

Position Offered: PREDOCTORAL RESEARCHER

Project: *Manufacturing of optofluidic microreactors by 3D printing for water decontamination*

Technological and scientific fields: 3D printing and additive manufacturing.

Location: Oviedo, Asturias, Instituto de Ciencia y Tecnología del Carbono (INCAR), www.incar.csic.es

Research Group/PI: Functional Porous Materials Group, Gregorio Marbán Calzón.

PROJECT SUMMARY

The project focuses on the design, manufacture and use of optofluidic catalytic microreactors active in the photodegradation of organic compounds in wastewater. To do this, computer-aided design and 3D printing will be used with the aim of manufacturing microreactors with unique shapes, whose flow dynamics will be analyzed using the most advanced digital applications. Our group has proven experience and all the necessary means to test these reactors in the photodegradation of different aqueous contaminants.

PROFESSIONAL PROFILE

Minimum requirements:

- Degree in Physics, Chemistry, Mathematics, Chemical Engineering, Industrial Engineering or equivalent.
- Advanced level on reading and writing English.
- Solid knowledge bases on computer programming.
- User-level learning ability of CAD geometric design programming applications (e.g. Autocad) and fluid dynamic analysis (e.g. Ansys Fluent).

Merits to be considered:

- Official Master's Degree on a topic close to that studied in the project. Mastery of tools for computer-aided geometric design (e.g. Autocad) and fluid dynamic analysis (e.g. Ansys Fluent). Solid mathematical management. Knowledge of Chemical Engineering. Multidisciplinary work capacity.

WHAT IS OFFERED

Completion of a PhD Thesis in a multidisciplinary work that ranges from computer-aided design of microreactors to their use at lab scale in photocatalytic reactions of environmental interest. Teamwork, in a relaxed but efficient environment, in which the hired person will not only learn the techniques that will lead to the fulfilment of the proposed objectives, but will also actively participate in the generation of ideas, which will be discussed at the same level as those of the responsible researchers. The selected person will acquire exhaustive knowledge about the use of the extensive equipment in our laboratory, as well as all the characterization techniques available at the institute. The doctoral student will see his or her curricular background increased during the four years of the contract by completing Official Master's Degrees or specialization courses in accordance with the project, participating as an author in articles published in international journals with a high impact index, attending national conferences and filing potential patents, etc. The hired person will also benefit from training stays (maximum of three months each) in leading technological (Idonial) or scientific centers (University of Oviedo).

Contract conditions:

Predocctoral Researcher contract of 4 years' duration. Gross annual salary of 23,871.33 €.

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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