



VISION

Shape and own the future

To be a transforming, equitable, sustainable, and academically excellent University of Technology anchored in its communities.

MISSION

To offer technological, career-directed educational programmes focussing on the innovative problem-solving research and engage with government, business, industries and communities as end-users.

FACULTY OF ENGINEERING DEPARTMENT OF CIVIL ENGINEERING AND SURVEYING POST-DOCTORAL RESEARCH FELLOW

A post doctoral research fellowship funded by Mangosuthu University of Technology is currently available within the Faculty of Engineering in one of its key research thrust. The post doctoral research fellow will be required to join the “Energy Research Group” under Prof PB Numbi.

The aim of this research project is to develop efficient and cost-effective thermo-mechanical energy storage (TMES) technologies for residential, commercial, and industrial buildings, which take into account of local weather conditions (wind and solar) as well as time-variable electricity tariff. Innovative and existing TMES technologies, with emphasis on compressed air energy storage, will be investigated in terms of practicability and cost effectiveness. OPAL-RT hardware in-the loop technology will be used for monitoring, data collection and other developments such as control systems and energy management schemes.

The applicant must be able to work independently and if need be with a team and be willing to provide advice or research supervision for Masters and PhD candidates.

Key Performance Areas:

- Collaborate with other researchers for the development of cost-effective thermo-mechanical energy storage (TMES) technologies, especially compressed air energy storage.
- Write funding proposals or projects in energy management and renewable energy.
- To prepare and publish manuscripts of high quality in DHET accredited journals.
- To support the research areas and/ or projects of the supervisor they have been allocated to (by means of active research).
- Manage data resulting from the TMES research development.
- Ability to co-supervise relevant postgraduate research and/or collaborating with other postdoctoral fellows.
- Involvement in initiating and managing research projects.
- Assisting in overall management and contribute to the various activities of the Research projects.
- To assist in any relevant assignments as required by their supervisor.

Minimum Requirements:

- A Doctoral Degree in Electrical Engineering with background in Mechanical Engineering, or Doctoral in Mechanical Engineering with background in Electrical Engineering, obtained within the past 5 years.
- South African citizens and permanent residents will have priority.
- International Postdoctoral Research Fellows must have a long term visitor’s visa endorsed for academic activities affiliated with MUT (Section 11(1)(b) Visitors Visa)

- Published at least 2 journal papers (DHET) in optimization of energy systems in the last 5 years.
- Has not held full-time permanent academic or professional employment.

Recommendations:

- Practical experience in thermal processes and related simulation software.
- Experience in model simulation using MATLAB/SIMULINK-PLC coder, LabVIEW, PLC, Python, C or C++.
- Experience in using real-time simulators.
- Experience in writing quality funding proposals.
- Postgraduate student supervision.

Competencies:

- Computer literacy
- Good verbal and written communication skills
- Good organizational skills
- Ability to work independently

Bursary: R300 000.00 per annum

Benefits: None

Interested applicants should send (a) a motivation detailing the extent to which they meet the requirements of the position; (b) an application form (downloadable from www.mut.ac.za); (c) a Curriculum Vitae including a list of research publications, conference papers, and other scholarly outputs; (d) certified copies of academic qualifications plus academic records (**Please provide academic transcripts and SAQA evaluation certificate, if qualifications were obtained outside South Africa**); (e) Certified copy of ID document; and (f) names of three contactable referees to: Department of Human Resources and Development, Mangosuthu University of Technology, PO Box 12363, Jacobs, 4026 or via email: hr.engineering@mut.ac.za

Enquiries: Tel: (031) 907 7328 / 7560 / 7565

Closing Date: 20 September 2024