Graphene-Based Materials for Energy Storage and Conversion

Revolutionising the synthesis of graphene-based materials for use in a wide range of applications, including energy storage and conversion.

Competitive advantage

- A unique plasma-assisted method for the synthesis and functionalisation of vertical graphene
- Fabrication of various graphene-based hybrid structures
- Design, integration and evaluation of graphene-based energy storage devices
- Optimisation of graphene-based electrodes for catalysis and hydrogen generation

Impact

- Transforming the manufacturing sector through advanced and innovative materials technology
- Promoting renewable energy utilisation by developing efficient and high-performance energy devices

More Information

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Capabilities and facilities

- Facilities include:
  - State-of-the-art materials synthesis equipment (e.g. PECVD), characterisations (SEM, TEM, Raman), and measurements (potentiostat, battery analyser, electrolyser)
- Capabilities include:
  - The controlled synthesis and functionalisation of vertical graphene
  - Device fabrication
  - Materials characterisation
  - Electrochemical energy storage devices, such as batteries and supercapacitors
  - Catalysis and hydrogen generation

Our partners

- Partnerships with a range of organisations from local SMEs to multinational companies.