

Reducing carbon emissions through mine waste valorisation

MEng or PhD (Chemical Engineering) (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 for the relevant MEng/PhD registration. Candidates that already have their own funding for living expenses and tuition will have an advantage.

The research group of Dr Tadie is seeking an excellent Master's/PhD-level research candidate to explore innovative solutions for reducing carbon emissions through the valorisation of mine tailings. Mining activities generate vast quantities of solid waste material, which, if repurposed, can contribute significantly to sustainable mining practices and environmental stewardship.

This project will investigate the feasibility of integrating CO₂ capture technologies into mine waste valorisation processes. The aim is to assess whether tailings, often considered an environmental liability, can be transformed into valuable materials while also serving as a medium for carbon capture. This dual-purpose approach could enhance the sustainability profile of mining operations while opening up opportunities for funding through the reclamation of value from tailings.

Requirements

- A bachelor's degree (BEng/BScEng or MEng/MSc Eng 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.