Job Description: We are looking for a highly motivated and passionate post-doctoral research fellow to work on a funded research project that investigates the development of personalized cooling systems leveraging thermoelectric cooling technology. The aim of the research is to design a personalized cooling device for mixed-mode ventilation and natural ventilation environments in the tropics. The post-doctoral research fellow will be supervised by the principal investigator Dr. Adrian Chong from the Department of the Built Environment, College of Design and Engineering, National University of Singapore.
Job title: Post-doctoral Research Fellow
Monthly Salary Range: SGD 6000 ~ SGD 7000 per month
Closing Date: Open Until Filled

Qualifications and Skills:

- Ph.D. in, Mechanical Engineering, Materials Engineering, or a related field
- Proficiency (with a demonstrated track record) in thermal engineering, heat transfer, and/or mechanical design
- Proficiency (with a demonstrated track record) in CFD software ANSYS.
- Proficiency (with a demonstrated track record) in COMSOL Multiphysics (including relevant modules such as Heat Transfer, CFD, and/or AC/DC modules).
- Proficiency (with a demonstrated track record) in prototyping and experimentation.
- Good communication skills, and an ability to present research in both academic and non-academic venues.
- Good scientific writing, communication and learning skills.

Responsibilities:

- Optimize the design and performance of a personalized cooling system by simulating different geometries, materials, and thermoelectric components using COMSOL.
- Conduct parametric simulations to evaluate system behavior under varying operational conditions, including power supply constraints, ambient temperatures, and human-machine interface factors.
- Validate simulation results through experiments or existing benchmark data.
- Develop detailed transient and steady-state CFD models using ANSYS to aid the design and validation of the personalized cooling system.
- Document project progress in technical reports, presentations, and peer-reviewed publications.
- Collaborate with cross-functional teams, including mechanical, materials, and electrical engineers, and potentially external industry partners.
- Document models and analysis tools as required.
- Organize, analyze and publish research in peer-reviewed scientific journals.
- Perform other duties as assigned.

Interested candidates apply by sending their CV to
Adrian Chong | Associate Professor | Department of the Built Environment, College of Design and Engineering | National University of Singapore
Email: adrian.chong@nus.edu.sg;