

Sarah Lamaison
(PhD candidate, 2nd year)

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Research interests :

- CO₂ reduction
- Electrochemistry
- Bioinspired catalysis
- Surface chemistry
- Solar-to-fuel

Summary

Seeking to address to the environmental challenges that will be presented in the 21st century, I chose to follow a career in the science behind renewable energy technology. My studies at Ecole Polytechnique (bachelor degree) provided me with an engineering background that I complemented with higher education in chemistry. For that purpose, I went on an MRes degree in the field of artificial photosynthesis in the Reisner group (Cambridge University, UK) where I focused on fundamental aspects of photosystem II.

During my PhD under the supervision of Pr. Fontecave and Dr. Mougél, I am willing to apply these skills in a more applied approach of photosynthesis. I am interested in developing fully-integrated electrocatalytic systems for CO₂ reduction using noble-metal-free heterogeneous catalysts. To understand the different determinants of in-flow catalysis performance, I am adopting a bottom-up approach. First, I am working on the engineering of robust high-surface area noble-metal-free catalysts, before integrating and optimizing them in a in-flow electrocatalytic device and, as a last step, coupling them with intermittent renewable sources for industrial proof-of-concept.

Publications

1 Kornienko, N. *et al.* Oxygenic Photoreactivity in Photosystem II Studied by Rotating Ring Disk Electrochemistry. LID - 10.1021/jacs.8b08784 [doi].