

## Research Fellow (Computational Fluid Dynamics) - VW4 Singapore Institute of Technology

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Posted Jun. 6, 2023, set to expire Jul. 5, 2024

**Job Title** Research Fellow (Computational Fluid Dynamics) - VW4  
**Department** Engineering  
**Institution** Singapore Institute of Technology  
Singapore, , Singapore

**Date Posted** Jun. 6, 2023

**Application Deadline** Open until filled

**Position Start Date** Available immediately

**Job Categories** Research Scientist/Associate

**Academic Field(s)** Mechanical Engineering  
Aerospace/Aeronautical/Astronautics

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**Job Description**

## Research Fellow (Computational Fluid Dynamics) - VW4

**Job no:** 498437

**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

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research staff will have the opportunity to be equipped with applied research skill sets that are relevant to industry demands while working on research projects in SIT.

The primary responsibility of this role is to develop a validated and robust numerical framework to capture droplets evaporation behaviour. The project requires the Research Fellow to work with both commercial and opensource numerical software to accurately predict and capture complex droplets physical behaviour and changes as they go through evaporation under different ambient conditions. The numerical results will be validated with experimental data from literature and also from results obtained within the team.

### Key Responsibilities

- Participate in and manage the research project with Principal Investigator (PI), Co-PI and the research team members to ensure all project deliverables are met.
- Meeting the project deliverables within the project timeframe, which consists of the following responsibilities:
  - o Explore different numerical models that can capture droplets physical behavior under both steady and transient state, at scales ranging from nanometres to millimetres.
  - o Develop numerical methods to capture droplets evaporative behavior accurately
  - o Compare and validate numerical results with experimental data from both literature and in-house experiment results
  - o Use state-of-the-art machine learning models to develop a multi-scale droplets evaporation model
- Assists in co-supervision of Final Year Projects (FYP) or capstone projects students together with the project PI
- Assists PI in drafting of reports, conference proceedings and journal articles based on the outcome of the projects
- Prepares and shares fortnightly report of results from project work with PI
- Support and coordinate procurement and maintenance of the software/hardware under the charge of the PI
- Carry out Risk Assessment, and ensure compliance with Work, Safety and Health Regulations.
- Work independently, as well as within a team, to ensure proper operation and maintenance of equipment.

### Job Requirements

- A good Bachelor, Masters or Ph.D degree in mechanical/aerospace Engineering

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- Strong prior knowledge and experience in fluid mechanics, for both steady and unsteady flow behaviours
- Relevant experience in both commercial (ANSYS Fluent preferably) and opensource CFD code (OpenFoam preferably)
- Strong skills in turbulence modelling, CFD mesh generation and use of parallel computing
- Have relevant experience in working with aerosols and droplets
- Proficient in handling large data sets and the ability to analysis and interpret results
- Fluent verbal and written communications.

### Key Competencies

- Good self-discipline and motivated to deliver
- Show strong initiative and take ownership of work
- 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

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**Advertised:** 05 Jun 2023 Singapore Standard Time

**Applications close:** 31 Dec 2023 Singapore Standard Time

### Contact Information

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

### Contact

Singapore