

Sophia Ben Ahmed (PhD Student)

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RESEARCH INTERESTS

Bioinspired and heterogenized molecular catalysts for CO₂ reduction

- Synthetic chemistry of organometallic complexes
- Electrocatalysis / Photocatalysis
- Homogeneous and heterogeneous catalysts
- Surface modification, electrochemical grafting
- Artificial enzymes

EDUCATIONAL BACKGROUND

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| 2023-2026 | PhD Student
Collège de France – Sorbonne University, Paris, France. |
| 2022-2023 | Master's Degree in organic chemistry
Universidad Autónoma de Madrid, Madrid, Spain. |
| 2019-2023 | Chemical engineering degree, major in Molecular and Supramolecular Chemistry
Ecole européenne de Chimie, Polymères et Matériaux (ECPM), Strasbourg, France. |

PREVIOUS RESEARCH ACTIVITY

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| Feb – July 2023 | Organic chemistry department, Universidad Autónoma de Madrid, Spain.
M2 Internship : <i>Synthesis of subporphyrazines as potential photosensitizers for photodynamic therapy and as fluorescence markers.</i> |
| 2021-2022 | AkzoNobel Coatings, Sassenheim, The Netherlands
Gap year internship : <i>Formulation of isocyanate-free waterborne performance coatings.</i> |
| Apr-Aug 2021 | Servier Research Institute of Medicinal Chemistry SRIMC, Budapest, Hungary.
M1 Internship : <i>Synthesis of new chiral nucleophilic heterocyclic carbenes (NHC) and their complexes for catalytic applications.</i> |

SUMMARY

Sophia began her higher education with two years of preparatory classes for engineering schools in the physics and chemistry section, followed by three years of engineering school at the European School of Chemistry, Polymers and Material science in Strasbourg. She specialized in molecular and supramolecular chemistry during her last year of school within a double degree program in the organic chemistry master's degree at the Universidad Autónoma of Madrid. Within the Laboratory of Chemistry of Biological Processes of the Collège de France, she began in October 2023 a PhD on the development of bioinspired and heterogenized molecular catalysts for the electro- or photo-reduction of carbon dioxide.

PUBLICATIONS

2025

- "Pyrene as a Redox Partner for CO₂ Electroreduction Catalyzed by a Zinc Cyclam–Pyrene Complex" S. Ben Ahmed, J. Sargueil, A. Solé-Daura, J. Forté, M. Walls, N. Menguy, P. Gotico, N. T. Huan, Y. Li, M. Fontecave, 2025, **ACS Catal.** 2025, 15, 18, 16439–16448.

2024

- "Tuning Fluorescence and Singlet Oxygen Quantum Yields of Subporphyrazines by Axial Functionalization." S. Ben Ahmed, G. Pérez de Bustos, J. Pina, T. Torres, M.S. Rodríguez-Morgade, **ChemPlusChem**, 2024, 89, 5, e202300779.

2022

- "Enantioselective Cyclopropanation Catalyzed by Gold(I)-Carbene Complexes", Z. Szabo, S. Ben Ahmed, Z. Nagy, A. Paczal, A. Kotschy, **Molecules**, 2022, 27 (18), 5805.