Chemical Engineer for Pilot Plant Research and Development

About us:

Seloxium Ltd. is a dynamic and diverse spin-out company from the University of Oxford. We are revolutionizing clean growth and the circular economy within the mining & refining sectors by selectively recovering high-value metals from in-process or effluent water streams. Our multi-patented 'selective flocculation' technology will change the way we mine, refine and process these metals, offering a greener and more sustainable solution to metallic resource recovery and reuse.

Among the dissolved species present in industrial process wastewaters and mine tailings, there are valuable and strategically important metals like gold, platinum, and rare-earth metals, which are difficult and costly to remove using current technology. In general, they are not effectively recovered, and instead discharged and lost to the environment as 'sludge'. Seloxium is developing its Selectal™ range of technology to selectively extract, flocculate and recover a wide variety of these high-value metals from process or waste streams. 'Aqua Mining' of valuable metals from wastewater using Selectal™ not only combats environmental pollution but also turns process effluent treatment plants into 'resource recovery factories'.

For more information, please visit our website: www.seloxium.com

About the Role

We are looking for an experienced chemical engineer to join our research and development team full-time. As we embark on an exciting engineering project to build a pilot plant and modular systems for our cutting-edge technology, we are seeking to employ a skilled chemical engineer to support and assist with the basic engineering package. This dynamic role will call for deep technical expertise and engagement on various cross-functional activities in the pilot plant arena, including process design, development, commissioning , and optimization/revamping, as well as maintaining equipment in a operationally well-defined state. In addition, the role will also involve performing physical property testing of materials and products, background researching, designing and developing new production processes, coordinating and performing pilot plant studies, and conducting procurement tasks. The candidate will also analyse pilot plant experimental data to develop conclusions, communicate and disseminate results, evaluate and improve on current processes, create standards and specifications, and assist in establishing timelines and budgets.

Key Qualities Sought

The ideal candidate will be highly motivated, proactive, and innovative, with strong analytical and problem-solving abilities, an attention to detail, excellent interpersonal and organizational skills, and a commitment to staying current with the industry state-of-the-art.. A proven track record in coordinating and collaborating with professionals from other disciplines, including chemists, is essential for this position.

Main Responsibilities and Duties

- Research, design, and develop new production processes. via pilot plant development.
- Install, commission, maintain, and inspect equipment and facilities.
- Coordinate and perform pilot plant tests.
- Analyse test data to draw conclusions.
- Communicate the results of analysis and research.
- Evaluate current processes and develop improvements to efficiency, product quality, safety and sustainability.
- Perform routine calibration and troubleshooting of instruments.
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- Perform chemical analysis and physical property testing of materials and products.
- Create standards and specifications for processes, facilities, products, and tests.
- Establish of timelines and budgets.
- Provide training and mentorship to technical staff.

Prerequisites: Qualifications, Experience and Skills

<u>Essential</u>

- A BEng or BSc or higher degree in chemical engineering or a related field, commensurate with an Upper Second-Class Honours level in the UK.
- Experience in executing chemical process design, and producing process design package including:
    - Material and energy balances and process flow diagrams (PFD),
    - Development of piping and instrumentation diagrams (P&ID) from PFDs,
    - Utility specification, flow and distribution
    - Preliminary sizing and specification of equipment and instruments
    - Hazard, safety and sustainability analysis.
- Experience in coordinating and collaborating with other engineering/scientific disciplines to deliver physically engineered systems.
- Three to five years' experience in a production, research or designing, constructing, and commissioning pilot plants and process plants, including project management.
- A proven ability to solve highly technical problems in a team-based environment.
- An ability to execute tasks with minimal supervision.
- Excellent presentation and verbal communication skills and strong technical writing skills.
- Readiness to travel and operate pilot plants at various sites.

Desirable

- Direct experience with spreadsheet and database software to compile, analyse, and present data.
- Familiarity with coagulation and flocculation processes in the mining, refining or wastewater industry sectors.
- Familiarity with process improvement methodologies.
- Direct experience with chemical engineering simulation packages such as ASPEN.

What we offer:

This full-time position offers competitive compensation and a comprehensive benefits package, including private healthcare, a generous pension scheme, and professional development opportunities. Our collaborative and innovative work environment supports work-life balance, with regular working hours and minimal travel requirements. Specific salary ranges will be discussed during the interview process, ensuring transparency and fairness. Our offer includes the following additional benefits:

- Minimum of 25 paid holidays + UK bank holidays
- Flexible working arrangements
- Staff social events and away-days
- Cycle-to-work scheme.

We are looking for a passionate innovator who is inspired by the sustainable and circular economy and wants to help build Seloxium into a green and profitable company that can make a real impact in achieving our sustainable development goals.

If you are excited about contributing to a groundbreaking technology development in the circular economy arena and advancing your career in a dynamic and innovative environment, we encourage you to apply.