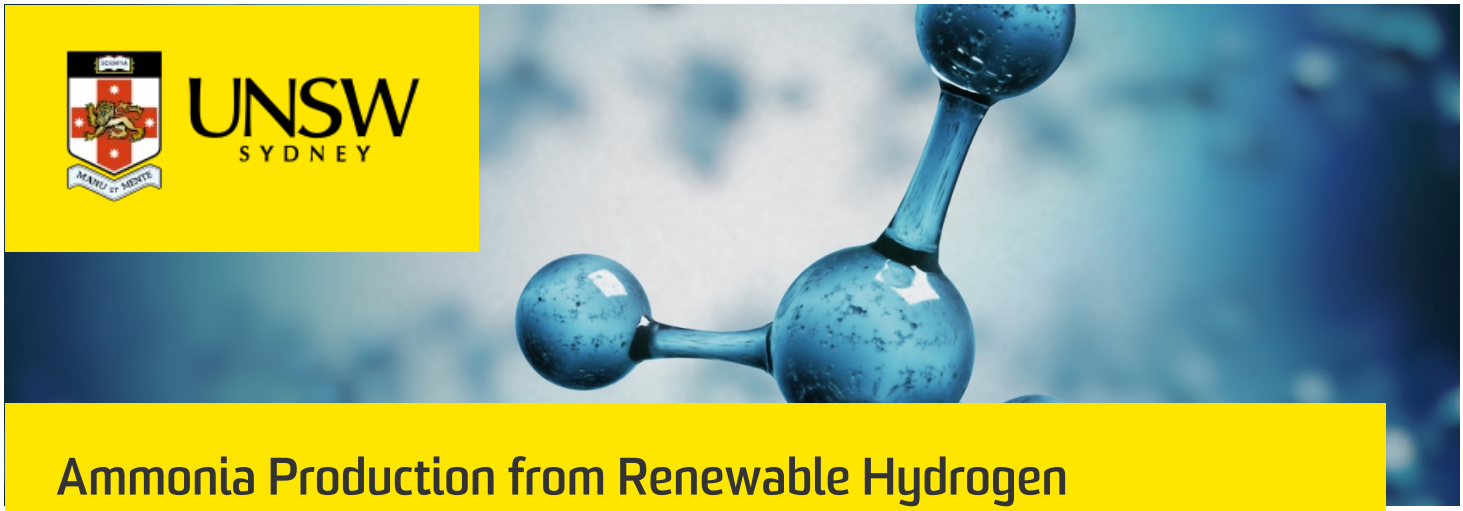

Ammonia Production from Renewable Hydrogen

Development of a high efficiency single-stage electrocatalytic ammonia synthesis reactor to produce ammonia at lower cost than via the traditional Haber-Bosch process.

Competitive advantage

- Ammonia is produced using PV electrolysed hydrogen from photovoltaic electrolysis and atmospheric nitrogen. A number of innovations are used to increase efficiency: nitrogen activity is increased by ionising the molecule; nitrogen selectivity over oxygen is achieved using tailored ionic liquids as electrolytes and the nitrogen reaction is catalysed using tailored electrodes.
- In-house expertise exists across all engineering requirements to solve problems and design and test a working prototype

Impact

- Cheaper and more energy efficient process for the production of ammonia

Successful applications

- Photovoltaic electrolysis of water to produce renewable hydrogen
- Demonstration of selective transport in ionic liquids

Capabilities and facilities

- Extensive lab facilities for PV electrolysis and characterisation
- Expertise and analysis facilities for studying the application of ionic liquids and the ability to assess the increased nitrogen activity

More Information

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