

## Research Fellow / Engineer (Microgrid) - AKR2 Singapore Institute of Technology

Direct Link: <https://www.AcademicKeys.com/r?job=245410>

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Posted Sep. 19, 2024, set to expire Jul. 5, 2025

**Job Title** Research Fellow / Engineer (Microgrid) - AKR2  
**Department** Engineering  
**Institution** Singapore Institute of Technology  
Singapore, , Singapore

**Date Posted** Sep. 19, 2024

**Application Deadline** Open until filled

**Position Start Date** Available immediately

**Job Categories** Research Scientist/Associate

**Academic Field(s)** Electrical and/or Electronics

**Job Website** <https://careers.singaporetech.edu.sg/cw/en/job/498777/research-fellow-engineer-microgrid-akr2>

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**Job Description**

## Research Fellow / Engineer (Microgrid) - AKR2

**Job no:** 498777

**Department:** Engineering

**Contract type:** Contract

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As a University of Applied Learning, SIT works closely with industry in our research pursuits. Our research staff will have the opportunity to be equipped with applied research skill sets that are relevant

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to industry demands while working on research projects in SIT.

The primary responsibility of this role is to deliver on an industry innovation research project where you will be part of the research team to perform modelling and real-time simulation of electric vessel's onboard microgrid and propulsion system.

### Key Responsibilities

- Participate in and manage the research project with Principal Investigator (PI), Co-PI and the research team members to develop onboard microgrid simulation models with energy management systems as well as to plan and test the relevant hardware systems.
- Work with research team to deliver the work scope and undertake these responsibilities in the project.

#### Work Responsibilities:

1. Develop detailed electrical models of the microgrid (power system) of various e-vessels based on the concept design in a simulation environment such as Matlab/Simulink.
  2. Design and develop an intelligent energy management system for the e-vessel microgrid for coordinated control of multiple energy sources considering cost, carbon, and operation constraints.
  3. Operate the simulated electrical model with EMS controller to perform simulations for various cases to demonstrate performance and recommend improvements at unit, sub-system and whole system level.
  4. Implement and carry out simulation studies for onboard microgrid and connection to shore charging infrastructure.
- Recommend efficient and reliable power system architecture(s) with other merits of high-density and light-weight.
  - Test the relevant power electronics and drives system hardware and troubleshoot the challenging problems.
  - Carry out Risk Assessment, and ensure compliance with Work, Safety and Health Regulations.
  - Coordinate procurement and liaison with vendors/suppliers.
  - Work independently, as well as within a team, to ensure proper operation and maintenance of equipment and assist in laboratory management.
  - Mentor students involved in the research project
  - For those hired at senior levels, management responsibilities may be included

### Job Requirements

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- Have a Master's or PhD's degree in Electrical Engineering or equivalent from a recognized University. Major in Power Engineering will be advantageous.
- Minimum 3 years of relevant experience in modelling and energy management algorithm development using MATLAB/Simulink for microgrid applications.
- Knowledge of power electronics, drives, and control is highly preferred. Hardware testing experience will be advantageous.
- Have experience and commitment to participate in project meetings.
- Self-motivated team player and good project management skills.
- Excellent writing, communication, presentation, and interpersonal skills.

### Key Competencies

- Able to build and maintain strong working relationships with people within and external to the university.
- Self-directed learner who believes in continuous learning and development
- Proficient in technical writing and presentation
- Possess strong analytical and critical thinking skills
- Show strong initiative and take ownership of work

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**Advertised:** 19 Sep 2024 Singapore Standard Time

**Applications close:** 31 Dec 2024 Singapore Standard Time

### Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

### Contact

Singapore