Postdoctoral Fellowship – Nano-biosensor point-of-care (POC) device

Department of Microbiology, Stellenbosch University, Stellenbosch, 7600, South Africa

Scope of Research: The successful candidate must have experience in electronics, the construction of electronic circuits, electronic sensors, amplification of analogue signals, transfer of signals to receivers, the developing of software and knowledge in the designing of a prototype biosensor. Since the biosensor is developed for the identification of pathogenic microorganisms, the applicant must have a solid understanding, and experience in Microbiology. The prototype will be tested on specific pathogens, mostly bacteria. The device will be tested in clinics and hospitals before final registration. It is expected from the successful candidate to be part of a bigger research group that focuses on biosensors, bacteriology, microbial peptides, bacteriophages, and probiotics. The research will be conducted in the laboratory of Prof LMT Dicks, Department of Microbiology, Stellenbosch University (SU), in collaboration with Prof WJ Perold from Electrical and Electronic Engineering at SU.

Equipment and infrastructure required to conduct the research is available in the Department of Microbiology and Electrical and Electronic Engineering (SU). The laboratories are equipped with the latest technology, research facilities and equipment. The post-doctoral fellow is expected to collaborate with postgraduates from all research groups in the Department of Microbiology if so required. Central facilities include walk-in fridges, walk-in incubating rooms with shakers, freeze dryers, centrifuges, and a modern tissue culture facility. Specialised equipment include a fluorescence microscope, PCR machines, a TEACAN and several HPLCs. We collaborate with colleagues at the Central Analytical Facility (CAF), hosted in the same building as Microbiology. The services rendered by CAF include ES-MS, DNA/RNA sequencing, next-generation sequencing, gas chromatography, mass spectrometry, electron microscopy and flow cytometry. All staff, postgraduate students and post-doctoral fellows have access to a modern library and internet services.

Requirements:

1. PhD in Electric and Electronic Engineering, received within the last five years.
2. Experience in microbiological techniques and analytical biochemistry, specifically protein interactions, as well as peptide purification. Experience in collaborating with microbiologists.
3. Publication record in the fields of Electric and Electronic Engineering.
4. Ability to independently write and edit scientific articles according to the standards set by reputable scientific journals.
5. Good work ethics, student supervision and participation in research discussions.

Commencement of duties: 10 April 2023.

Enquiries: Prof Leon M.T. Dicks, Distinguished Professor, Department of Microbiology, Faculty of Science, Stellenbosch University, Private Bag X1, Matieland 7602, South Africa. Email: LMTD@sun.ac.za

Applications: A letter of application, accompanied by a comprehensive *curriculum vitae*, including a list of publications, as well as degree certificates, academic transcripts, and the names and contact details of at least

three referees, should be sent to LMTD@sun.ac.za. All documents must be merged into a single PDF file and attached to the application. *Applicants should request their referees to forward confidential reports directly to LMTD@sun.ac.za by the closing date.* Incomplete and late applications will not be considered.

Closing date: Monday 3 April 2023 (The university reserves the right not to fill the position)
Please note that postdoctoral fellows are not appointed as employees, and their fellowships are awarded tax-free. They are therefore not eligible for employee benefits.

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