

Search for a Post-Doc Fellow to Work on Hydrogen Mobility and Energy Storage

The broad discipline of the candidate – Chemistry/Chemical Engineering/Electrochemistry

The specializations and competencies required – Electrochemical Energy Storage (EES)

Job Description – We aim to develop safe, cost-effective and durable electrochemical energy storage systems, e.g., Liquid or Redox Flow Batteries (RFBs). Technically, the focus would be on the design and development of electrode materials as well as high energy density electrolytes to be applied in EES.

Job responsibility –

- Design, synthesis, and characterization of electrode materials.
- Design, synthesis, and characterization of electrolytes.
- Electrochemical testing of electrodes and electrolytes.
- Mentorship of Ph.D., M.Sc., and/or B.Sc. students.
- Data analyses, interpretation and reporting.

Desired Requirements:

Research background:

- Electrochemistry
- Electrocatalysis/electrocatalysts: preparation of electrode materials, microstructural and electrochemical characterization, study of electrode/electrolyte interfaces, kinetics etc.
- Electrolytes (preparation and characterization of electrolytes (organic metal complexes, ionic liquids, etc.).
- Electrochemical testing: operation and electrochemical testing of electrodes and electrolytes in EES.

In addition: excellent publication record in the field of required expertise, ability to develop and implement new research ideas, and to design and perform advanced experiments, excellent speaking, writing and communication skills.

E-mail enquiries prior to making an application are welcome, in which case contact Professor Zain H. Yamani (zhyamani@kfupm.edu.sa).

Search for a post-doc to work on oxy-hydrogen combustion systems with carbon capture

Job Description

The KFUPM Interdisciplinary Research Center for Hydrogen and Energy Storage (IRC-HES) is seeking an outstanding and motivated post-doc to support R&D activities in the area of oxy-hydrogen combustion systems with carbon capture. The post-doc will perform research on combustion systems, advancing the state of knowledge, publishing high-impact papers, and driving innovation. The role involves developing technologies of oxy-hydrogen combustion systems with carbon capture that enable cost-effective zero-emission operation. The aim is to develop and test, experimentally and numerically, novel/efficient burner designs for clean combustion in gas turbines with carbon capture, as well as hydrogen mobility in internal combustion engines. Knowledge of experimental test-rig and burner design as well as CFD codes for combustion modeling is essential. Hands-on experience in hydrogen mobility and oxy-combustion is expected.

In addition: excellent publication record in the field; ability to develop and implement new research ideas; ability to design and perform advanced experiments; excellent speaking, writing, and communication skills.

PhD in Mechanical Engineering from top-ranked universities in the QS ranking is particularly welcome.

E-mail inquiries prior to applying are welcome, in which case, please contact Professor Zain H. Yamani (zhyamani@kfupm.edu.sa).