

# Jérémy DELAFOULHOUE

## (1<sup>st</sup> year PhD Student)

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### RESEARCH INTERESTS

Hybrid polyoxometalates for the photocatalytic reduction of CO<sub>2</sub>: from homogeneous to heterogeneous catalysis.

- Synthetic chemistry of polyoxometalates and metal-organic framework
- Photocatalysis and thermocatalysis
- Homogeneous and heterogeneous catalysts

### EDUCATIONAL BACKGROUND

2024-2027 PhD Student - College de France and Lavoisier Institute in Versailles

2022-2024 Master's degree in analytical chemistry – University of Nantes, France

2019-2020 Bachelor's degree in chemistry – University of Nantes, France

### PREVIOUS RESEARCH ACTIVITY

2022 – Molecular Modeling Study of Protactinium (V) Complexes

2023 – Study of photoluminescent hybrid materials

2024 – Simulation of luminescent properties of materials via DFT calculations

### SUMMARY

Jérémy began his higher education in chemistry at the University of Nantes, where he earned a bachelor's degree in chemistry before advancing to the A3M master's program (Analysis, Molecules, Materials, Medications). Throughout his studies, he explored various aspects of chemistry, specializing in materials chemistry. Alongside this focus, he developed a strong interest in theoretical chemistry, thereby building a versatile expertise in analytical chemistry and the design of new materials.

In October 2024, Jérémy will begin his doctoral research at the Laboratory of Chemistry of Biological Processes at the Collège de France, in collaboration with the Lavoisier Institute in Versailles. His research will focus on synthesizing materials for the photocatalytic reduction of CO<sub>2</sub>, a promising field for developing innovative solutions in carbon dioxide conversion and recycling.

## PUBLICATIONS

- Delafoulhouze, J.; Cordier, M.; Mevellec, J.-Y.; Massuyeau, F.; Hernandez, O.; Latouche, C.; Perruchas, S. Mechanoresponsive Luminescence Triggered by Phase Transition of a Supercooled Copper( i ) Complex. *Chem. Commun.* **2024**, 10.1039.D4CC00815D. <https://doi.org/10.1039/D4CC00815D>.
- Oher, H.; Delafoulhouze, J.; Renault, E.; Vallet, V.; Maurice, R. Coordination and Thermodynamic Properties of Aqueous Protactinium( v ) by First-Principle Calculations. *Phys. Chem. Chem. Phys.* **2023**, 25 (14), 10033–10041. <https://doi.org/10.1039/D3CP00323J>.