Job Opening Announcement: Research Associate

Position: Research Associate for a Research Project

Institution: Kuwait University

Duration: 3 years

Salary: 700 KD per month

Project Title: Prospects of Turquoise Hydrogen Production in Kuwait via Pyrolytic Gas Cracking: Catalyst Selection and Development in a Life Cycle Assessment

Application Deadline: January 2025

Job Summary

As a Research Associate, his/her work will directly responsible for the proposed project work and support the project team. In this position, he/she will be part of a multi-disciplinary and multi-institution teams using catalyst synthesis and testing prototype catalysts for methane pyrolysis. He/She will be responsible for generating complementary techniques to understand catalytic sites for the production of hydrogen.

Major Duties/Responsibilities:

- Conduct high-quality research in heterogeneous catalyst synthesis specific to methane pyrolysis and H_2 production. Assist in the development and preparation of proposals. Assist in developing an experimental procedure to study support and supported catalyst phases on the activity, selectivity, and stability of the catalysts for methane pyrolysis.

- Assist in reporting, writing and publish scientific results in peer-reviewed journals.

Tasks:

Preparation of Support and Catalysts: The scope of the project encompasses methane catalytic pyrolysis (MCP) at a laboratory scale, which includes catalysts preparation, characterization, and their screening. The work plan for these tasks will cover the following:

- Preparation of supports (Carbon, Mg-spinel, and perovskite) with desired textural and thermal properties.
- Preparation of catalyst with metals (Ni, Fe, and Cu) having high active sites dispersion.

Characterization of fresh (oxide) and reduced catalysts

Characterization of Prototype Support, Supported Catalyst, and Spent Catalysts: The supported catalysts will be characterized for their properties at different stages of the project. The support and catalyst required different types of characterization techniques:

- Characterization of Lab Prepared Support.
- Characterization of Oxide, Reduced, and Spent Catalysts.

Required Qualifications and Skills

The candidate sought after should be of a higher degree in the discipline of [Chemistry/Organic-inorganic/applied chemical technology/Engineering sciences – chemical, mechanical, materials, or of an equivalent experiences and degree to accommodate the tasks related to the project].

The candidate should have knowledge of hydrogen technology and carbon capture, for the project is related to thermal cracking of various gas streams over a number of catalysts. The candidate is expected to aid in formulating catalysts in laboratory set-ups constituting various supports [$MgAl_2O_4$, $LaNiO_3$ or $LaNiO_3$ (Me=Ni,Co,Fe), Fe_2O_3-Al_2O_3, Activated Carbon] and help characterisation of Textural and Bulk and surface properties. Knowledge in life cycle assessment is desired, and report writing is excepted.

- A Ph.D. degree in a relevant field, such as [Chemistry/Organic-inorganic/applied chemical technology/Engineering sciences – chemical, mechanical, materials, or of an equivalent experiences and degree to accommodate the tasks related to the project].
- Proven experience in laboratory management and performing specific research techniques relevant to the project.
- Strong research background and a track record of publications is highly desirable.

- Excellent communication skills in English, both written and verbal.

- Proficiency in scientific software and data analysis tools.

  To Apply

  Interested applicants who meet the above requirements are invited to submit their application via email to mohammad.alshawaf@ku.edu.kw or through the Kuwait University online recruitment portal.

Please include the following in your application:

1. A detailed Curriculum Vitae (CV).

2. A cover letter outlining your interest and suitability for the position.

3. Copies of your academic degrees and transcripts.

4. Contact information for at least two professional references.