



UNSW
SYDNEY



Hydrogen Production from Water Electrolysis

Hydrogen is regarded as the fuel of the future because it possesses the highest mass-energy density of any fuel. Hydrogen production from electrochemical water electrolysis is considered as the simplest and cleanest approach to producing highly pure H₂.

Competitive advantage

- Setting records for high-efficiency and low-energy consumption in the production of hydrogen
- State-of-the-art free-standing, low cost transition-metal-based catalyst electrodes
- Innovative and environmentally friendly, highly-integrated water electrolyser design that is suitable for installation and reassembly
- Easy to integrate with renewable electricity from solar and wind

Impact

- High profile research and development that has received extensive attention in the international community
- The new generation electrodes greatly reduce water electrolysis energy consumption
- Accelerated commercialisation of hydrogen technologies

Successful applications

- Industrial application of electrodes for highly-efficient, large-scale hydrogen production
- Advanced flow water electrolyser cell, for the production of hydrogen

Capabilities and facilities

- Expertise in design and fabrication of binder-free 3D water electrolysis electrodes with desirable structures and functions
- In-operando spectroscopy techniques for mechanism understanding
- State-of-the-art laboratory and industrial facilities for electrode fabrication, characterisation and real-time durability testing in harsh conditions

Our partners

- Kohodo Hydrogen Energy Co. Ltd
- RayGen Resources Pty Ltd

More Information

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