Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT
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saam vorentoe

Postdoctoral Research Fellowship
Data Science & Green Hydrogen Engineering Research

The School of Data Science and Computational Thinking together with the South African Research Chair in Green Hydrogen at Stellenbosch University (SU) seeks applications for the appointment of one Postdoctoral Research Fellow within the School of Data Science and Computational Thinking. This is a joint fellowship opportunity with Coventry University (CU), Department of Electrochemical Engineering, Hydrogen Energy Research Theme in the Centre for E-Mobility and Clean Growth.

The successful candidate will focus on conducting scientific research related to predictive modelling for fuel cell technology development and monitoring.

The global shift towards renewable fuels and electrified transport systems is accelerating, especially in sectors with high energy demands and emissions, such as heavy-duty freight and maritime transport. Hydrogen-powered fuel cells have emerged as a leading zero-emission technology for these applications, providing high energy density and fast refuelling capabilities. These make such applications especially attractive for long haul and heavy-duty usage environments.

To ensure reliable, safe and efficient operation of hydrogen-powered systems in e-mobility applications, advanced fuel cell testing and fault diagnostics are essential. Emerging machine learning and predictive modelling approaches offer effective mechanisms to enhance real-time sensor-based monitoring of fuel cell performance, detecting and classifying faults, optimising the systems operation and lifespan and enabling condition -based maintenance strategies.
This fellowship position will contribute to the development, testing and validation of fuel cell systems in e-mobility contexts, supported by data-driven modelling, sensor testing and AI-based diagnostics.

The researcher will work with the team mentioned, at clean energy systems based at Coventry University and the School of Data Science and Computational Thinking. The candidate will be expected to publish the results of the research at local and international conferences, and in high-impact journals. Limited mentoring and supervision of post-graduate students within the Green Hydrogen Engineering Research may be required. The successful candidate will play an active role in the writing of research and grant proposals and will collaborate with industry experts to ensure continued alignment with industry needs.

The fellowship is available for one year, renewable for up to two years, subject to satisfactory performance and availability of funding.

Hosts:

- Prof Kanshukan Rajaratnam, School of Data Science and Computational Thinking, SU
- Prof Prathieka Naidoo, Department of Chemical Engineering, SU
- Prof Oliver Curnick, Professor of Electrochemical Engineering, CU

Requirements:

- PhD in relevant field (must have graduated within the last five years)
- Excellent communication skills in English (both written and verbal)
- A proven publication record in high-impact journals and a demonstrated capacity to conduct independent research (minimum one relevant published article in a Scimago Q1 or Q2 journal)
- Background in data science and data modelling relevant to this work

Recommendations:

- An understanding of the production of green hydrogen and/or related technologies and the uses of hydrogen in decarbonisation strategies

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.

Stellenbosch University reserves the right not to make an appointment.

Commencement of duties: As soon as available.

Closing date: 25 July 2025

Application process: Send a letter of application, accompanied by a comprehensive curriculum vitae, including list of publications, link to the candidate's PhD thesis, and the names and contact details of two referees, to Prof Prathieka Naidoo, prathiekan@sun.ac.za