

Postdoc Position on Mixing and Reactions in Underground Hydrogen Storage

The role

We are offering a postdoctoral researcher position on underground hydrogen storage in the framework of the project Green-HUGS (TED2021-129991B-C33). Green-HUGS is a collaborative project between the University of Coruña, the Technical University of Madrid and IDAEA-CSIC. The general objective of Green-HUGS is to advance the knowledge base for the efficient and safe geological storage of hydrogen and thus contribute to a green-hydrogen economy and the transition to a carbon-neutral society.

The selected candidate will work on the numerical simulation of multiphase flow and component transport in heterogeneous porous formations. Specifically, the candidate will investigate the upscaling of dispersion, mixing and reaction processes at the interface between hydrogen and the reservoir fluid or cushion gas. The postdoctoral researcher will be based in Barcelona at the Institute of Environmental Assessment and Water Research (IDAEA-CSIC).

What do we look for?

- **Qualifications**
Ph.D. degree in physics, hydrogeology, civil engineering, engineering sciences, or a related discipline.
- **Professional experience**
Experience in multiphase flow simulation in porous media.
- **Competences**
 - High level of English
 - Knowledge and skills in quantitative research.
 - Skills in programming and scientific software.
 - Interest in collaborative multi-disciplinary research.
 - Knowledge of the simulation platforms COMSOL Multiphysics and/or OpenFOAM.

Working conditions

- **Contract duration: Until end of the project (max. 24 months).**
- Estimated annual gross salary: The successful candidate will receive salary in accordance with the CSIC level Doctor FC3 (around 38,000€/year). The exact salary will be confirmed upon appointment.
- Target start date: **1st December 2022**

The group

The [Groundwater and Hydrogeochemistry](#) group studies the hydraulic, chemical, thermal and mechanical processes that take place in porous media from pore to regional scale. The group employs mathematical and numerical approaches as well as laboratory and field scale experiments and sampling methods (using hydraulic, hydro-geochemical and environmental isotope data sampled directly or through specifically designed tests).

The institute

The **Institute of Environmental Assessment and Water Research (IDAEA)** is an environmental science institute devoted to the study of the human footprint on the biosphere. Much of the research work at this institute is centred on two of the great environmental challenges of our time: cleanliness and availability of water and quality of air.

Founded in 2008 as a member of the **Spanish National Research Council (CSIC)**, the Institute brings together a wide range of expertise in environmental science. It is organized under two Departments (Environmental Chemistry and Geosciences), established with a strong record of publication in top scientific journals, leading international projects, membership on international committees, and adopting a high-profile contribution to the identification and remediation of environmental problems.

IDAEA has demonstrated strengths in the analysis of organic pollutants and their impact on ecosystems, the study and management of water resources, the development of multivariate resolution algorithms in chemometrics, and in the study of inhalable particulate matter and toxic gases.

IDAEA has been recently awarded with the distinctive **Centre of Excellence “Severo Ochoa”** (2020-2023), distinction that indicates the high-quality scientific leadership and global impact of the work developed at the centre.

We offer a diverse and inclusive environment where no discrimination against disability, gender, nationality, religion or sexual orientation will occur during the selection process.

How to apply?

Those interested may email their **CV**, a **motivation letter** and **contact information of two academic reference** to **Dr Marco Dentz** at marco.dentz@csic.es adding **Postdoc Green-HUGS** to the email subject.

Deadline: Open until filled.