

Dr. Michele Ortolani

PhD in Materials Science at Sapienza University of Rome, 2005.

Website: <https://sites.google.com/a/uniroma1.it/micheleortolani-eng/home>

Current Position

Sapienza University of Rome, Italy - since December 2011. Department of Physics, Infrared Spectroscopy Group.

RESEARCH: Terahertz spectroscopy and imaging with tunable all-electronic sources. Near-field spectroscopy and imaging with quantum cascade lasers. Infrared Plasmonics: theory, experiment, fabrication. Infrared spectroscopy of solid state materials for electronics and photonics.

TEACHING: General Physics at Faculty of Engineering (140 students/year, 120 hours/year); supervision of 2 PhD students/post docs and 3 master students per year (on average).

Curriculum Vitae

→ From August 2013

UNIT COORDINATOR in a Information and Communication Technology Cooperation Project funded by the European Commission, 7th Framework Programme, **Future Emerging Technology (FET)** – Open X-track. Unit based at Department of Physics, Sapienza University of Rome, Italy
Project title: “GEMINI: Germanium Mid-Infrared Plasmonics for Sensing Applications”

AMOUNT OF GRANT for the Unit: 291.600 EUR/ 3 years

→ December 2010 to December 2014

PROJECT COORDINATOR at Institute of Photonics and Nanotechnology of the National Research Council of Italy (CNR-IFN) – Rome, Italy (“**FIRB Futuro in Ricerca**” Project)
Project title: “Electrodynamics of two-dimensional electron gases for the detection of terahertz radiation” funded by the Young Investigator Award of Italian Ministry of Research

AMOUNT OF GRANT: 366.000 EUR/ 4 years

→ July 2013 to February 2015

PRINCIPAL INVESTIGATOR in **Lawrence Berkeley National Laboratory** User Proposal, Molecular Foundry, Berkeley (CA), USA, involving 6 researchers. 3-month stay at LBNL in 2014.

→ October 2007 - November 2010

POST-DOCTORAL FELLOW at Institute of Photonics and Nanotechnology – CNR Rome, Italy
Development of antenna-coupled terahertz microelectronic devices

→ January 2006 - September 2007

POST-DOCTORAL FELLOW at the Synchrotron Radiation Facility BESSY II - Berlin, Germany
Infrared Spectroscopy: solid state physics, biology and development of advanced instrumentation

→ April 2005 - December 2005

COMMISSIONING of the infrared beamline at the Synchrotron ELETTRA – Trieste, Italy
Infrared Spectroscopy instrumentation development

→ October 2001- April 2005

DOCTORATE in Materials Science at University of Rome "Sapienza".
Infrared Spectroscopy of advanced solid state materials

→ February - July 2000

STAGE DE MAITRISE at Centre de Recherche sur les Tres Basses Temperatures - Grenoble, France. Transport measurements under high pressures.

→ September 1996 – September 2001. Final note: 110/110 cum laude
PHYSICS STUDIES at University of Rome "La Sapienza"

Publications

Main author and co-author of 93 publications on peer-reviewed international journals with assigned impact factor (ISI), among them: Physical Review Letters, Physical Review Applied, Physical Review B, Nano Letters, Nature Nanotechnology, Applied Physics Letters, Small, Nanoscale, Journal of Physical Chemistry C, ACS Photonics, Optics Express.

Main author and co-author of 62 International Conference Proceedings (IEE, EOS, SPIE).

Participation to International Conferences

Invited talks:

- European conference on Antennas and Propagation (EUCAP) Davos, Switzerland 2016
“*Coupling of terahertz radiation to two-dimensional plasmons in a resonant cavity*”
- New Synchrotron Radiation and Optical Techniques: from Single Molecules to Cells, ICTP, Trieste, Italy, December 2015
“*Tip-enhanced infrared nanospectroscopy of single and double biomolecular layer*”
- 4th Russia–Japan–USA Symposium on Fundamental and Applied Problems of Terahertz Devices & Technologies, Chernogolovka, Russia, June 2015.
“*Intrinsic hydrodynamic nonlinearity of a two-dimensional electron gas*”
- IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2012) Australia
“*Dark and Bright Surface Plasmon Resonances for Mid-Infrared Sensing*”
- 6es Journées TéraHertz, La Grande-Motte, France 2011
“*Quasi-optical terahertz detectors based on compound semiconductor heterostructures*”
- SPIE Photonics West “Quantum sensing nanophotonic devices” San Francisco, USA 2011
“*Monolithic Focal Plane Arrays for Terahertz Active Imaging*”
- IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz) Rome, Italy 2010
“*Perspectives in the Design of Focal Plane Arrays for Terahertz Active Spectroscopic Imaging*”
- International Conference on Frontiers in Diagnostic Technologies (ICFDT) Frascati 2009
“*Fourier-Transform Infrared Spectroscopic Ellipsometry for Material Identification*”
- International Workshop OpticSumRule07, Rome, Italy, 2007
“*The Restricted Optical Sum Rule in selected metals and in other strongly correlated systems*”
- Gordon Conference on Superconductivity, Les Diablerets (Switzerland) 2007
“*Infrared Investigation of the Superconducting State of p-doped Diamond and Related Materials*”

Selected Oral Contributions at international conferences:

SPIE Photonics West 2017, San Francisco, USA

Near Field Optics (NFO14), Hamamatsu, Japan 2016

European Conference on Antennas and Propagation (EUCAP), Davos, Switzerland 2016

IEEE Conf. on Infrared, Millimeter Terahertz Waves (IRMMW-THz) Hong Kong, China 2015

IEEE Conf. on Infrared, Millimeter Terahertz Waves (IRMMW-THz) Tucson, USA 2014

International Workshop “Graphene Nanophotonics”, Benasque, Spain 2012

SPIE Photonics West 2013, San Francisco, USA

IEEE Conf. on Infrared, Millimeter Terahertz Waves (IRMMW-THz) Mainz, Germany 2013

IEEE Conf. on Infrared, Millimeter Terahertz Waves (IRMMW-THz) Wollongong, Australia 2012

SPIE Photonics West 2011, San Francisco, USA

Int. Conf. on Superlattices, Nanostructures and Nanodevices (ICSNN), Dresden, Germany 2012

IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2007) Cardiff, UK 2007

American Physical Society March Meeting, Los Angeles, USA 2005

Selected Poster Presentations:

Near Field Optics (NFO13), Salt Lake City (USA) 2014

Near Field Optics (NFO12), San Sebastian (Spain) 2012

IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz), Busan, Korea, 2009

IEEE Conf. on Infrared, Millimeter Terahertz Waves (IRMMW-THz), Pasadena, USA, 2008

Low Energy Electrodynamics of Solids (LEES) 2006, Tallin, Estonia 2006.

Low Energy Electrodynamics of Solids (LEES) 2004, Kloster Banz, Germany, 2004.

Superconductivity and related materials (SCRM) 2003, Bled, Slovenia, 2003.

Conference Organization:

- Program Committee of IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2016), Copenhagen (DK), 25-30 September 2016.
- Program Committee of IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2014), Tucson (AZ) USA, 11-17 September 2014.
- Chairman of “PLASMONICA 2014” National Workshop on Plasmonics and Applications, Rome, Italy July 2014.
- Program Committee of IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2012), Wollongong, Australia, 23-28 September 2012.
- Local Organizing Committee of IEEE Conf. on Infrared, Millimeter and Terahertz Waves (IRMMW-THz 2010), Rome, 5-10 September 2010.
- Program Committee of SPIE NanoScience plus Engineering Conference on Terahertz Emitters, Receivers, and their Applications, San Diego, USA, August 2010.

Grants/Funds Awarded

- 2016-2019: Research Unit Coordinator of project “PRIN 2015” 2015FSHNCB by Italian Ministry of University and Research (MIUR), “Plasmon-enhanced vibrational circular dichroism”.
- 2015-2016: Research Unit Coordinator of project “THESMA: terahertz spectroscopy of manuscripts”
- 2014-2016: Research Unit Coordinator of ‘FP7 - Future Emerging Technology Project ‘Germanium mid-infrared plasmonics for sensing (GEMINI)’ grant n. 613055
- 2010-2014 Young Investigator Award for project “FIRB – Futuro in Ricerca RBFR08N9L9” Electrodynamics of Low Dimensional Electron Systems for the Detection of Terahertz Radiation” funded by Italian Ministry of Research (MIUR).
- 2017-2018: Coordinator of project “Mid Infrared Laser Sensor based on Bloch Surface Waves” Ateneo Ricerca 2017 – H2020

Journal Reviewer

Phys. Rev. B., Phys. Rev. Applied, Optics Express, Adv. Opt. Materials, ACS Photonics, Appl. Phys. Lett., J. Appl. Phys., Laser and Photonics Review, IEEE Trans. On Terahertz Sci. Technol.

Committees

- Since 2014: Scientific Selection Panel of the BESSY Synchrotron Radiation Facility, Helmholtz Zentrum Berlin, Germany.
- Since 2016: Elected to the Board of the Italian Society for Optics and Photonics (SIOF)