



UNSW
SYDNEY

Dry CO₂ Reforming of Methane

Advanced expertise in the design, development and testing of cost-effective dry reforming catalysts for the conversion of common greenhouse gases (carbon dioxide and methane) into syngas.

Competitive advantage

- Highly active methane dry reforming catalyst based on cheap active metals (Ni and Co) which can be synthesised rapidly in a single step method, and is readily scalable
- High conversion of methane (up to 90%) is achievable at a relatively low operating temperature of 700°C
- Catalyst support (using SiO₂ and Al₂O₃) modification to enhance catalyst stability

Impact

- Alleviate global warming by conversion of CO₂ and methane into synthetic fuels
- Large scale production of active and stable catalyst

Successful applications

- The construction and commissioning of a Flame Spray Pyrolysis reactor to fabricate high surface area metal oxides and catalysts

Capabilities and facilities

- Access to expertise and state-of-the-art facilities for catalyst synthesis for large scale production
- Characterisation and testing of catalyst performance
- In-situ testing to understand conversion mechanisms
- Advanced expertise in the design, development and testing of cost-effective dry reforming catalysts for the conversion of common greenhouse gases (carbon dioxide and methane) into syngas.

More Information

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