Applications are invited for a three-year PhD studentship on electrocatalysis for the synthesis of renewable fuels and chemicals, available at Imperial College London starting in October 2019.

Electrochemical energy conversion technologies, such as fuel cells and electrolysers, are progressively entering our daily lives. They also have the potential to revolutionize the currently petroleum-based production of commodity chemicals, by converting CO$_2$ and bio-based molecules to value-added compounds while making direct use of renewable electricity. At fundamental level, in order to enable these technologies, it is essential to discover efficient and stable electrocatalysts capable to accelerate target reactions.

The proposed PhD project is focused on the synthesis and characterization of advanced electrocatalysts for the electrocatalytic reduction of CO$_2$ to fuels and the electrochemical conversion of bio-derived molecules. Within this area of research, you will master advanced wet chemistry and physical deposition methods for the preparation of model and nanostructured catalysts. Advanced characterization methods (i.e., TEM, SEM, XPS, etc.) will be applied for the physico-chemical characterization of the electrodes. An array of advanced electrochemical methods coupled with analytical quantification techniques will be employed to assess the selectivity, activity and stability of the catalysts.

You will be part of the “Nanotechnology and Nanoscale Characterization” theme at the department of Materials. Collaborations with UK and European research groups will be possible within the frame of the studentship. Informal enquires about the position or the research project are encouraged and can be made directly to Dr. Stefano Mezzavilla (s.mezzavilla@imperial.ac.uk).

Motivated prospective candidates with a Master’s degree or First degree or (equivalent) with First Class or Upper Second in Chemistry, Material Science, Chemical Engineering or in related disciplines are invited to apply. Prior experience in the synthesis and characterization of nanomaterials and in electrochemistry are highly valued, albeit not required. Knowledge in organic chemistry is a plus.

This PhD studentship is funded by the UK’s Engineering and Physical Sciences Research Council and is open to UK home students or European students who have spent the last three years in the UK. The studentship will cover tuition fees plus the standard maintenance stipend of £16,777 (this year’s rate) per annum.

Please send a full CV, including your marks, a motivation letter highlighting your background/research interests and the contact details of at least one referee to Dr. Stefano Mezzavilla (s.mezzavilla@imperial.ac.uk). Applicants will be required to complete an electronic application form.

For questions regarding the admissions process, please contact Materials student office (materialsstudentoffice@imperial.ac.uk). Formal applications can be completed online: http://www3.imperial.ac.uk/materials/research/phdopportunities while information about the Department can be found at http://www3.imperial.ac.uk/materials.

Applications will be considered until a suitable candidate has been found.
Committed to equality and valuing diversity, we are also an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and are working in partnership with GIRES to promote respect for trans people.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/