

Direct Electrocatalytic CO2 Reduction

Expertise in the direct conversion of carbon dioxide into high value liquid products, which is important for combating climate changes and energy efficiency challenges

Competitive advantage

- The electrochemical CO2 reduction reaction (CO2RR) can be carried out at ambient conditions by applying an external bias
- Possibility to couple with electricity generated from renewable energy resources to close the carbon loop
- Simple, scalable and cost-effective catalysts for CO2RR in the gas phase to deliver liquid products

Impact

- Alleviate global warming by direct conversion of CO2 into high value liquid products
- Creation of a sustainable cycle of carbon-based fuel that will promote zero net CO2 emissions

Successful applications

• Mesoporous tin oxide (SnO2) electrocatalyst for large scale conversion of CO2 to formate with high selectivity and current density

Capabilities and facilities

- Access to expertise and state-of-the-art facilities for electrocatalyst fabrication, characterisation and testing of performance
- Expertise in the direct conversion of carbon dioxide into high value liquid products, which is important for combating climate changes and energy efficiency challenges.

More Information

Scientia Professor Rose Amal

School of Chemical Engineering

T: +61 (02) 9385 436 E: r.amal@unsw.edu.au

Dr Xunyu Lu

School of Chemical Engineering

T: +61 (0) 2 9385 4645 E: xunyu.lu@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2)93855008