An early stage researcher (ESR) position is available at the University of Cambridge and Delft IMP as part of the Marie Curie European Industrial Doctorate project "REWATERGY"

PhD student (3 years) – ***ESR 2 – Large-scale production of materials for the production of hydrogen from wastewater.***

REWATERGY is a Marie Curie European Industrial Doctorate (EID) training network funded by the European Commission within the Horizon 2020 research and innovation action. The REWATERGY programme aims to develop an academic-industrial partnership within the water-energy nexus.
Three research objectives set the foundation of this ambitious programme,

- enhance the energy recovery from wastewater streams inspired by the *circular economy* concept,
- improve the *energy efficiency* of water disinfection and removal of contaminants of emerging concern
- increase the *resilience* of distributed household safe drinking water systems addressing potential health and safety challenges.

The REWATERGY network comprises 3 universities (Rey Juan Carlos University (Spain), University of Cambridge (UK) and Ulster University (UK)) and 3 companies (Deft IMP (Netherlands), ProPhotonix (Ireland) and FCC Aqualia (Spain)). The consortium is are recruiting 8 highly motivated PhD candidates, providing inter-sectoral training, which will qualify them for a career in academia and/or industry. Each ESR will crucially gain inter-sectoral experience in an individual ESR research project, with the main working period (36 months) of the ESR equally split into an academic and an industrial part of 18 months in at least 2 different countries.

This PhD student position will be hosted and hired by:

- University of Cambridge: Location, Cambridge, UK. Duration: 18 months (October 2019 – March 2021)
- Delft IMP: Location: Delft, Netherlands. Duration: 18 months (April 2021 – September 2022)

Description of the work:

This PhD student position offers an exciting and innovative research project for the development of catalytic materials at large-scale for the generation of hydrogen from waste water components (e.g. ammonia and urea). The Catalysis and Process integration group, led by Dr Laura Torrente at the University of Cambridge has expertise in the development of heterogeneous catalysts for the production of hydrogen from ammonia. Building on this background, the first part of the project will focus on the development of catalysts for hydrogen production from aqueous ammonia and urea solutions. In the second part of the project, a manufacturing route for the production and scale up of the selected catalyst will be investigated at Delft IMP using the coating technology atomic layer deposition (ALD). Delft IMP, founded in 2014, is a start-up company from Delft University of Technology that focuses on the development and commercialization of new methods to produce coated particles using atomic layer deposition.

Requirements:

- Candidate should be in the first four years of his/her research career. He/she should not have a doctoral degree and fulfil the eligibility criteria and mobility rule (see below)

- A First Class Master degree in chemical engineering, process technology or a relevant field from a UK institution or the equivalent from a non-UK university (If you hold a non-UK degree, please see: http://www.graduate.study.cam.ac.uk/international-students/international-qualifications to determine if your final grade/mark will satisfy that requirement.)
- Excellent proficiency in chemical reaction engineering, heterogeneous catalysis and good experimental skills including experience in laboratory research. Previous experience working with continuous reactors, synthesis of heterogeneous reactors and fluid dynamics will be advantageous.
- Numerical and problem solving skills and ability to work both as part of the team, and independently, coupled with excellent communication, organisational and problem solving skills.
- Fluency in oral and written English.
- Availability to travel for training events and research secondments.
- The standing needed to meet the graduate admissions entrance requirements of the University of Cambridge, as the successful candidate will be expected to formally apply for admission: http://www.admin.cam.ac.uk/students/gradadmissions/prospec/studying/entryreq/

ELIGIBILITY CRITERIA: Recruiting is in accordance with the European rules for Marie Curie Initial Training Networks. Early-stage researchers (ESR) can be of any nationality. They must be, at the time of recruitment by the host organisation, in the first four years (full-time equivalent) of their research careers and have not yet been awarded a doctoral degree. The research career starts after the degree that enables a student to proceed with a PhD (usually, the Master degree).

MOBILITY RULE: At the time of the recruitment by the first host institution, the ESRs must not have resided or carried out their main activity (work, studies, etc.) in the country of their first host institution for more than 12 months in the 3 years immediately before the recruitment date. Short stays such as holidays and/or compulsory national service are not taken into account.

Benefits

- 3 years full time employment contract (starting 1st October 2019) corresponding to two 18 months contracts, one with each host.
- Attractive salary according to the living standards of the hosting country. Netherlands gross salary 3385 €/month including mobility allowance, taxation of about 27% depending on individual and familiar circumstances. UK gross salary 3440 €/month from which the employee has to pay National Insurance, taxes and pension contributions. Taxes bands depend on personal circumstances (more info: https://www.gov.uk/income-tax-rates). Candidates should get information about the tax requirements associated to each country and their personal circumstances.
- Work in a dynamic and international research group of Catalysis and Process Integration - see details on the website: https://www.ceb.cam.ac.uk/research/groups/process-integration-group
- Be part of a small and enthusiastic international team, where own initiatives and ideas are encouraged, as well of be part of a growing start-up environment. See details on the website: http://delft-imp.nl
- Possibility to collaborate with international research groups engaged in the project.

How to apply

Step 1: Send your complete application before 26th April (first phase) or 31th May (second phase) filling this form:

http://rewatergy.eu/esr-application-form/

A single pdf file needs to be submitted including:

- a cover letter, stating your research motivation and interests; including relevant background (max 1 A4 page)
- at least 2 referees (including name, position and email address) (max 1 A4 page)
- CV, including academic background, previous industrial and/or research experience (max 2 A4 pages).
- Degree transcripts.
- English language qualification certificates

Step 2: After interview and only if your application is accepted, you will need to formally apply to the Department of Chemical Engineering and Biotechnology at the University of Cambridge. You can find all information and requirements in this link:

https://www.graduate.study.cam.ac.uk/courses/directory/egcepdcng/apply

Contact:

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www.rewatergy.eu