Electrode design for better batteries
Supervisor: Prof Nigel Brandon

Electrochemical energy storage using lithium batteries, flow batteries, and metal-air batteries are of increasing interest for both grid scale storage and electric and hybrid vehicles. PhD projects aiming at understanding, designing and developing electrodes and devices for these applications are available within a world class and interdisciplinary research group under the supervision of Prof Nigel Brandon. The aim of this work is to move to a more rationale design led approach to electrode development, and brings together work on 3D imaging using tomography techniques, the design of electrodes using computer modelling, novel fabrication of 3D structured electrodes, including the use of additive manufacturing routes, and electrochemical characterisation. Recent capital awards provide access to an outstanding suite of experimental facilities for the production, characterisation and fabrication of battery electrode structures and devices. Successful applicants will join an internationally recognised group with strong industry contacts and international reach which melds a variety of technical disciplines, including chemistry/electrochemistry, materials science, chemical engineering, mechanical engineering and electrical engineering.