

Report on travel grant no. 3890 of the Max Buchner Research Foundation

„The effect of altering CO₂-conversion in iron-based direct CO₂-hydrogenation“

International Symposium Catalytic Chemistry of C1 Molecules

Lille, France

10-12 July 2024

Featherstone Nicholas, University of Cape Town

I had the privilege of being able to attend the International Symposium Catalytic Chemistry of C1 Molecules (C1Chem Conference) in Lille, France, between the 10th and 12th of July, 2024. At the conference I presented an oral on a subset of my PhD work titled “The effect of altering CO₂-conversion in iron-based direct CO₂-hydrogenation” and was able to engage in meaningful discussion with many international presenters on my talk.

The conference focused on catalysis as it pertains to working with C1 molecules, viz. CO₂, CO, CH₃OH, CH₄. The most discussed topic was the synthesis of methanol from either syngas or a CO₂-hydrogen mixture, though there was also a large amount of discussion around the Fischer-Tropsch synthesis as well as direct CO₂-hydrogenation to long chain hydrocarbons, which are the topics of most interest to my work, as well as several other discussions had, e.g. on photo and electro catalysis.

Major insights included the further understanding of the active iron phases as well as the perception of these phases, this relates to arguments which are often contradictory in literature. Further, less scientific, insights were around the experience of presenting to a wide range of academics, particularly across language barriers where it is clear that one must express oneself accurately and succinctly, much more so than when talking to other native speakers.