POSITION: Membrane Application Engineer

Title: Membrane Application Project Leader

Location: Chicago, IL

Compensation: Competitive salary, health insurance, stock options, and other benefits

Reports to: Director of Applications

Send Resumes to: Careers@numat-tech.com

The Company

NuMat Technologies ("NuMat") is a start-up company innovating at the intersection of high-performance computing, chemistry and advanced manufacturing. NuMat is a recognized pioneer in the field of metal-organic frameworks (MOFs) — an emerging class of nanoporous materials which can be programmed to uniquely interact with target molecules at the atomic level. NuMat's expertise lies in the design and integration of MOFs into next-generation storage, separation and purification systems. In doing so, NuMat enables previously unachievable form factors, performance and cost-advantaged production economics in the electronics, life-sciences, filtration and energy sectors.

Since our founding in 2013, we've been recognized by Google as a "Solve for X" innovator, won the Kleiner Perkins Caufield & Byers "Green Tech Innovation" prize and have been backed by leading venture and strategic investors such as OS Fund and Patagonia.

Position Overview

As a membrane project leader and senior application engineer, you will work with the business development, R&D and engineering teams to design, operate, and evaluate hollow fiber membrane systems for gas or liquid separation applications using custom built and standard testing apparatus. You will be interacting with business leaders to provide application data supporting value propositions to customers. Working at a vibrant small business, you will be exposed to and integrated into the entire technical team (R&D, engineering, manufacturing, and operations). Most projects will involve the frequent interaction with business development leaders in dealing with real-life hollow fiber membrane applications by building experimental systems, setting up analytical equipment, running experiments, and interpreting the results into actionable outcomes in the gas/liquid separation applications.

Responsibilities

- Work with the business leaders to deliver the requested results in the hollow fiber membrane applications related to gas separation and liquid separation on a timely manner.
- Lead a technical team and set timeline and milestones to achieve technical objectives.
- Build and test research-scale equipment (hardware, control systems, electronics) to validate the performance of advanced nanoporous materials (i.e. separation, adsorption, and filtration systems, on both liquid and gas phases).
- Generate application related data in a presentable manner that respond to customer needs and provide innovative solutions to common problems.
- Identify and develop the testing methods and contribute to the experimental and system designs.
- Execute experiments, analyze the data, and reach to actionable conclusions meaningful to internal and external customers.
- In an environment of continuous improvement, identify and champion enhancements to processes and systems throughout the RD&E organization.

Individual Characteristics

You have at least 5 years of experience in fabrication, characterization, and integration of hollow fiber membrane systems for industrial gas or liquid separation applications.

- Hands-on experience of building and operating a lab or pilot-scale hollow fiber module system related to thin-film composites or mixed-matrix membranes for gas/liquid separation.
- Prior experience in dealing with pharmaceutical nanofiltration or industrial gas separation applications is a big plus.
- Demonstrated experience in design, construction, and operation of gas permeation evaluation equipment or other related R&D focused manifolds, including the operation of analytical equipment such as a mass spectrometer or gas chromatograph.
- Demonstrated experience in characterizing gas or liquid transport properties in nanoporous materials such as zeolites/MOFs carbons and(or) polymeric films.
- Demonstrated ability in characterizing nanoporous materials or membranes with analytical techniques such as, but not limited to, adsorption measurements, powder X-ray diffraction, SEM, and NMR.
- Experience with synthesizing nanoporous materials and understanding of interfacial chemistry and physics on substrates is a plus.
- Ability to collaborate with computationally focused research engineers to troubleshoot experimental designs and explain scientific observations.
- Adhere to and support safety protocols around high-pressure systems and flammable/toxic gases and liquids.