

Sustainable chemistry for synthesis of novel vaccine adjuvants from natural compounds

PhD or MEng in Chemical Engineering (read more [here](#) about the programme and admission requirements)

Host: Prof. Neill Goosen

The research group of Prof Goosen is seeking an excellent research candidate at Masters or PhD level to investigate the synthesis of compounds with the potential to act as vaccine adjuvants, via sustainable chemistry methods. Adjuvants are included in vaccines to increase their efficacy and to lengthen the time period that vaccines are effective. Carbohydrates are safe and biocompatible, and adjuvants built around carbohydrates (either as pure carbohydrates, or as glycolipids) can replace current aluminium-based adjuvants, thereby contributing to improved vaccine development. The project will focus on developing reliable and efficient laboratory scale pathways to produce carbohydrate-based molecules that can act as candidate adjuvants.

The postgraduate candidate will need to apply for the Chan Soon-Shiong Family Foundation-South African Medical Research Council postgraduate scholarship award [here](#), and acceptance to the research group will be contingent on obtaining the scholarship. It is the responsibility of the candidate to ensure they adhere to eligibility criteria and to collect supporting documentation on time.

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

Bursary: According to the postgraduate scholarship provided by the Chan Soon-Shiong Family Foundation award.

Requirements

- **For PhD studies:** A master's degree (MEng/MSc or similar) in Chemical Engineering or related field from an accredited tertiary institution.
- **For Masters studies:** 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 biocatalysis, carbohydrate chemistry or bioseparations 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 (1) provide the following documentation: a cover letter, CV, degree certificate(s), complete academic transcript(s), and contact details of at least three academic references and (2) prepare a research proposal **based on enzymatic production of glycolipids** according to the [template found here](#), and **return it to Prof Goosen for comment by the 16th of September 2024**. Applications can be sent to njgoosen@sun.ac.za. 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.