

riccardo.fantini1@unimore.it
Fixed-term researcher (RTD-a)
Department of Chemical and Geological Sciences
University of Modena and Reggio Emilia

Teaching activity: Mineralogy (1st year – BSc in Geological Sciences, L-34); Minerals for Environmental Sustainability and Teaching Strategies (MSc in Science Education and Communication, LM-60)

Education

and

Research

Dr. Riccardo Fantini earned his Bachelor's degree in Geological Sciences (2016) and his Master's degree in Geological Sciences and Technologies (2018) from the University of Modena and Reggio Emilia. During his two thesis projects, he focused on the crystal chemistry of natural and synthetic zeolites, particularly their structural modification and evolution at high temperatures, using Rietveld refinement of powder X-ray diffraction (XRPD) data. He then obtained his PhD in Models and Methods for Material and Environmental Sciences at the same university (2022), developing hybrid zeolite-organic UV-filter materials for cosmetic and industrial applications; this project culminated in the filing of an Italian and European patent (<https://www.knowledge-share.eu/it/brevetti/materiale-fotoassorbente-ad-ampio-spettro>).

Since 2022, his work has shifted toward the characterization of natural raw materials and ceramic products using quantitative Rietveld-RIR analysis of XRPD data. Dr. Fantini has served as a fixed-term researcher at the Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia since 2023. His academic activities are funded by Spoke 5 of the PNRR project "Ecosystem for Sustainable Transition in Emilia-Romagna" (ECOSISTER, MUR notice 3277/2021, funded by the European Union – NextGenerationEU) (<https://ecosister.it/>). Within this project, he is responsible for characterizing various waste streams (extractive waste, river silts, inertised glass wool) for reuse as secondary raw materials in ceramic bodies. Since December 2023, he has been a founding member of the university spin-off Mineralogical Solutions for Industry and Environment Srl (MINS4, <https://www.mins4.com/index.html>).

In 2023, Dr. Fantini received the Premio con.Sienze 2021-2022 and the Prof. Fiorenzo Mazzi Award from the Italian Crystallographic Association (AIC) for his doctoral thesis. He is a member of several national scientific associations (AIC, SIMP, AIZ, SILS, AMI) and currently serves as secretary of the informal Italian Young Crystallographers Group (GCI) of the AIC.

Recent Publications

- Conte, S., Fantini, R., Arletti, R., Molinari, C., Dondi, M., Zanelli, C., & Gualtieri, A. F. (2025). Sintering mechanisms, phase transformations and microstructure of porcelain stoneware containing thermally inertized man-made vitreous fibres. *Journal of the European Ceramic Society*, 45(7), 117230.
- Sisti, M., Guidetti, D., Altimari, F., Andreola, F., Barbieri, L., Lancellotti, I., ... & Gualtieri, A. F. (2025). Sustainable glazes for ceramic tiles: Exploiting inertized man-made vitreous fibres waste as a resource. *Ceramics International*, 51(4), 4195–4205.
- Nodari, L., Conte, S., Casini, L., Sisti, M., Fantini, R., Gualtieri, A. F., ... & Arletti, R. (2025). Role of iron-rich clays on sintering of porcelain stoneware tiles. *Journal of the European Ceramic Society*, 45(2), 116947.

More details on his scientific publications can be found at the following links:

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57189593429>

ORCID: <https://orcid.org/0000-0002-6114-7271>

Google Scholar: <https://scholar.google.com/citations?hl=it&user=A79FrEAAAAJ>