

Melanie Rossotti

30 years old, PhD in Chemistry
melanie.rossotti@hotmail.com



Skills

- ❖ NMR spectroscopy (1D, 2D (HSQC ^1H - ^{15}N), 3D (HNCA, HNCOC, HNCACB, HNCOCACB, HNCACO, HNCO))
- ❖ Electron Paramagnetic Resonance spectroscopy (CW, PULSED EPR)
- ❖ Inorganic chemistry
- ❖ Protein production, isotope labelling
- ❖ Protein purification (affinity chromatography and size exclusion chromatography)
- ❖ Software: EasySpin in Matlab (EPR simulation); CCPNMR, NMRPipe and SPARKY (NMR analysis); AGUI/Gromacs (Modelling); Pymol; Office (Word, Excel, PowerPoint)
- ❖ Languages: English B2 level Spanish A1-A2 level

Job experiences

- ❖ **Post-doctoral – LCC lab, Alzheimer, amyloids and bioinorganic chemistry team, Toulouse** September 2025
 - + Spectroscopic and mechanistic study of LPMOs on various polysaccharides and their ability to resist auto-oxidation.
- ❖ **Post-doctoral – LCC lab, Alzheimer, amyloids and bioinorganic chemistry team, Toulouse** January-July 2025
 - + Measurement of CuI/CuII affinity for copper sites in CopI, a protein involved in Cu(I) periplasmic detoxication by fluorescence, UV-Vis and EPR spectroscopy.
- ❖ **Engineer in Biochemistry – CBMN lab, Yann Fichou Team, Pessac** January 2023-January 2024
 - Participation in setting up a laboratory (setting up biochemical equipment and experimental protocols), participation in student training.
 - Participation in different research projects:
 - + Study of the interaction between the tau protein involved in various neurodegenerative diseases, using EPR spectroscopy.
 - + Study of conformational changes in the transmembrane protein OPRm in the presence of the periplasmic protein MexA by EPR. With the MexB protein, they form together the tripartite efflux pump MexAB-OPRm of *Pseudomonas aeruginosa*.
 - + Analysis of radicals present in wooden wine barrels using advanced EPR spectroscopy.
- ❖ **PhD in Chemistry – BIP lab, Marseille** October 2019-December 2022
 - + Studies on a novel periplasmic protein involved in the copper resistance by magnetic resonance studies – Supervisor: Pierre Dorlet, BIP lab, Marseille
- ❖ **Master in Chemistry (speciality Life Sciences)** June 2019
 - **Internship** Mars-July 2019
 - + EPR study of the molybdenum active site of the Sulfite Dehydrogenase from *Thermus thermophilus* – Supervisor: Stéphane Grimaldi, BIP lab, Marseille
- **Bibliographic project** November-December 2019
 - + Reaction force: what have been done in biocatalysis – Supervisor: Stéphane Humbel, iSm2, Marseille

Scientific Congress and Scientific Schools

- ❖ French EPR Association in Paris – Oral presentation March 2024
- ❖ MéDynA in Arzon – *Poster presentation* October 2023
- ❖ IMMDays in Marseille - *Poster presentation* November 2021
- ❖ FrenchBIC Congress in Obernai - *Oral talk* October 2021
- ❖ InCell Workshop online - *Poster presentation* June 2021
- ❖ ESR spectroscopy group Congress online - *Poster presentation* April 2021
- ❖ FrenchBIC Congress online - *Poster presentation* October 2020
- ❖ Magnetic Resonance and Magnetic Phenomena in Chemical and Biological Physics School online - *Poster presentation* September 2020

Publications

- ❖ Structural evidence for a reaction intermediate mimic in the active site of a sulfite dehydrogenase. A. Djeghader, M. Rossotti, S. Abdulkarim, F. Biaso, G. Gerbaud, W. Nitschke, B. Schoepp-Cothenet, T. Soulimane, S. Grimaldi. *Chemical Communications*, **2020**. DOI: [10.1039/d0cc03634j](https://doi.org/10.1039/d0cc03634j) IF 3.8
- ❖ The green cupredoxin CopI is a multicopper protein able to oxidize Cu(II). M. Rossotti, D. Arceri, P. Mansuelle, O. Bornet, A. Durand, S. Ouchane, H. Launay, P. Dorlet. *Journal of Inorganic Biochemistry*, **2024**. DOI: [10.1016/j.jinorgbio.2024.112503](https://doi.org/10.1016/j.jinorgbio.2024.112503) IF 4.8
- ❖ Multi-scale techniques for the characterization of the macromolecular and volatile compound modifications during oak wood heat treatments. M. Courregelongue, M. Duttine, A. Grélard, M. Rossotti, G. Gerbaud, Y. Fichou, A. Pons. Submit *Food Chemistry* (IF 8.5) Dec 2024
- ❖ Structural determination of CopI from *R. gelatinosus*. M. Rossotti, O. Bornet, H. Launey, A. Valley P. Dorlet. In preparation
- ❖ Comparative study of blue and green cupredoxins sites by advanced EPR spectroscopy. M. Rossotti, G. Gerbaud, P. Dorlet. In preparation
- ❖ Enigmatic NO-synthases from diatoms. M. Rossotti, C. Puppo, B. Gontero-Meunier, P. Dorlet. In preparation

Teaching experiences

- ❖ **Practical** in Inorganic Chemistry (Complex synthesis, spectroscopic studies of metal complexes, titration of compounds in daily product) and in Electrochemistry (chemical battery/Half-cell, Cyclic voltammetry) - L2, L3 biochemistry, L3 chemistry, L2 biology
- ❖ **Tutorials** in Chemical equilibrium in solution (Acid/Base, Redox reaction, Solubility, Pourbaix diagram, Assays) and in Inorganic Chemistry (atomistic, coordination chemistry, complexation equilibrium) - L3 biochemistry, L2 chemistry

Thesis prize

- ❖ Thesis prize – Association française de RPE, Paris 18/03/2024