

Marco ROSSI - CV

ACADEMIC APPOINTMENTS

- Dec 2013-present: qualified for the position of Full Professor in Experimental Physics of matter (SC 02/B1).
- Jan 2005-present: Associate Professor of Experimental Physics, Department of Fundamental and Applied Sciences for Engineering (formerly Dept. of Energetics) of Sapienza and head of EMINA (Electron Microscopy and NANoscopies) Lab.
- Oct 2001: qualified for the position of Associate Professor in Experimental Physics (SSD FIS/01).
- Jul 1991-Dec 2004: Researcher at Sapienza, Department of Energetics, and temporary Professor of General Physics (Nov 1994-Dec 2004) at the Faculty of Engineering.

OTHER MAIN APPOINTMENTS AND COMMITMENTS

- Nov 2016-present: Director of the MS Program in Nanotechnology Engineering.
- Mar 2016-Nov 2016: Coordinator of the 'Commissione Monitoraggio', Faculty of Civil and Industrial Engineering.
- Feb 2015-present: Vice-president of the scientific association 'Nanoitaly'.
- 2010-present: Member of the administrative board of the spin-off company Nanoshare Srl.
- Nov 2007-present: Member of the board of the PhD Course in "Electromagnetism" of Sapienza.
- 2006-present: Member of the executive scientific board of the Research Center for Nanotechnology of Sapienza (CNIS), since its foundation.
- 2004-present: Associate Researcher of the Consortium for the Physical Sciences of Matter (CNISM), since its foundation.
- 1990-2003: Associate Researcher at INFN (National Institute for the Physics of Matter) until its merging into the National Research Council (CNR).

MAIN TEACHING EXPERIENCE

- 2008-present: Course of 'Microscopies and Nanocharacterization techniques' for the second cycle degree (Laurea Magistrale) in Engineering Nanotechnology.
- 2005-08: Course of 'Electron Optics' for the second cycle degree in Sciences for Engineering.
- 2003-05: Course of 'Electron Microscopy techniques for the environment and cultural heritage' for the Master in 'Nuclear techniques for industry, environment and cultural heritage'.
- 1994-present: Courses of 'General Physics I' and 'General Physics II' for the first cycle degrees in Industrial Engineering.

RESEARCH INTERESTS

- During the PhD period and at the beginning of my academic carrier (1988- 1998), I dealt with low-power pulsed laser annealing (LPPLA) of ion-implanted III-V semiconductors. Then I studied solid-state laser interaction applied to the processing of various materials (ZnO, LiNbO₃, glassy carbon). In this context, I gained expertise on different analysis techniques, in particular, transmission electron microscopy and electron diffraction, spending also some periods of training at the Institute of Solid State Physics and Electron Microscopy in Halle (Germany).
- Since 1993, my research interest is focused on the study of synthesis, modification and characterization of carbon-based materials (diamond, diamond-like, nanotubes, nanocomposites, hybrid materials, etc). I used extensively various electron and scanning microscopy, and diffraction techniques as means to investigate structural and morphological features of the C-based materials of interest. The main achieved results regarded the study of the interfaces diamond film/substrates and the identification of a new diamond polytype and of modified forms of graphite; the synthesis of highly oriented diamond films and new forms of hybrid materials.
- Since 1998, my research activity regards mainly problems of nanoscience and nanotechnology, focusing in particular on the structural and functional study of carbon nanotubes and other carbon nanostructures (from nanographites to ultrananodiamond) obtained through innovative technologies of synthesis. In such a context, scanning probe microscopies have been also used and an innovative methodology for the mechanical and elastic characterization has been implemented and developed.
- In the last recent years, a relevant part of my research activity is also devoted to defining new methodologies and strategies for soft matter imaging (from polymers to bacteria) through a

combined and synergistic use of electron microscopies, diffraction techniques and scanning probe microscopies with related spectroscopies.

The experimental activities are carried out in the labs of EMINA (Electron Microscopies and Nanoscopies) research group, located in the Dept. of Basic and Applied Sciences for Engineering, and in the Sapienza Nanosciences and Nanotechnologies (SNN) lab of the Center for Nanotechnologies for Engineering (CNIS).

The available techniques are mainly based on Electron and X-Ray Diffraction (RHEED, TED and XRD), electron microscopies (TEM, SEM) and probe microscopies (AFM, SPM), benefiting of the new state-of-art instrumental platforms recently installed.

The international relations of the laboratory include projects and scientific contacts with research community across the world, including France, Canada, Germany, Russia, USA, UK, Ukraine and other countries.

The EMINA research group, founded and coordinated by Prof. Marco Rossi, is a nanoscience and a nanotechnology-oriented group that brings together senior researchers, postdoctoral associates, PhD students and undergraduate students.

Research activities of the laboratory are mainly focused on material science and related technological applications, with the aim to promote advanced materials research through the developing of new nanocharacterization tools for different types of functional applications.

EMINA group is committed to the development of nanometer scale measurements techniques and methodologies, based on the combined and synergistic use of electron microscopies and diffractions and atomic force microscopies (AFM).

In particular, the team has a long and well-recognized reputation in the field of Carbon-based nanomaterials (from nanographites to ultrananodiamond) with more 120 publications on the more important international scientific journals.

A relevant part of research activity is devoted to defining new methodologies and strategies for soft matter imaging (from polymers to biological objects) through a combined and synergistic use of electron microscopies, diffraction techniques and scanning probe microscopies with related spectroscopies.

BIBLIOMETRIC DATA

- More than 190 scientific papers in international peer-reviewed journals and books (more than 160 of which indexed on WoS and/or Scopus archives) with an overall impact factor of more than 370, h-index=26 (combining WoS and Scopus) and 29 (combining also Google Scholar); more than 2400 citations (on WoS and Scopus) and more than 3000 on Google Scholar, I10-index=95 (<https://scholar.google.it/citations?user=gQULpSEAAAAAJ&hl=it>).
- More than 350 communications in international conferences.
- Two patents on innovative C-based materials.

MOST RELEVANT FUNDED PROJECTS

- 2018-23: Project ATOM (Advanced TOMography and Microscopies), granted by Regione Lazio, call 2017 Open Infrastructure for research.
PI of the Project with the full responsibility of the budget (about 2.5 Meuro)
- 2016-19: Project NANOFAB (Sviluppo di innovative soluzioni tecnologiche di processo per l'uso di nanomateriali per la fabbricazione di tessuti sensorizzati), granted by the Italian Ministry of Economic Development MISE (F/030004/02/X28). Project global cost: 4650 k€. PI of the Local RU @ CNIS Sapienza with a local cost of about 30 k€. Scientific Coordinator of the R&D activities of Nanoshare Srl with a budget of about 200 k€.
- 2010->31 May 2017: Scientific coordinator of the project “STOR-AGE Realisation of an innovative system for Hydrogen storage by hybrid nanocomposites materials embedded in conductive polymeric matrices”. Call based on art. 11, D.M. n. 593, 8/8/2000 for the creation of new companies for technology transfer. Project approved (Prog. 13/8) and supported by MIUR with a financial support of 437 k€ for the spin-off company Nanoshare Srl (www.nano-share.com).
- 2014->31 May 2017: Scientific coordinator for the Italian side of the joint Project “DITCA - Diamond Insulating Thermal Conductive Adhesive for Electronics” in the framework of the Italy-Israel R&D Cooperation Program (call 2014 Industrial Track) and supported by MAECI (Ministero Affari Esteri e della Cooperazione Internazionale) with a financial support of 175 keuro.

- 2013-15: Project “ADIMENA - Assemblaggio di dispositivi a microonde sia per brasatura con lega eutettica sia per incollaggio con materiali nano strutturati per applicazioni di apparati trasmettenti”; granted by Regione Lazio, call 2012 Co-Research, supported in the framework POR FESR Lazio 2007/13 - Ref. FILAS-CR-2011-1391; Global cost: 341 keuro.
- 2012-14: Project “TOMOSEM – Developing of a tomographic system for Scanning Electron Microscopy”; granted by Regione Lazio, call 2012 Co-Research, supported in the framework POR FESR Lazio 2007/13 - Ref. FILAS-CR-20 11-1110; Global cost: 412 keuro. PI of the Local Unit of Research @ Sapienza.
- 2010-13: Project “SENSATIONAL - Fabrics integrated with gas nanosensors for personal protective equipment production”, Call Industria 2015 - Made in Italy, granted by Ministry of Economic Development (prot. MI01_00070, 01.09.2010 – 30.08.2012) Project global cost: 6.218 k€. PI of the Local RU @ Sapienza with a local cost of 239 k€.
- 2012: PI of the project “Nanodiamond for selective and highly sensitive biosensors”, funded by Sapienza after external peer reviewing process (prot. C26A12H4E8), with about € 60 keuro
- 2011-12: PI in the R&D contract “Nano-diamond Application (NADIA)” granted by SELEX Sistemi Integrati SpA (Finmeccanica group).
- 2010-12: Project “Advanced nanomaterials and nanostructures for field- and photo-emission based devices” call PRIN (Projects of Relevant National Interest) 2008 under the coordination of prof. L. Palumbo, supported by MIUR for 134 k€. Vice-coordinator of the project and of the local RU (cost: 58 k€)
- 2010-11: PI in the R&D contract “Software Infrastructures for DBNano data Bases” granted by SELEX Sistemi Integrati SpA (Finmeccanica group).
- 2010-11: PI in the R&D contract “Environmental Impact of Nanomaterials and Nanotechnologies” granted by SELEX Sistemi Integrati SpA (Finmeccanica group).

- 2008-11: Project “NANORAY for the realisation of X-rays sources based on carbon nanotubes”. (Call FP7-SME-2007 - Grant Agreement N. 222426: 11.11.2008 - 30.01.2011, global cost: 1.467 k€) Scientific coordinator of the local research partner @ Sapienza, supported by EU for 238 k€.
 - 2009-10: Co-PI in the R&D contract “Thermal Management for power chips and CNT synthesis process for Microelectronics” granted by SELEX Sistemi Integrati SpA (Finmeccanica group).
 - 2009: PI of the Project "Implementation of a multi-beam platform for lithography and chemical-physical characterization at the nanoscale”, funded by Sapienza with € 130 keuro.
 - 2004-06: Project “Synthesis and preparations techniques, functional characterizations and innovative applications of carbon-based nanostructures and nanocomposites”, call PRIN 2008 under the coordination of prof. Maria Letizia Terranova, supported by MIUR for 210 k€. PI of the local RU @ Sapienza, with a funded support of 64 k€.
- In the same period, I have also been involved as participating scientist in other 14 academic and industrial research projects.
- 2002-06: PI of the local RU @ Sapienza of the project “Development of technologies and modeling processes for the synthesis of nanophases and nanostructured materials”, call FISR 2002 (Special Supplemental Funding for Research), under the national coordination of ENEA. Funded support of about 42 k€.

EDITORIAL ACTIVITIES I (editors of books, special issues and proceedings)

Marco Rossi, Luciana Dini, Daniele Passeri, Maria Letizia Terranova and Marco Vittori Antisari - Editors, Proceedings of NanoInnovation 2016 (Roma, 23–26 September 2016) AIP Conf. Proc. (2017).

Marco Rossi, Luciana Dini, Daniele Passeri, Maria Letizia Terranova and Marco Vittori Antisari - Editors, Proceedings of Nanoitaly 2015 (Roma, 21–24 September 2014) AIP Conf. Proc. 1749 (2016).

M. L. Terranova, S. Orlanducci, and M. Rossi – Guest Editors of a Special Section on Nanodiamonds for Biomedical Applications; *Journal of Nanoscience and Nanotechnology* 15 (2015) 956-1082.

Marco Rossi, Luciana Dini, Daniele Passeri and Maria Letizia Terranova – Editors, *Proceedings of Nanoforum 2014 (Roma, 22–25 September 2014)* AIP Conf. Proc. 1667 (2015)

Marco Rossi, Carlo Mariani and Maria Letizia Terranova – Editors, *Proceedings of Nanoforum 2013 (Roma, 18–20 September 2013)* AIP Conf. Proc. 1603 (2014)

C. Mariani, M. Rossi, M. L. Terranova, M. Vittori Antisari – Editors, *Nanoforum 2012, VIII edition Proceedings – Il Nuovo Cimento vol. 37* (2014)

M.L. Terranova, S. Orlanducci, and M. Rossi – Editors of 'Carbon nanomaterials for gas adsorption'; CRC Press Taylor & Francis Group (2012) 312 pp, ISBN 9789814361439

M. Rossi and M.L. Terranova - Guest editors of: Special Issue on 'Advanced Carbon Nanostructures', *Nanoscience and Nanotechnology Letters* 3 (2010) 1-124.

Proceedings of the 17th International Congress on Acoustics, Vols. I-VIII+Cumulative Index; Editor: A. Alippi; Co-editors: A. Bettucci, G. Brambilla, M. Germano, M. Rossi, Rome, Sept. 2-7, 2001, published by ICA Srl, Roma, 2002 (ISBN 88-88387-XX-Y). Vol I: Physical acoustics (part A), pp. I-XVIII, 1-308; Vol II: Physical acoustics (part B) Vibrations and structural acoustics; pp. I-XX, 1-396; Vol III: Underwater acoustics and Signal-Computational-numeric, pp. I-XVI, 1-246; Vol IV: Measurements techniques and transducers; pp. I-XVI, 1-270; Vol V: Architectural acoustics, pp. I-XX, 1-396; Vol VI: Noise, pp. I-XVIII, 1-332; Vol VII: Biomedicine, pp. I-XVI, 1-260; Vol VIII: Music, Psychoacoustics, Speech, pp. I-XVIII, 1-358; Cumulative Index, pp. 1-86.

EDITORIAL ACTIVITIES II (Editorial Board Member of Scientific Journals)

- Advances in Materials Science and Engineering (Mar 2017-present)

Editorial Board Member with full responsibility of the publication process. 4 manuscripts managed up to now.

Indexed on WoS and Scopus with IF=1.010

- Journal of Nanotechnology (2016-present)

Editorial Board Member with full responsibility of the publication process. More than 20 manuscripts managed up to now.

Indexed on WoS and Scopus

- Journal of Nanomaterials (2014-present)

Editorial Board Member

Indexed on WoS and Scopus with IF=1.758

- Frontiers in Materials, section Carbon-based Materials (2014-2016)

Associate Editor

PAPERS REVIEWING ACTIVITY

- Reviewer of more than 300 papers (in the last 10 years) for 58 leading international peer-reviewed journals. Top reviewer of Sapienza on www.publons.com

PROJECTS AND OTHER REVIEWING ACTIVITIES

- 2015-16: Reviewer of grant proposals for the National Science Center, Poland
- 2015: Reviewer for a Marie Curie COFUND Programme within the EU 7th Framework Programme, named "PISCOPIA", that intends to support the most promising junior researchers of any nationality for a period 24 months to carry out a research project at the University of Padova.
- 2011-15: Reviewer of Projects funded by MIUR (Italian Ministry of Education, University and Research) on the following calls: PRIN 2009, FIRB 2013, SIR 2014
- 2006-14: Reviewer of the research projects funded by the University Franco-Italian (calls Vinci and Galileo).
- 2012-13: Reviewer for VQR activities 2004-2010, MIUR. More than 20 papers.
- 2012: Reviewer for a research project funded by the Natural Sciences and Engineering Research Council/Conseil de recherches en sciences naturelles et en génie du Canada (NSERC/CRSNG) of Canada

ON-LINE PROFILES

- ORCID: 0000-0001-7603-1805
- ResearcherID (WoS): G-1689-2012 - <http://www.researcherid.com/rid/G-1689-2012>
- SCOPUS Author ID: 55819540100
- RESEARCHGATE: RG score: 40.33, at 97.5th percentile.
https://www.researchgate.net/profile/Marco_Rossi5 - personal
- PUBLONS: www.publons.com/a/515474/ - Top reviewer @ Sapienza University of Rome (2016)
- GOOGLE: <https://scholar.google.it/citations?user=gQULpSEAAAAJ&hl=it>

ORGANISATION OF CONFERENCES

- 2018: Eurasia 17th: Roma, Sept. 5-8, 2018; Conference secretary
- 2017-18: NanoInnovation 2018: Roma, Sept. 11-14, 2018; Chair. More than 1300 expected participants.
- 2016-17: NanoInnovation 2017: Roma, Sept. 26-29, 2017; Chair. More than 1200 participants.
- 2015-16: NanoInnovation 2016: Roma, Sept. 20-23, 2016; Chair of the Organizing Committee. More than 1000 registered participants.
- 2015: Techniques of Microscopy and Electronic Diffraction Characterization of Semiconductor Devices: L'Aquila, 29-30 giugno, 2015; co-Chair of the Organizing Committee, in collaboration with Lfoundry and Gran Sasso Science Institute (GSSI).
- 2014-15: NanoItaly 2015: Roma, Sept. 21-24, 2015; Chair of the Organizing Committee. More than 700 registered participants.
- 2015: International Workshop on Micro-Nano-Bio-ICT Convergence: Lecce, 13-15 July 2015; Member of Scientific Committee.
- 2013-14: Nanoforum X Edition: Roma, Sept. 22-24, 2014; Coordinator of the Promoting Committee.
- 2012-13: IV International Symposium on the Surfaces and Interfaces of Biomaterials - ISSIB: Sept. 24-28, 2013; Coordinator of the Organising Committee.
- 2012-13: Nanoforum IX Edition: Roma, Sept. 18-20, 2013; Coordinator of the Promoting Committee.
- 2011-12: Nanoforum VIII Edition: Roma, Sept. 24-26, 2012; Coordinator of the Promoting Committee.

- 2010-11: Nanoforum VII Edition: Roma, Sept. 14-15, 2011; Coordinator of the Promoting Committee.
- 2007-08: Study Days on the new opportunities for bio & nanoscience and nanotechnology: Rome, March 7, June 28, October 24, 2008, Member of the Scientific Committee.
- 2006-07: Workshop on Carbon Nanotubes for Electronic Applications, ICNTE 2007: Bologna, May 24-25; Member of the Organising Committee and of the Scientific Committee.
- 2002-03: Euronoise 2003: Napoli, May 19-21, 2003, Member of the Organising Committee.
- 1999-02: 17th International Congress on Acoustics, 17th ICA: Rome, Sept. 2-7, 2001; Member of the Organizing Committee, with responsibility as Treasurer and General Supervisor; approximately 1750 registered participants of which over 90% foreign.