

Hydrogen



If cars are to remain part of our daily lives we have to embrace more energy efficient and cleaner ways to power them. Hydrogen fuel cells present a solution. As a zero emission technology which emits only water from the exhaust pipe, and which has a greater energy density than batteries, hydrogen fuel cells have the potential to replace the internal combustion engine in many vehicles. At the University of Birmingham we are addressing this from all angles– from the low-carbon generation of hydrogen, to finding ways to store this highly reactive element, to optimising fuel cell technology itself.



All aspects of hydrogen research, from generation, fuel cells and storage to economics and policy, are covered at the University of Birmingham. We host the UK EPSRC [Doctoral Training Centre in Hydrogen Fuel Cells and their Applications \(http://www.birmingham.ac.uk/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx\)](http://www.birmingham.ac.uk/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx), which is to train fifty PhD students over nine years covering a range of hydrogen energy technologies. Our campus is home to the UK's first hydrogen fuelling station for our fleet of hydrogen fuel cell microcabs, and to the first hydrogen-powered canal boat. We are also part of the Coventry and Birmingham Low Emission Demonstration (CABLED) project, piloting low emission vehicles throughout the West Midlands.

We complement technology demonstration with an extensive programme of fundamental and applied research into bio-hydrogen production, solid-state hydrogen storage, hydrogen gas processing and different types of fuel cell materials, across the University. This work is funded from a range of sources, including the research councils, industry and the EU.

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