

Master's by Research (NUS-EDB IPP)	
Job Title	Master's by Research
Collaborating Company	Equinix-NUS Joint Research Programme
Project Details	Economic Development Board Industrial Postgraduate Programme (NUS-EDB IPP)
Job Posting Information	
Job Description:	<u>Project 1 – Sub-atmospheric purification of water utilizing waste heat from data centres</u> The project focuses on harnessing low-grade waste heat generated from data centre operations for innovative water purification applications under tropical climate conditions. The project aims to investigate the feasibility of repurposing waste heat for on-site water purification processes, thereby reducing dependence on fresh water consumption for evaporative cooling systems while improving overall resource efficiency. The candidate is expected to work on areas including: • Investigate sub-atmospheric and low-temperature water purification processes driven by low-grade waste heat from data centres. • Conduct thermal-fluid analysis and system-level evaluation of waste heat recovery and water purification integration. • Develop and validate computational and analytical models for coupled heat and mass transfer processes. • Assess the technical feasibility, energy efficiency, and sustainability performance of integrated waste heat utilisation systems. • Support experimental setup design, instrumentation, and performance testing for prototype or pilot-scale systems. • Analyse operational parameters including temperature, pressure, flow conditions, and water recovery efficiency. • Coordinate with multidisciplinary teams, industry collaborators, and vendors on system integration and implementation considerations. • Develop data processing, visualisation, and reporting workflows for engineering analysis and sustainability assessment. • Summarise research findings through technical reports, presentations, and publications. Programme Support • The successful candidate will be enrolled under a 24-month Master by Research programme supported under the EDB Industrial Postgraduate Programme. • Tuition fees will be covered by EDB. • A monthly stipend with CPF contribution support will be jointly provided by EDB and the industry partner. • Research funding support for consumables, conference participation, and related research activities will also be provided under the programme.
Job Requirements:	Job Requirements • Bachelor's degree in Mechanical Engineering, Chemical Engineering, Energy Engineering, Environmental Engineering, or related disciplines. • Strong interest in thermal-fluid systems, heat transfer, energy systems, water treatment, or sustainability-related research. • Familiarity with computational modelling, CFD simulation, or system-level engineering analysis is advantageous. • Experience with experimental setup, instrumentation, sensors, and data acquisition systems will be beneficial. • Knowledge of data centre cooling systems, waste heat recovery, or water purification technologies is an added advantage. • Proficiency in engineering software tools such as ANSYS Fluent, MATLAB, Python, or similar simulation and data analysis platforms is preferred. • Good analytical, problem-solving, and technical reporting skills. • Ability to work independently as well as collaboratively in multidisciplinary and industry-linked research projects. • Strong written and verbal communication skills.

Contact Details	ruochenh@nus.edu.sg Dr. HONG Ruochen metwei@nus.edu.sg Dr. WEI Tao (Interested applicants should send the motivation letter, curriculum vitae, and publication list via email to the above emails.)
Validity of Job Advert	31 Aug 2026 (for January 2027 intake)