

Marta Marradi

PERSONAL INFORMATION

Address: via L. Manara 17
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RESEARCH EXPERIENCES

November 2021 - Ongoing: PhD student at the European Laboratory for Non-Linear Spectroscopy (LENS), Biophysics Biophotonics Lab

Research project under the supervision of Prof. Francesco Saverio Pavone focused on the development of hyperspectral and multispectral imaging systems for biomedical applications, with applications in the dermatological field for the study of chronic ulcers and melanomas.

May 2021 - June 2021: visiting researcher at University College London - Department of Medical Physics and Biomedical Engineering

Research experience in collaboration with Light4Tech and the Multi-Modal Spectroscopy Group of UCL for the study of the photobiomodulation effects on metabolism of optical tissue phantoms during irradiation with the EmoLED device.

December 2020 - November 2021:

one year grant at LENS, Biophysics Biophotonics Lab

Research project under the supervision of Prof. Francesco Saverio Pavone. Development of a hyperspectral imaging system based on Compressive Sensing and Spectral Unmixing techniques for biomedical applications, with a particular focus on brain imaging for *in-vivo* tumor identification and for a non-invasive and real time monitoring of cerebral activity and surgical-guidance.

Development of a multispectral imaging system for the general study of tissues and the monitoring of metabolism.

June 2020: internship at the Institute of Materials of the National Research Council (IOM - CNR), University of Perugia.

Project under the supervision of Dr. L. Comez. Experimental analysis of depolarized light scattering data of aqueous sugar solutions for pharmaceutical applications. Developed knowledge of Brillouin and depolarized light scattering.

November 2019 – July 2020: internship at the Laboratory of Molecular Spectroscopy, University of Perugia .

Postgraduate research project under the supervision of Prof. P. Sassi.

Research experience utilizing vibrational spectroscopic techniques for the analysis of murine myocardium tissues, developing relevant skills in the use of MicroRaman, MicroFTIR and FTIR imaging for the study of biological samples. Manipulation of spectroscopic data with multivariate statistical methods (PCA and Cluster Analysis).

Thesis - Spectroscopic markers of heart failure: a Raman and FTIR study.

March 2018 – July 2018: internship at the Laboratory of Nanotechnologies, University of Perugia.

Undergraduate research project under the supervision of Prof. L. Latterini.

Gained experience in the synthesis and characterization of inorganic composites, by means of UV-Vis spectroscopic techniques.

Thesis - Synthesis of ZnO based nanocomposites as antibacterial agents.

EDUCATION

October 2018 – July 2020: Master's degree in Chemical Sciences (110/110 cum laude),
Department of Chemistry, Biology and Biotechnology of University of Perugia.

October 2015 – July 2018: Bachelor's degree in Chemistry (106/110),
Department of Chemistry, Biology and Biotechnology of University of Perugia.

LANGUAGE SKILLS:

Italian: first language.

English: C1 level.

COMPUTER SKILLS

Good knowledge of Microsoft Office packages and of software/programming languages for data analysis (Excel, Origin, MATLAB, Python, R). Relevant skills in the use of software for spectral/hyperspectral data manipulation and analysis (OPUS and Cytospec).