



Laura De Bellis

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📍 Home: (Italy)

ABOUT ME

Inorganic Chemist with a Master's thesis in Radiochemistry and experience in Corrosion Science, currently a PhD student in Ceramic Materials.

WORK EXPERIENCE

PhD Student

Università di Parma [1 Nov 2023 – Current]

City: CNR-ISSMC di Faenza (RA)

Country: Italy

High-efficiency sintering of non-oxidic B₄C-based ceramics for applications in harsh environments.

Researcher

Laboratoire de conservation-restauration Arc'Antique - Grand Patrimoine de Loire-Atlantique [10 Jul 2023 – 31 Oct 2023]

City: Nantes

Country: France

Website: https://www.loire-atlantique.fr/44/culture-et-patrimoine/procraft-project-protection-and-conservation-of-heritage-aircraft-2020-2023/c_1358376

European Project "PROCRAFT" ("*PRO*tect*ion and Conservation of Heritage AirCRAFT*"):

- Study of the protectiveness of coatings on aluminum samples, both ancient and modern, for applications in the conservation and restoration of cultural heritage;
- Use of electrochemical gel cells for in situ Impedance Spectroscopy measurements;
- Oximetry Analysis;
- Drafting of reports and scientific articles.

University Research Assistant

University of Ferrara - Corrosion and Metallurgy Study Centre "Aldo Daccò" [1 Dec 2021 – 4 Jul 2023]

City: Ferrara

Country: Italy

Website: https://www.unife.it/centri/centro/corrosione-en/research-projects/the-project-procraft?set_language=en

European Project "PROCRAFT" ("*PRO*tect*ion and Conservation of Heritage AirCRAFT*"):

Development of protective coatings for aluminium alloys exposed outdoors.

- Theoretical insight into corrosion;
- Metallographic preparations;
- Development of Cutin (bio-based), Silane and Polylactic acid based coatings for applications on Aluminum alloys;
- Use of electrochemical measurement techniques for monitoring the corrosion process: measurements of potentiodynamic polarization and Electrochemical Impedance Spectroscopy (EIS);
- Morphological analysis by optical microscope, profilometer and Scanning Electron Microscope (SEM);
- Characterizations by Infrared Spectroscopy (FTIR) in specular reflectance, FTIR-ATR, and microanalysis by SEM;
- Metallographic etchings for the interpretation of the micro-structures of metal surfaces;
- Microencapsulation of Corrosion Inhibitors for incorporation into coatings;
- Coaching of trainee students.



Attending Graduate

University of Ferrara - Department of Chemical, Pharmaceutical and Agricultural Sciences [14 Oct 2021 – 1 Dec 2021]

City: Ferrara

Country: Italy

Website: <https://www.fe.infn.it/index.php/en/area-download/16-attivita-di-ricerca/512-metrics-eng>

"METRICS" Project ("*Multimodal pET/mRI Imaging with Cyclotron-produced 52/51Mn (β +emitter/paramagnetic) iSotopes*"):
Studies of production and purification of Manganese-52 with cyclotron and synthesis of paramagnetic manganese complexes for PET/MRI.

- Optimization of the separation of Manganese from a Chromium target, by means of ion exchange columns;
- Synthesis in controlled atmosphere and characterization of paramagnetic complexes of Manganese with dithiocarbamate ligands, such as DEDC, DBODC and DASD;
- Characterizations by means of techniques such as FTIR Spectroscopy, UV/Vis Spectroscopy, Mass Spectrometry (MS), Elemental Analysis, Cyclic Voltammetry and X-Ray Diffractometry (XRD).
- Encapsulation of the synthesized complexes within liposomal formulations;
- Study of the magnetic properties of the metal complexes, and of the liposomes containing the complexes, with the Evans Method and the "SQUID" magnetometer;
- Coaching of trainee students.

EDUCATION AND TRAINING

Master's Degree in Chemical Sciences - Chemistry, Materials and Energy

University of Ferrara [1 Oct 2018 – 9 Jun 2021]

City: Ferrara

Country: Italy

Website: <https://corsi.unife.it/lm-scienzachimiche>

Field(s) of study: Natural sciences, mathematics and statistics: *Chemistry*

Final grade: 110/110 with honors ("cum laude") – Level in EQF: EQF level 7

Type of credits: ECTS – Number of credits: 120

Thesis: "Synthesis of Manganese Complexes with Dithiocarbamates for Applications in Diagnostic Imaging"

Internship - Experimental Activity:

During the 6-month experimental activity, aimed at writing my dissertation in the field of **Radiochemistry** and **Inorganic Chemistry**, I had the opportunity to work on the "METRICS Project", funded by the National Institute of Nuclear Physics ("INFN-LNL"), which led me to carry out synthesis and characterization of **paramagnetic manganese complexes with dithiocarbamate ligands**, for applications in Multimodal PET/MRI Imaging of myocardial perfusion. These syntheses were performed both in presence of oxygen and in an inert atmosphere by Schlenk technique or in Glove Box. Specifically, I performed characterization of metal complexes using techniques such as: Infra-red Spectroscopy (**FT-IR**), Ultraviolet-visible Spectroscopy (**UV/Vis**), Mass Spectrometry (**MS**), **Elemental Analysis**, **Cyclic Voltammetry** and X-Ray Diffractometry (**XRD**).

Bachelor's Degree in Chemistry

University of Ferrara [30 Sep 2015 – 1 Oct 2018]

City: Ferrara

Country: Italy

Website: <https://corsi.unife.it/chimica>

Field(s) of study: Natural sciences, mathematics and statistics: *Chemistry*

Final grade: 105/110 – Level in EQF: EQF level 6

Type of credits: ECTS – Number of credits: 180

Thesis: "Advanced analytical techniques for the production of bioactive peptides"

Internship - Experimental Activity:

During my 200-hour internship in **Analytical Chemistry**, I managed to improve my expertise about high-performance chromatographic techniques (**HPLC**), for applications in chiral and biological field. Specifically, I have been working about **optimizing the purification process of a bioactive peptide**, produced by a pharmaceutical company.



Scientific High School - Cultural Heritage

Scientific High School "A. Roiti" [Aug 2010 – Jul 2015]

City: Ferrara

Country: Italy

Website: liceoroiti.edu.it/

Level in EQF: EQF level 4

TECHNICAL SKILLS

Synthesis Techniques

- Synthesis of metal complexes in air;
- Synthesis of metal complexes in an inert atmosphere using the Schlenk technique;
- Synthesis of metal complexes in an inert atmosphere using the Glove Box.

Characterization techniques

- FTIR spectroscopy;
- FTIR Spectroscopy in Specular Reflectance;
- FTIR-ATR spectroscopy;
- SEM scanning electron microscope;
- Optical microscope;
- Profilometer;
- UV-vis spectroscopy;
- NMR spectroscopy and Evans method;
- SQUID magnetometer;
- Cyclic voltammetry (CV);
- Mass spectrometry (MS);
- X-ray diffractometry (XRD);
- Elemental Analysis.

Analytical Techniques

- High performance liquid chromatography (HPLC);
- Ion exchange chromatography.

Electrochemical Techniques

- Potentiodynamic polarization;
- Electrochemical Impedance Spectroscopy (EIS).

LANGUAGE SKILLS

Mother tongue(s): **Italian**

Other language(s):

English

LISTENING B1 READING C1 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Portuguese

LISTENING B2 READING C1 WRITING B1

SPOKEN PRODUCTION B2 SPOKEN INTERACTION C1

Spanish

LISTENING B2 READING C1 WRITING B1

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

French

LISTENING A2 READING B1 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

ECDL / Problem solving / Notion / Video Editing/ Photo Editing / Origin / Microsoft Office / Spreadsheets / Databases



CERTIFICAZIONI

Italian Certificate of Qualification to practice the Profession of Chemist

[25 Nov 2021 – Current]

School of Electrochemical Techniques for Corrosion Studies "Cecilia Monticelli" (18 hours)

[17 Feb 2023 – Current]

ECDL-CORE

[Nov 2014 – Current]

DRIVING LICENCE

Driving Licence: B

VOLUNTEERING

Maintenance of Archaeological Sites

[La Fenice and Città Romana di Suasa, 2011 – 2013]

Stage of routine maintenance and monitoring of the conservation status of archaeological sites.

It took place in the archaeological area "La Fenice" (Senigallia) and inside the archaeological park "Città Romana di Suasa".

Link: <https://www.senigallianotizie.it/articoli/2012/11/2.pdf>

Tourist Guide - FAI

[Ferrara, 2012 – 2015]

Cultural guide during several events promoted by FAI in Ferrara's historic center.

Study of archival documents

[State Archives of Ferrara, 2012 – 2015]

Study of archival documents carried out at the State Archives of Ferrara for various projects.

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV and application for recruiting purposes.