



Contribution ID : 48

Type : Poster

Transient Poisoning of Ni Single Atom Catalysts for Electrochemical CO₂ Reduction Reactions in the Presence of Impurities

To unlock the potential of electrochemical reduction of waste CO₂ emissions (CO₂RR) to facilitate decarbonisation efforts, we have developed a series of single-atom catalysts, incorporating inexpensive Ni. Our preliminary mechanistic investigations reveal that changing coordination environment can affect both catalytic activity and tolerance towards impurities in flue gas. In situ x-ray absorption spectroscopy (XAS) measurements is undertaken to (i) evaluate the structure and stability of these catalysts after CO₂RR, (ii) investigate the interaction of impurities (NO₂⁻, SCN⁻) with the active sites- key for industrial scalability and (iii) examine the nature of the redox processes that take place centred on the SACs in situ. The in situ XAS experiment reveal clear differences between substrates can be seen. Our finding contributes both to understanding the processes of CO₂ reduction and also impurity tolerance of the catalysts.

Level of Expertise

Student

Presenter Gender

Woman

Pronouns

She/Her

Do you intend to attend UM2022

In person - Melbourne

Students Only - if available would you be interested in student travel funding

No

Students Only – Do you wish to take part in the Student Poster Slam

Yes

Terms and conditions (Please confirm that you have read all the requirements and agree to the conditions)

Yes

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