Process Engineer (FEED Study) — Nanomaterials Pilot & Scale-Up (Hydrogen Storage)

Company: Hydrogen In Motion (H2M)
Role Type: Full-time onsite
Location: Burnaby
Reports to: Engineering Lead / Director of Engineering
Salary Range: $90,000 - $125,000 annually, plus benefits.

About H2M

H2M is advancing nano-based materials and systems for next-generation hydrogen storage. The company operates a pilot-scale nanomaterials synthesis facility and is actively progressing toward commercial-scale deployment through a structured engineering execution pathway encompassing Front-End Engineering Design (FEED), detailed engineering, procurement, construction, and commissioning.

The Role

We are seeking a Process Engineer with FEED study experience to support process engineering deliverables for our pilot plant and scale-up program. In this role, you will develop process design packages, validate pilot data, and translate laboratory and pilot-scale learnings into robust, scale-ready designs. You will work closely with safety, mechanical, electrical and controls, procurement, and operations teams to ensure designs are practical, safe, and execution ready.

Key Responsibilities

FEED / Process Design

- Develop and maintain PFDs, P&IDs, stream tables, heat & material balances, and process descriptions.
- Own process engineering deliverables for FEED packages including design basis, equipment sizing, line lists, utility summaries, and operating philosophy.
- Perform process simulations and engineering calculations (mass/energy, pressure drop, pump sizing, heat exchanger duty, mixing/transfer, venting basis, etc.).
- Translate pilot data into scalable design assumptions; define scale-up risks and validation plans.

Equipment & Systems

- Prepare equipment datasheets, Request for Quotation (RFQ) technical scopes, and support vendor evaluations/selection.

- Support design of solids handling, filtration/washing, drying, reactor systems, chemical storage/transfer, and off-gas/effluent treatment.
- Partner with controls/automation to define control philosophy, major loops, interlocks, alarms, and operating limits.

Process Safety & Quality

- Participate in and close actions from Process Hazard Analyses (PHA), Hazard and Operability Studies (HAZOP), and Layers of Protection Analyses (LOPA), and support Pre-Startup Safety Review (PSSR) readiness for commissioning.
- Ensure design supports safe handling of acids/oxidants/solvents (as applicable), hazardous area classification considerations, and environmental compliance requirements.
- Support development of SOPs, commissioning procedures, and operating envelopes.

Cross-Functional Execution

- Collaborate with R&D, pilot operations, QA/QC, and manufacturing to ensure design is practical and operable.
- Support project planning and reporting: scope, schedule, cost inputs, and risk register updates.

Required Qualifications

- Bachelor's degree in Chemical Engineering (or closely related discipline).
- 3–8+ years of process engineering experience in industrial plants and/or pilot-scale scale-up. Registered as a Professional Engineer (P.Eng) with authority to practice engineering in British Columbia is mandatory.
- Demonstrated experience delivering FEED study outputs (AACE-style work packages preferred).
- Strong capability in PFD/P&ID development, heat and material balances (HMBs), equipment sizing, and utility estimation.
- Familiarity with HAZOP/PHA processes and closing safety actions.
- Comfortable working hands-on in a pilot environment (field walkdowns, troubleshooting, commissioning support).

- Strong documentation and communication skills; able to produce clear, auditable engineering deliverables.
- Occasional domestic and international travel may be required.
- Professional proficiency in English (written and spoken) is required.
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Strong Assets

- Experience in specialty chemicals, materials processing, slurry/solids systems, filtration, drying, or corrosion-heavy processes.
- Exposure to batch or semi-batch reactor systems, hazardous chemical handling, and waste/off-gas treatment.
- Experience with Canadian codes and regulatory expectations, including pressure equipment and CRN workflows, fire and building codes, and coordination with AHJs (e.g., CSA, ASME, NFPA/NBCC, provincial safety authorities), as relevant to chemical pilot plants and scale-up facilities.
- Familiarity with tools such as Aspen (Plus/HYSYS), AutoCAD/AutoCAD P&ID, Excel-based models, or similar.

What Success Looks Like (First 90 Days)

- Own updates to the process design basis and deliverables (PFDs/P&IDs/HMBs/stream tables).
- Produce a clean set of equipment datasheets and RFQ scopes for priority packages.
- Help close key HAZOP actions and align control philosophy with operations.
- Identify top scale-up risks and define practical pilot validation steps.