**ESR 6: Porous Bio-inspired Polymer Electrode Functionalized with Enzymes for Catalytic Carbon Dioxide Reduction.**

**Objectives**
The candidate will work on the preparation of relevant conductive electrodes for “encapsulation” (non-covalent binding) and “grafting” (covalent binding) of CO₂ reduction catalysts. Enzymes have been chosen as the platform for the CO₂ reduction. Reductively rugged polymers will be synthesized and functionalized to bind the catalyst. Through the application of the Life Cycle Assessment (LCA) and Life Cycle Cost analysis (LCC) methodologies, student will analyze the benefits and main hotspots since both sustainable dimensions.

**Host Institutions and Secondments**
This project will be developed under a co-tutelle agreement and the applicant will obtain a double degree from Université de Pau et des Pays de l’Adour (Pau, France) and Université of Namur (Belgium). The chosen candidate will complete a PhD with an inter-disciplinary supervisory team and benefit from a world-class training programme, including placements with 4 international partners.

- 15 months in Namur University (Namur, Belgium)
- 3 months at Collège de France (Paris, France)
- 12 months at the University de Pau et des Pays de l’Adour (Pau, France)
- 2 months at the additional Uppsala University (Uppsala, Sweden)
- 3 months in Eurecat technology center (Mataro, Spain).
- Note that the thesis will end with 1 to 12 additional months in Namur.

PhD supervisors are Pr. Bao-Lian Su (Namur University, [www.unamur.be](http://www.unamur.be)) and Pr. Laurent Billon (UPPA, [www.univpau.fr](http://www.univpau.fr)). The expected time for a PhD degree in Belgium is between 3 and 4 years, and the last 1 to 12 months of the position will be in Namur, under the employment rules for Belgium doctoral students.

**Qualifications**
- Master’s degree in chemistry, with skills in inorganic and polymer chemistry as well as characterization techniques for inorganic/organic/polymeric materials
- Knowledge on biochemistry will be a plus
- Strong interest in interdisciplinary scientific work
- Strong motivation to pursue a PhD degree and to develop a cross-disciplinary cutting-edge project.
- Excellent communication skills and willingness to work in collaborative projects with multiple partners
- Very good English language skills
- Self-motivation and the ability to achieve goals independently as well as to contribute effectively to the team.
- Willing to travel within the EU and spend extended periods of time in various EU countries.
- Familiarity with environmental, health and safety (EHS) requirements.

**Recruitment conditions**
The student will be employed by the University de Pau et des Pays de l’Adour (France), Université of Namur (Belgium) and the technical centre EURECAT (Spain) on a standard MSCA salary base (including mobility and family allowance) during 3 years and 1 to 12 additional months under Belgian standards.

Successful applicants will be required to start latest 1 October 2018 for a period of 4 years maximum. Candidates are required to meet the Marie Sklodowska-Curie Early Stage Researcher eligibility criteria ([https://ec.europa.eu/research/mariecurieactions/sites/mariecurie2/files/msca-itn-fellows-note_en_0.pdf](https://ec.europa.eu/research/mariecurieactions/sites/mariecurie2/files/msca-itn-fellows-note_en_0.pdf)). At the time of the appointment candidates must have had less than four years full-time equivalent research experience.
and must not have already obtained a PhD. Additionally, they must not have resided or carried out their main activity (work, studies, etc.) in Belgium for more than 12 months in the last 3 years immediately prior to the starting date.

Any appointment will be conditional upon satisfactory references, the fulfilment of any conditions specified in the offer of a place on a PhD programme, and confirmation of the right to work in the EU and ability to secure a valid visa.

Selections will be made regardless of gender, nationality, religion, ethnicity and cultural background, but aiming for a good balance among the group.

Selection process
A first selection process will consist of a screening of the curriculum vitae, academic course transcripts, a motivation letter and 2 recommendation letters. The short-listed candidates will be interviewed by teleconference/skype by the selection committee. The selected candidate will be approved by the selection committee.

Apply for this job
Send your application (CV, motivation letter, 2 recommendation letters together with academic course transcripts, all documents should be in English) to the following address:

esr6-application@escaled-project.eu

Please put in the object of your email that you are applying for the ESR6 position within the eSCALEd project.
Please check that you meet all eligibility criteria

The closing date for receipt of applications is 20 may 2018, 18:00 Bruxelles Time.