

Maria Chiara Paolozzi

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<https://sites.google.com/uniroma1.it/sapienza-terahertz/home> |

Address: Department of Physics, Sapienza University of Rome, Piazzale Aldo Moro 5, 00185, Rome, Italy (Work)

EDUCATION AND TRAINING

09/2010 – 07/2015 Rome, Italy

HIGH SCHOOL LEAVING QUALIFICATION IN CLASSICAL STUDIES Liceo Classico Plauto

Address Via Augusto Renzini, 70, 00128, Rome, Italy

09/2015 – 07/2019 Rome, Italy

ITALIAN DEGREE SIMILAR TO A BACHELOR'S DEGREE IN PHYSICS Sapienza University of Rome

Address Piazzale Aldo Moro, 5, 00185, Rome, Italy

09/2019 – 12/2021 Rome, Italy

ITALIAN DEGREE SIMILAR TO A MASTER'S DEGREE IN PHYSICS- CURRICULUM CONDENSED MATTER PHYSICS IN ENGLISH Sapienza University of Rome

Address Piazzale Aldo Moro, 5, 00185, Rome, Italy

21/01/2022 – 21/06/2022 Rome, Italy

POST-GRADUATE SCHOLARSHIP FOR RESEARCH ACTIVITY ON "ANALYSIS OF GASEOUS SUBSTANCES OF OCCUPATIONAL INTEREST VIA FTIR AND THZ SPECTROSCOPIES" Roma Tre University

Address Viale Guglielmo Marconi, 446, 00146, Rome, Italy

01/09/2022 – 31/10/2022 Rome, Italy

POST-GRADUATE SCHOLARSHIP FOR RESEARCH ACTIVITY ON "ANALYSIS OF GASEOUS SUBSTANCES OF OCCUPATIONAL INTEREST VIA FTIR AND THZ SPECTROSCOPIES" Roma Tre University

Address Viale Guglielmo Marconi, 446, 00146, Rome, Italy

01/11/2022 – CURRENT Rome, Italy

PHD IN MATHEMATICAL MODELS FOR ENGINEERING, ELECTROMAGNETISM AND NANOSCIENCES - CURRICULUM IN MATERIALS SCIENCE Sapienza University of Rome

Address Piazzale Aldo Moro 5, 00185, Rome, Italy

01/2024 – 05/2024 New Brunswick, United States

VISITING PHD STUDENT AT CENTER FOR QUANTUM MATERIALS SYNTHESIS Rutgers University

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Microsoft Office | Microsoft Word | Microsoft Excel | Microsoft Powerpoint | Matlab | C language | COMSOL
Multiphysics | RefFIT software | OPUS software | OriginLab

● PUBLICATIONS

2022

[High Sensitivity Monitoring of VOCs in Air through FTIR Spectroscopy using a Multipass Gas Cell Setup](#)

D'Arco et al., Sensors 2022; 22(15):5624

2022

[Terahertz Resonators Based on YBa₂Cu₃O₇ High-Tc Superconductor](#)

Macis et al., Appl. Sci. 2022; 12(20):10242.

2023

[Extraordinary Optical Transmittance Generation on Si₃N₄ Membranes](#)

Macis et al., Nanoscale, 2023,15, 16002-16009

2024

[Ultrafast hole relaxation between dual valence bands in methylammonium lead iodide](#)

Mou et al., J. Mater. Chem. A, 2024,12, 15463-15471

2024

[Terahertz and Infrared Plasmon Polaritons in PtTe₂ Type-II Dirac Topological Semimetal](#)

Macis et al., Adv. Mater. 2024, 2400554

● CO-AUTHOR PUBLICATIONS

21/02/2023

High-resolution quantitative monitoring of VOCs using MIR (medium infrared) spectroscopy coupled with a multipass cell, Della Ventura et al.

Co-author of the talk during the BRIC ID 7/2019 project: "An integrated array of fixed and mobile sensors for dynamical spatiotemporal mapping of volatile compounds in work environments" (Frascati), An integrated array of fixed and mobile sensors for dynamical spatio-temporal mapping of volatile compounds in work environments - (978-88-6683-166-2)

2024

High Sensitivity and Specificity Monitoring of Gaseous Vocs Coupling a Multipass Gas Cell Setup with Ftir Spectroscopy and Machine Learning, Mancini et al.

Co-author of the poster during XXVII CONGRESSO NAZIONALE SIBPA 2024 (Genova), Book of Abstract XXVII CONGRESSO NAZIONALE SIBPA 2024

2024

FT-IR spectroscopy coupled with Machine Learning for highly sensitive detection and discrimination of gaseous Volatile Organic Compounds, D'Arco et al.

Co-author of the talk during Rome Technopole Spoke 6 - International Young Researcher Workshop (Rome), Book of Abstract - Rome Technopole Spoke 6 - International Young Researcher Workshop

● CONFERENCES AND SEMINARS

20/04/2022 – 21/04/2022 INFN Laboratori Nazionali di Frascati, Frascati (RM), Via Enrico Fermi 54, 00044 Frascati, Italy

Workshop "Bioaerosols & Atmosphere Pollutants: Innovative solutions and sensor systems for air-quality monitoring"

Speaker of the talk "Detection of low VOCs concentration through infrared (IR) spectroscopy"

Link <https://sites.google.com/uniroma1.it/bioaerosols-atmosphere-poll/programme?authuser=1>

20/06/2022 – 23/06/2022 Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy

Conference "First Symposium for Young Chemists: Innovation and Sustainability"

Co-author of the talk "Detection of low Volatile Organic Compounds concentrations through IR spectroscopy"

Link <https://sync2022rome.org/>

17/11/2022 – 18/11/2022 Sapienza University of Rome, Piazzale Aldo Moro 5, 00185 Rome, Italy

Workshop "Tera-Days 2022: Spectroscopy, Imaging and Innovative Technologies for THz Radiation"

Speaker of the talk "Terahertz Resonators based on Y1Ba2Cu3O7 High-Tc Superconductor"

Link https://www.phys.uniroma1.it/fisica/sites/default/files/allegati_notizie/Booklet_Teradays.pdf

07/05/2023 – 14/05/2023 Capri, Italy

17th Capri Spring School on Transport in Nanostructures

Participation in the poster session with a poster about "Extraordinary Optical Transmittance Generation on Si₃N₄ Membranes"

25/06/2023 – 30/06/2023 Sankt Pölten, Austria

Conference "Low-Energy Electrodynamics in Solids (LEES)"

Speaker of the talk "Extraordinary Optical Transmittance Generation on Si₃N₄ Membranes"

EXPERIMENTAL ACTIVITY

2021 – CURRENT

Experimental activity at Sapienza Terahertz Lab, Sapienza University of Rome , Piazzale Aldo Moro 5, Building E. Fermi, 00185 Rome, Italy

Experience with broad-band linear optical spectroscopy (from Terahertz (THz) up to Ultraviolet (UV) spectral range) via both interferometric and dispersive techniques, combining the use of Vertex 70V Spectrometer, Bruker-Hyperion-2000 infrared Microscope, and Jasco V-770 Spectrophotometer. The broad-band spectral range allows to gain insight into both active phonon modes and electronic excitations. These techniques are suitable for investigating different kind of systems, such as gases and solids.

Artificially patterned materials (metamaterials) over the micrometric spatial scale are object of interest, since they allow playing with collective excitations (plasmon polaritons and phonon polaritons) in the Terahertz (THz) and Infrared (IR) spectral ranges to alter the optical and thermal properties of the corresponding bare unpatterned materials.

01/2024 – 05/2024

Experimental activity at Center for Quantum Materials Synthesis, Rutgers University, New Brunswick (New Jersey, USA)

Experience with topological insulator (Bi₂Se₃, Bi₂Te₃, (Bi_xSb_{1-x})₂Te₃) thin film deposition via Molecular Beam Epitaxy.