journal of Luminescence - Certificate of Excellence in Reviewing 2013*

## Main scientific area of research

- *Properties, structure and processing of glasses, crystals and film for optical applications and photonics.*
- *Glasses obtained by melting and by sol-gel route activated by rare-earth ions and chromophores (local structure, nucleation, crystallization, energy transfer, optical and spectroscopic properties)*
- *Planar waveguides obtained by different techniques (dip-coating, spin-coating rf-sputtering, ionic-exchange) activated by rare-earth ions and chromophores (local structure, nucleation, crystallization, energy transfer, optical and spectroscopic properties)*
- *Nanostructured, composite and nanophase materials i.e. ultratransparent glass ceramics and co-doping with metallic nanoparticles and confined structures (bulk, film, planar waveguides, photonic crystals, microcavities, and microresonators)*

## Research techniques

- *Time Resolved Resonant and non-resonant luminescence spectroscopy*
- *Raman and Brillouin spectroscopy (Low Frequency Inelastic Raman Scattering)*
- *m-line spectroscopy and luminescence, Raman, and Brillouin spectroscopies in waveguide configuration, losses measurement and measurements of amplification or signal enhancement*
- *Modeling of the chemical-physical processes in glasses and structures.*
- *Preparation of glasses, waveguides, and confined structures by sol-gel route and rf sputtering.*

## Main Current Collaborations

A wide network of collaboration is working, including a large number of local, national, and foreign research centers, as well as technological advanced private and public structures. The synergy with local research centers and university are optimal.

IFN Trento is one of the actors of the "Trentino system for research and high education" and successfully operates in this framework driven by specific agreements and committees:

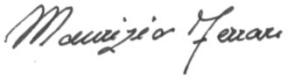
- Framework agreement between Autonomous Trento Province (PAT) and National Research Council (CNR)
- Framework agreement between National Research Council (CNR) and Bruno Kessler Foundation (FBK)
- Framework agreement between National Research Council (CNR) and University of Trento
- Memorandum of Understanding between IFN and FBK
- Strategic Advisory Board CNR-FBK
- Scientific and Technical Committee CNR-FBK
- Memorandum of Understanding between IFN and Physics Department of University of Trento

The collaborations activated at national and international level reflect the ability of IFN researchers to promote scientific and technical networking leading to projects of local, national, and international strategic interest including European projects. A non-exhaustive and continually evolving list of collaborating institution and scientists is given below:

- Centro Fermi, Roma, Italy, Giancarlo C. Righini (Glass Photonics and applications).
- CNES, Centre national d'études spatiales, Toulouse, France, Gilles Cibiel (The common activity is defined in the Act of Engagment between IFN and CNES regarding SHYRO project).
- CNR-IFAC, Microdevices for Photonics Laboratory, Firenze, Italy, Stefano Pelli, Gualtiero Nunzi Conti, Giancarlo C. Righini (Micro-optical devices for photonics; Glass integrated optics).

- College of Engineering, Swansea University, Swansea, UK, Stefano Taccheo (Laser, Laser materials, Optical amplifiers, Fibers).
- DEMat Departamento de Engenharia de Materiais, Instituto Superior Técnico, Lisboa, Portugal, Rui Almeida (Glasses and thin films for nanophotonics and integrated optics)
- Departamento de Química, Universidade de São Paulo, Ribeirão Preto, Brazil, Rogéria Rocha Gonçalves ( Sol-Gel Photonics)
- School of Physics, University of the Witwatersrand, Johannesburg, South Africa, Alexander Quandt (Computational and Theoretical Solid State Physics).
- ENSSAT Ecole Nationale Supérieure des Sciences Appliquées et de Technologies, CNRS, Université de Rennes1, Lannion, France, Feron Patrice (Integrated optics microlasers and microresonators)
- ILM, Institut Lumière Matière, CNRS, l'Université Claude Bernard Lyon1, Lyon, France, Joel Bellessa, Bernard Champagnon, Christophe Dujardin (Functional Materials and Optics of Materials, Nanoscience, Nanomaterials, Nanophotonics)
- IMMM Institut des Molécules et Matériaux du Mans, CNRS, Université du Maine, Le Mans, France, Brigitte Boulard, Claire Arfuso Duverger (Fluoride-based glasses and photonic systems)
- Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland, Wieslaw Strek, Anna Lukowiak (RED glass ceramics and micro- nanocomposites).
- Instituto de Cerámica y Vidrio (CSIC), Departamento de Vidrios, Madrid, Spain, Alicia Duran (Photonic glass ceramics).
- International Training Institute for Materials Science (ITIMS) and Advanced Institute for Science and Technology (AIST), Hanoi University of Science and Technology, Hanoi, Vietnam, Nguyen Duc Chien, Tran Ngoc Khiem, Pham Thanh Huy, (Functional photonic materials and devices, fabrication and assessment; Nanoscience and Nanotechnology; Sustainable Energy Systems ).
- IUT, Institut Universitaire de Technologie du Mans, Le Mans, Claire Arfuso (Research and formation stages for IUT students. The common activity is defined in the Memorandum of Understanding between IFN-Trento and IUT Le Mans).
- Laboratory of Photonic Materials, Institute of Chemistry, UNESP, Araraquara, Brazil, Ribeiro Sidney (Materials for Photonic Applications: Glasses, Optical Fibers and Sol-Gel Materials)
- LASIR, Laboratoire de Spectrochimie Infrarouge et Raman, CNRS, Université de Lille1 et de Lille2, Lille, France, Sylvia Turrel (Photorefractive Materials, non-conventional glasses, Structural properties).
- National Institute of Telecommunications, Department of Transmission and Optical Technologies in Warsaw, and Kielce University of Technology, Poland, Marian Marciniak (Optical communication, Information Science and Technology).
- Novel Photonic Glasses Group of Mechanical, Materials and Manufacturing Engineering, University of Nottingham, U.K., Angela Seddon (Nano- and micro-structure of special glasses; optical properties; optical devices)
- NRC National Research Center, Giza, Egypt, Inas Kamal Battisha (Nanotechnology and Advanced Materials-Smart optical nanostructures for green photonics ).
- Politecnico Bari, Dipartimento di Ingegneria Elettrica e dell'Informazione, Bari, Italy, Francesco Prudenzano, (Modeling of photonic structures and devices)
- Ruder Boskovic Institute, Laboratory for Molecular Physics, Zagreb, Croatia, Mile Ivanda (LPCVD and PVD techniques for photonics films and advanced applications; Development of new methods and techniques of Raman scattering).
- Università di Padova, Dipartimento di Ingegneria Industriale Set. Materiali, Padova, Italy, Alessandro Martucci (Sol-gel materials for photonics)
- Università di Verona, Dipartimento di Biotecnologie, Laboratorio di Chimica dello Stato Solido, Verona, Italy, Marco Bettinelli (RED glasses and crystals).
- Universitè Béni Mellal, Faculté des Sciences & Techniques, Départment de Physique Appliquée, Morocco, Adel Bouajaj (All-optical chemical and biochemical sensing).
- Universiti Teknologi Mara, Faculty of Applied Science, Shah Alam, Malaysia, Hj Mohd Kamil Abd Rahman (Sol gel - derived photonic devices).
- Veneto Nanotech, Laboratorio di Ottica, Venezia-Marghera, Italy, Francesco Enrichi (Photonic Materials. The common activity is defined in the Memorandum of Understanding between IFN-Trento and Veneto Nanotech).

Trento January 9th 2015



Maurizio Ferrari