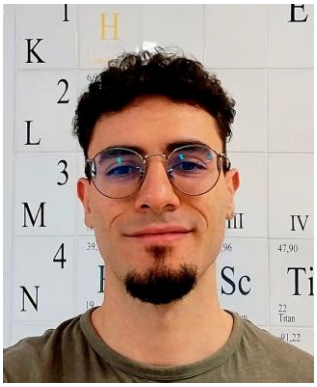
CURRICULUM VITAE ET STUDIORUM: *Mattia Manfredi*



Personal data: Born in Castelnovo ne' Monti (RE), date 10/07/1999
Present Position: PhD Student
Address: Department of Chemical and Geological Sciences, Via Campi 103, 41125, Modena. Phone: +39 0592058676
Email: mattia.manfredi@unimore.it
Web site: https://www.dscg.unimore.it/it
ORCID ID: https://orcid.org/0009-0006-1126-6949

EDUCATION

- **10/2024** Master's degree in Chemistry (summa cum laude) at the University of Modena and Reggio Emilia with a thesis entitled 'Studio della Reattività dei Mutanti H64A ed H64A/C46A-C55A della Neuroglobina umana con Solfuro', under the supervision of Prof. Marco Borsari and Gianantonio Battistuzzi.
- **12/2022** Master's degree in Chemistry (102/110) at the University of Modena and Reggio Emilia with a thesis entitled 'Ruolo del ponte disolfuro nell'interazione Neuroglobina umana-H_2S', under the supervision of Prof. Marco Borsari.

Attended SCHOOLS

- **2013-2018** High School Diploma (86/100) at the IIS Cattaneo dall'Aglio

MEMBERSHIPS AND APPOINTMENTS

- Member of the Division of Electrochemical Chemistry and thematic group of Chemistry for Accumulation and Electrochemical Conversion of Energy (ACEE) of the Italian Chemical Society.
- Member of the Doctorate School 'Models and Methods for Material and Environmental Sciences (M3ES)' of the University of Modena and Reggio Emilia (from the academic years 2026/2027 to in progress)

RESEARCH PROJECTS

- **03/2025 – 10/2026** Research Fellow at the University of Modena and Reggio Emilia (UNIMORE) as part of the HORIZON "SPRINT" Project: Sustainable European sodium-ion batteries for stationary applications featuring improved PRocesses, Inherently safe and Non-Toxic materials, HORIZON-CL5-2024-D2-01-02 (CUP E97H24001750006). The research activity is carried out in order to follow the title "Synthesis of cathodes with olivine-like structure for sodium-ion batteries", so optimizing the reactants and parameters of the synthesis process for the cathodic material. Associated to this activity the following skills were acquired:
  • Development of bibliographic research skills and critical thinking
  • Achievement of good knowledge in inorganic hydrothermal synthesis
  • Achievement of good knowledge in XRDP characterization and SEM imaging
  • Development of communicative skills through participation in conferences and meetings.
- **04/2024 – 10/2024** Research Internship at the University of Modena and Reggio Emilia (UNIMORE) Scientific Tutor: Marco Borsari. During the internship I worked on the kinetic

study of 2 mutants of the human protein Neuroglobin with the intent to observe the changes of the reactivity as a consequence of amino acids substitutions. Associated to this activity the following skills were acquired:
• Achievement of good knowledge in UV-Visible and Fluorescence spectrometry
• Achievement of good knowledge in Protein expression and Purification
• Ability to independently carry out scientific bibliographic research
• Ability to use MATLAB software for data analysis.

- **10/2022 – 12/2022** Research Internship at the University of Modena and Reggio Emilia (UNIMORE) Scientific Tutor: Marco Borsari. During the internship I worked on the mutant of the human protein Neuroglobin without sulphide bridge with the intent to evaluate the reactivity of the protein when this modification allows a change in the structure. Associated to this activity the following skills were acquired:
  • Ability to work independently with UV-Visible and Fluorescence spectrometry
  • Approaching to scientific bibliographic research.

ORAL PRESENTATIONS as presenting Author

- 'Kinetic evolution of the hydrothermal synthesis of $NaFePO_4$ and $NaMnPO_4$', Mattia Manfredi, Biagio Anderlini, Enzo Rotunno, Giovanni Bertoni, Sergio Marras, Mauro Gemmi, *Andrea Paolella,* 2nd Joint Conference ACee-GISEL 2026 29 april-04 may 2026, Cetraro (CS)

TEACHING ASSISTANCE

- Tutorship for the course: *General and Inorganic Chemistry* at the bachelor of science in CTF, University of Modena and Reggio Emilia (from the academic years 2023/2024 to 2023/2024)

BRIEF DESCRIPTION OF THE RESEARCH ACTIVITY

This PhD project is centred on the development and optimization of new current collectors for Li-metal solid state batteries. The research foresees initially the synthesis of different feasible materials that could act as current collectors, possibly with the main properties of being lithiophilic, chemically and physically stable, non-toxic and low-cost. Different techniques must be adopted to test these features, like XRD, SEM and TEM imaging, possibly NMR or IR spectroscopy, both before the material is tested inside a full coin cell and after the death of cell in order to evaluate the final conditions, and in case also the processes that occurs while the system is operating with *in-situ* measurements. Many data must be acquired and tests must be done to establish new materials that can boost the conversion to the more stable, safe and energy denser solid state configuration for Li-batteries.

Updated on 03/11/2026