



Advertisement of Postdoctoral position at CARBON Lab, Department of Chemical Engineering, Indian Institute of Technology, Hyderabad

Creative & Advanced Research Based On Nanomaterials (CARBON) Laboratory, Department of Chemical Engg. at IIT Hyderabad is looking for a young, creative and enthusiastic candidate to join as a Postdoctoral fellow. CARBON Laboratory is actively engaged in the development of nanomaterials (polymeric, carbon and inorganic) in the form of thin films, nanoparticles, nanofibers or in hierarchical/multi-scale for the application of energy (as electrode materials for batteries and supercapacitors), environment (adsorbents for water and air purification, waste management), healthcare (feminine hygiene, drug delivery, tissue scaffolds) and sensors.

Project Description

This project aims to develop next generation energy storage system (e.g. battery) especially suitable for the extreme environment. Work involves performing significant number of experiments including synthesis of nanomaterials, structural and electrochemical characterization, and data analysis. A thorough understanding of materials properties using DFT calculations will be needed to rationally design and choose new materials including electrodes, electrolytes and salts for best electrochemical performance.

Essential Qualifications

- PhD in Chemical Engg./Materials Sci. Engg./Chemistry/Physics in the field of energy storage system preferably in the area of Metal-CO₂ /Metal-air/Metal-ion and Metal-Sulfur batteries.
- The candidates should have a good practical experience and theoretical understanding in electrochemistry/electrochemical system such as electrode functions, electrolyte (salt, solvent and additive) development and design of electrocatalyst.
- The candidates should also have experience in multiscale simulation and modeling of battery system using multiple packages such as VASP/GAUSSIAN/Materials Studio/LAMMPS/COMSOL Multiphysics, etc.

Desirable Experience:

- Hands on synthesis techniques for energy materials such as Sol- gel, Hydrothermal, high- temperature solid state method, etc.
- Hands on experience with Characterization facilities like FESEM, TEM, XRD, Raman spectroscopy, FTIR, XPS, etc.
- Hands on experience in electrochemical testing such as charge-discharge testing, Cyclic Voltammetry, EIS analysis, assembly of electrochemical system in Glove box, post analysis of electrochemical system, etc.
- Knowledge and hands on experience in Quantum Chemistry and/or Quantum Physics for multiscale modelling in electrochemical system.

Monthly stipend: As per the revised DST norms.

Initial appointment will be for 1 year and may be extended for another year subjected to the performance.

Age: Preferably less than 35 years as on 1 January 2021.

How to Apply:

Eligible candidates may send their latest CV with copy of their two most important publications to carbonlabiith@gmail.com on or before 15 December, 2020. Candidates also need to arrange at least two recommendation letters (out of two, one from PhD advisor) in support of their application.

PhD candidates who submitted their thesis and waiting for their viva-voce examination are also eligible to apply.

Mode of Selection:

Candidates based on the essential qualification and desirable experience will be shortlisted for an interview which will be tentatively conducted in the last week of December. Candidates will be required to join latest by January 10, 2021.

For any query, write to: carbonlabiith@gmail.com.