

PRESELECTION FOR RESEARCH CONTRACT ON LCA AND BIOREFINERIES

Position's characteristics

A research contract of 6 months is offered by the Group of Environmental Biotechnology (Biogroup) of the University of Santiago de Compostela to conduct research in areas that combine chemical process modeling with life cycle assessment to improve time-to-market, process efficiency and sustainability performance. The contract starting date is flexible and foreseen to take place in February 2024. It is possible and desirable to extend this contract to 3 years for the completion of a PhD thesis.

Context description

The research activities are carried out in Biogroup in the framework of a Spanish National project (Transition to sustainable agrifood sector bundling life cycle assessment and ecosystem services approaches -ALISE) that addresses the cause-effect chain perspective of the life cycle assessment (LCA) approach and develops a decision support methodology to integrate the cascading assessment of ecosystem services (ES) as a crucial tool for environmental sustainability, with the aim of increasing knowledge on environmental sustainability and the effects on ES supply.

Biogroup is one of the most important research groups in Environmental Engineering at European level. As part of a world-renowned research group, the researcher will work at state-of-the-art facilities. Biogroup staff is composed by 14 full/assoc. professors, 3 technicians, 2 administrative support staff, 7 postdocs and ~20 PhD students providing a stimulating and multidisciplinary work environment to conduct the research. The candidate will have the opportunity to collaborate in other research activities and EU Horizon Europe projects related to circular bioeconomy.

Main tasks may include:

- Development of rigorous modeling of pilot and large-scale integrated biorefinery systems through process simulation
- Evaluation and efficient optimization of biorefinery supply chains
- Integration of Circular Bioeconomy for resource recovery from agrifood systems
- Prospective and dynamic life-cycle assessment forecasting the long-term future of emerging technologies and considering temporal variations through the integration of production forecasts, scientific and technical developments, EU plans, ...
- Development of an integrated methodology to assess the effects from environmental impacts from LCA on ES provisioning
- Development of sustainability transition assessment rules for sustainable products regulation

Research lines

LCC, LCA, S-LCA & Environmental Footprint¹; Circular Economy: Ecodesign, Ecoefficiency, Responsible Consumption²

Requirements

- Candidates must have a master level degree in Chemical Engineering, Environmental Engineering, Biotechnology or similar.
- Experience in engineering modelling and the use of scientific software (e.g. Python, Superpro Designer, Aspen HYSYS etc.) will be appreciated.
- Experience in Life-Cycle based methods and the use of related software (such as SimaPro, GaBi, Umberto, OpenLCA) will be appreciated.
- Good level of English and ability to travel abroad to attend project meetings or conferences
- Interest in developing a research career leading to a doctoral thesis will be an asset.

Preselection process

Applications and information requests must be sent to sara.gonzalez@usc.es (including in the subject: "LCA and BIOREFINERIES position") before January 15th, 2024, at 12:00 (CET). The position will be filled as soon as a suitable candidate is found, therefore interested candidates are advised not to delay their application. Applications must contain the following documents in a single pdf file:

- Motivation letter (not more than 1 page), indicating the contact details of the candidate and a brief description of the reasons why they should be selected.
- Curriculum Vitae

The preselection process involves the following steps:

- 1) Evaluation of applications (motivation letter and CV)

The goal of this evaluation is to assess the adequacy of applicant's profile to the requirements of the call.

- 2) Personal interview

Top three candidates after CV screening will be invited for a formal application to the research position, including a personal interview.

¹ <https://biogroup.usc.es/programme0301>

² <https://biogroup.usc.es/?q=node/3596>