

About us

The success of our upstream process solutions and sustainable technologies depends on the talent, curiosity and drive of our people. They bring solutions every day to optimize our strategy in extractive metallurgy, chemical reagents, and more sustainable technologies.

In Geomega we research, develop and deliver differentiated, high-impact, game-changing technologies and products, foundations of our competitive advantage. Rather than long-term fundamental research and knowledge building, we focus on shorter-horizon commercial applications. Our time is split between office and lab work, collaborating with research teams to refine concepts and fuel innovation.

We invite you to bring your skills and talents to Geomega to help create sustainable solutions that improve quality of life and meet society's evolving needs. Learn more about us and how we can work together.

Position: Process Modeling Engineer

Location: Boucherville, QC

Type: Full-time

Job Description:

By joining Geomega, you will be an integral technical contributor to process development and scale-up programs applying process modeling, process flowsheeting, heat and mass balance, OPEX and CAPEX estimation, LCA analysis, process optimization and data reconciliation skill sets to tackle process development, scale-up, and unit design problems critical to developing new process technologies from concept ideas to commercial scale deployment.

Key Responsibilities:

- Develop and apply fit for purpose phenomenological models to guide screening, development and design of new process technologies with applications across Geomega's developments
- Apply aptitude for and strong background in fundamentals-based modeling, particularly in the areas of complex reaction kinetics, thermodynamics, and a broad interest applying these skills to process development
- Work collaboratively within cross-discipline teams with expertise in experimentation (active method development, lab-scale experiments, and pilot plant studies), process engineering and equipment design, utilizing models to support the design of experiments, validation, and scale-up activities
- Convert concepts block diagrams, initial flowsheets and details flowsheets to Aspen process simulation. Produce tables for heat and mass balance summary.
- Develop and maintain advance new modeling capabilities for phenomenological and dynamic models application, including thermodynamic equilibrium predictions of multi-phase systems,

process modeling and simulation, data reconciliation and validation of mass balance calculations produced during lab-scale experiment or pilot testwork

- Develop, document and maintain techno-economic analysis and life cycle assessment of the innovative processes from concept development to commercialization
- Data validation and reconciliation for data produces in the lab and pilot on daily basis
- Serve as a subject matter expert and technical reference in topics related to kinetic modeling, thermodynamic equilibrium modeling, phenomenological modeling, H&M balance, LCA analysis and dispersion modeling.

Skills and Qualifications

- Bachelor, master's or PhD in chemical engineering, mechanical engineering, metallurgy or related discipline with relevant thesis work
- Demonstrated experience with:
 - Developing and applying multi-scale models of process units (i.e. reacting and separation systems, phase equilibrium, making thermodynamic models of mixtures predictive, process simulation in steady-state/dynamic/cyclic mode)
 - Building, solving, and optimizing robust process models which incorporate fundamental process chemistry
 - At least 5 years experience with process simulation platform (APSEN), hybrid modeling (i.e: OLI/ASPEN), Techno-economic Analysis, Life cycle analysis.
- Computational languages such as MATLAB or Python are assets
- Strong ability and interest to work on applications driven by abstract problems and develop creative out-of-the box solutions
- Driven and self-motivated
- Strong written and oral communication skills in English or French. Being bilingual is preferred.

Preferred Qualifications/ Experience

- Lab and/or pilot scale experimentation
- Process scale-up experience understanding the impact of scale on unit operations/commercial-scale embodiment/design
- Knowledge about common unit operations in hydrometallurgical and pyrometallurgical plants. Experience with technology selection and high-level cost estimation of equipment is an asset.

Your benefits

A career at Geomega is designed to last. Our commitment to you is deep: our employees grow personally and professionally, with benefits based on our core categories of health, safety, and life. These include:

- Dental Insurance
- Life Insurance
- Vision Insurance
- Corporate Events
- Stock Purchase Options
- Casual Dress Code

Our salary range for this position varies from \$95,000 to \$125,000, depending on experience.

To learn more about our vision for the future, visit our website at www.geomega.ca !