



FULLY FUNDED PhD Studentship

Starting Oct. 2016

Novel High Performance Materials for Robust Hydrogen Fuel Cells

“Two-dimensional layered materials for electrochemical energy conversion applications”

The Department of Engineering at Lancaster University is pleased to announce the availability of a fully funded PhD studentship in Chemical Engineering

MXenes, recently discovered two-dimensional materials, are transition metal carbides, nitrides and carbonitrides that result from the selective exfoliation of the A-group layer in precursor MAX phases. Their electrical, thermal and mechanical properties, along with their resilience under a number of conditions and the ability of tailor these materials for specific applications make them extremely interesting materials for applications in fuel cells. This project will focus on synthesising and tailoring MXenes for fuel cell applications, where, in addition to promising electrical and mechanical properties, their robustness, resistance to corrosion, processability and potential to scale up can make them attractive alternatives to current state of the art fuel cell materials. The potential impact of this research is high as this project will address life-time enhancement of fuel cells without significant cost increase which is the single biggest direct technical challenge currently inhibiting the wide spread adoption of fuel cell technologies.

The project will make use of the extensive fuel cell and materials characterization facility available at Lancaster and will benefit from established fuel cell industrial links.

To be eligible for the studentship, the funding requirements are that you must either be a U.K. citizen or a European Union national.

Entry requirements: First class or good 2:1 in Chemical Engineering, Chemistry, Materials Science or related discipline.

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<http://www.engineering.lancs.ac.uk/>