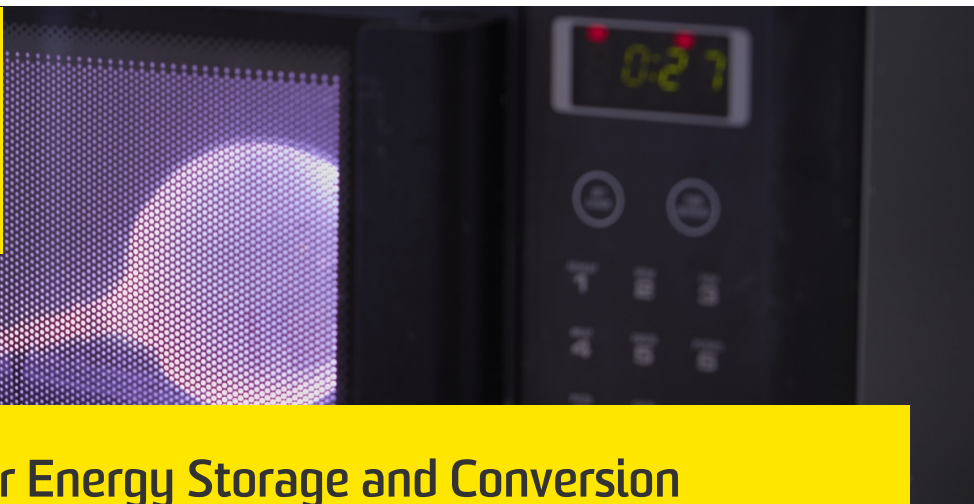




UNSW
SYDNEY



Carbon Materials for Energy Storage and Conversion

Carbon materials are excellent candidates for energy-related applications, from batteries and supercapacitors to fuel cells and electrocatalysis. A series of carbon nanostructures, such as graphene platelets and films, can be provided, along with innovative, scalable synthesis strategies, to enable the uptake of these materials in applications.

Competitive advantage

- Experience in producing state-of-the-art carbon nanostructures with tuneable properties
- Expertise in innovative strategies for carbon material synthesis and functionalisation
- Diverse platforms for integrating carbon materials into energy storage/conversion systems

Impact

- Novel carbon materials are key to high-performance energy storage and conversion.

Successful applications

- Rapid synthesis of a variety of graphene-based materials using microwave technology
- Growth of large-area, monolayer graphene using chemical vapour deposition strategy
- Highly conductive carbon foils made of stacked/overlapped graphene platelets
- Highly efficient carbon nanostructured electrocatalysts for water splitting
- High-performance carbon-based electrode materials for potassium ion batteries

Capabilities and facilities

- Chemical vapour deposition system for graphene growth
- Chemical laboratory equipment
- Electrochemical testing platform and battery analysis setup
- Access to advanced chemical and physical analytical techniques

More Information

Dr Xianjue (Sam) Chen School of Chemistry

T: +61 (0) 430 991 566
E: xianjue.chen@unsw.edu.au

Professor Chuan Zhao School of Chemistry

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

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2) 9385 5008