CURRICULUM VITAE ET STUDIORUM: *Irene Pini*



Personal data: Born in Modena (MO), 21/02/2001
Present Position: PhD Student
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EDUCATION

- **November 2026 (ongoing)** PhD in "Models and Methods for Material and Environmental Sciences" at the University of Modena and Reggio Emilia with a research project entitled "Structural Characterization of Defects in Zeolites for Tunable Hydrophobicity and VOC Adsorption".
- **December 2025** Degree in Geosciences, Georisks and Georesources (109/110) at the University of Modena and Reggio Emilia with a thesis entitled "Structural investigations into the flexibility of offretite: the role of cations in OSDA-free synthetic zeolites', under the supervision of Prof. Rossella Arletti.
- **October 2023** Degree in Geological Sciences (103/110) at the University of Modena and Reggio Emilia with a thesis entitled "Characterization of granite waste in a circular economy perspective", under the supervision of Prof. Rossella Arletti.

Attended SCHOOLS

- **High School Diploma (scientific track), Liceo Scientifico Wiligelmo, 5 Years**

MEMBERSHIPS AND APPOINTMENTS

- Member of the Doctorate School 'Models and Methods for Material and Environmental Sciences' of the University of Modena and Reggio Emilia (from the academic years 2026/2027 to 2028/2029)

ORAL PRESENTATIONS as presenting Author

I.cer.S – "Study Day on Ceramic Materials", 11/06/2026, Department of Engineering "Enzo Ferrari", Modena, Italy.
Oral presentation: "Valorization of raw materials from alternative geographical sources", UniMore.

BRIEF DESCRIPTION OF THE RESEARCH ACTIVITY

I am a geologist with a solid specialization in the characterization of inorganic materials, developed through the use of diffractometric techniques. Throughout my academic and research activities, I have developed specific expertise in studying the correlations between mineralogical composition and macroscopic properties, applying the Rietveld method for the quantitative analysis of complex mixtures. My background has allowed me to explore the dynamics of industrial manufacturing processes in depth, with a particular focus on the building materials sector and surface diagnostics. I work autonomously and in an organized manner, while orienting my work towards team collaboration.

OTHER INFORMATION

BIBLIOMETRIC INDICATORS AND SCIENTIFIC PRODUCTION

Total number of publications in scientific journals: 2

LIST OF SCIENTIFIC PUBLICATIONS ON INTERNATIONAL JOURNALS WITH IF.

1. "Impact of SAPO-18 Structural Dynamics on MTO Reaction Selectivity". 14-10-2026. Journal of Materials Chemistry A. Pace L., Wu J., Barrier N., Dalena F., Pini I., Arletti R., Honorato-Piva D., Dib E., Mintova S. ID: TA-ART-04-2026-003081. DOI: https://doi.org/10.1039/D6TA03081E
2. "Structural Insights into Rare Earth Element Exchange and Recovery in Faujasite-Type Zeolites: a combined XRPD and DFT investigation". 08-04-2026. Journal of Physical Chemistry Part C, Section C. Colombo F., Confalonieri G., Di Renzo F., Mineva T., Pini I., Malferrari D., Arletti R. ID: jp-2026-014617. DOI: https://doi.org/10.1021/acs.jpcc.6c01461

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