Recovery of gold from carbonaceous mine waste

MEng (Chemical Engineering) (Research) (read more here about the programme and admission requirements)

Host: Dr Margreth Tadie

Commencement: The successful candidate must assume postgraduate work in January 2025.

Bursary: A bursary will be available. Candidates that already have their own funding for living expenses and tuition will have an advantage.

The research group of Dr Tadie is seeking a highly motivated Master's-level candidate to investigate innovative methods for the recovery of gold from carbonaceous mine waste. Carbonaceous material in mine waste poses a challenge for gold recovery due to its propensity to adsorb gold from cyanide leach solutions, leading to losses. However, with the right approach, this waste can be processed to recover valuable gold that would otherwise remain locked in the waste stream.

This project will focus on developing and optimizing techniques for extracting gold from carbonaceous materials, aiming to both improve gold recovery rates and contribute to more sustainable mining practices by valorising mine waste. The research will explore novel extraction techniques, evaluate the effectiveness of pre- treatment methods, and assess how different types of carbonaceous materials impact gold recovery.

The successful research candidate will spend time on a gold tailings reprocessing site and receive mentorship from industry.

Requirements

- A bachelor's degree (BEng/BScEng or similar) in Chemical Engineering from an accredited tertiary institution. Candidates with BTech, National Diploma, or advanced diploma qualifications will not be considered.
- Applicants must have good academic record (preferably with a course aggregate of >65%).
- Previous experience in mineral processing will be a definite advantage but is not required.
- Preference will be given to South African citizens and permanent residents who display academic excellence.

Application

Interested candidates must provide the following documentation: a cover letter, CV, degree certificate(s), complete academic transcript(s), and contact details of at least three academic references. Applications can be sent to mtadie@sun.ac.za before 15 November 2024. Candidates may consider their application unsuccessful if they do not receive any feedback within four weeks of applying.

Stellenbosch University reserves the right not to fill the position.