



UNSW
SYDNEY



Solar Thermal CO₂ Methanation

A state-of-the-art integrated photothermal system for carbon dioxide conversion to methane and facilities for catalyst synthesis for large scale production.

Competitive advantage

- Integrated system incorporating photothermal technology to run the methanation reaction
- Uses solar heating as the main driving force to heat up the catalyst for CO₂ conversion
- A very high CO₂ conversion can be achieved using a Ni-based catalyst, with virtually 100% selectivity towards methane

Impact

- Alleviate global warming by recycling CO₂ into synthetic fuels
- Effective use of abundant and free energy from the sun

Successful outcomes

- The construction and commissioning of a Solar Thermal Plant for integrated CO₂ methanation with hydrogen production via catalysed water electrolysis

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

Our partners

- CSIRO Energy

More Information

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