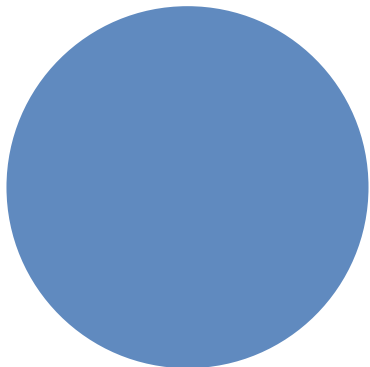


Maria Carla Ciacchella

Material scientist



Skills - Analytical techniques

BET SSA Specific Surface Area Analysis
DMA Dynamic Mechanical Analysis
DSC Differential Scanning Calorimetry
DSR Dynamic Shear Rheometry
EDX Energy Dispersive X-ray Spectroscopy
EMPA Electron Microprobe
FTIR-ATR Infrared Spectrophotometry
HPLC High-performance liquid chromatography
IC Isothermal Calorimetry
NMR Nuclear Magnetic Resonance
SEM Scanning Electron Microscopy
TGA Thermogravimetric Analysis
TOC Total Organic Content
VMP Voltammetry of Microparticles
XRD X-Ray Diffraction
μ-Raman Spectroscopy
3-PBT Three-Point Bending Testing

Education

PhD student in Electrical, Materials, Raw Materials and Nanotechnology Engineering

Sapienza University of Rome

2021-Present

Control of crystallization pressure in cementitious materials using a bio-based inhibitor

Techniques: SEM-EDX, TGA, XRD, FTIR-ATR, NMR

PhD guest

Eidgenössische Technische Hochschule Zürich (ETHZ)

2023-2024

Study of citric Acid's Influence on Tricalcium Aluminate Hydration and AFm phases formation

Techniques: HPLC, TOC, IC, DSR, BET SSA, 3-PBT

Excellence Program

Sapienza University of Rome

2019

Characterisation of the *Uomo a phi* rock painting, the first anthropomorphic figure by Homo Sapiens

Techniques: FTIR-ATR, μ-Raman

Master's Degree in LM-11

Sapienza University of Rome - 110/110 cum laude

2017-2019

Archaeometric study of Roman metal artefacts from the Spoletino cistern, Civitella d'Agliano (VT, Italy)

Techniques: FTIR-ATR, SEM-EDX, XRD, EMPA, μ-Raman,

Bachelor's Degree in L-43

Sapienza University of Rome - 110/110

2013-2017

Multi-analytical approach for the characterisation of mosaic materials from the Vatican Mosaic Studio

Techniques: SEM-EDX, VMP

Experience

Junior Grant-Holder - European Space Agency (ESA) founding

Sapienza University of Rome

2021

BLUE project aimed to investigate the potential of LIDAR - space, airborne and ground-based - in dealing with marine plastic litter. WP4 was dedicated to polymer characterization.

Techniques: FTIR-ATR, DMA, μ -Raman

Team member - European Space Agency (ESA) founding

Sapienza University of Rome

2020-2021

Pomerium project for the development of mathematical models describing the chemical behaviour of reinforced concrete and carbonate stone materials

Techniques: Mathematical modeling

Junior Grant-Holder - Getty Foundation founding

Sapienza University of Rome

2020

Project Keeping it Modern Grant Program 2018-2020 for the construction of the Conservation Management Plan of the School of Mathematics by Giò Ponti.

Techniques: DSC, TGA, FTIR-ATR, SEM-EDX

Publications

Raimondi, V., Bracciale, M. P., Ciacchella, M. C., Ciapponi, A., Corradi, P., de Vries, R., ... & Santarelli, M. L. (2024, July). The Blue Project: Investigating the Remote Sensing of Plastic Marine Litter by Means of Lidar Techniques. In IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium (pp. 5924-5926). IEEE.

Bretti, G., Ceseri, M., Natalini, R., Ciacchella, M. C., Santarelli, M. L., & Tiracorrendo, G. (2022). A forecasting model for the porosity variation during the carbonation process. GEM-International Journal on Geomathematics, 13(1), 13.

Santarelli, M. L., Giorgi, E., Ciacchella, M. C., & Pandolfi, L. (2022). Scientific investigation on construction materials. In The school of mathematics at Rome's University Campus-Conservation Management Plan (pp. 220-233). The Getty Foundation| Keeping It Modern Project.

Grants

2024

International mobility

Sapienza University of Rome

2023

International mobility

Sapienza University of Rome

2022

"Avvio alla ricerca"

Sapienza University of Rome