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## Research Fellow and Research Engineer Positions

Applications are invited for multiple positions in a multi-disciplinary project that will develop (utilizing leading-edge microsystem and microfluidic technologies) a novel energy recovery system, with a strong emphasis on its commercialization. Successful applicants are expected to start employment in August 2014. Only shortlisted applicants will be notified. Remuneration will be very competitive, and commensurate with qualifications and experience.

Applications with full CV are to be submitted electronically to Associate Professor **Peter Chen** ([mpechen@nus.edu.sg](mailto:mpechen@nus.edu.sg)) and Dr. **PS Lee** ([mpelps@nus.edu.sg](mailto:mpelps@nus.edu.sg)).

### Position 1 - Research Fellow in Microfluidics and Heat Transfer

**Scope and responsibilities** The Research Fellow will conduct computational analysis and experiments on various types of microfluidics devices for heat transfer applications, and will design and fabricate various prototypes based on the analysis. He/she will also supervise the Research Engineers (and possibly other students) working in the project.

**Qualification and other requirements** Applicants should possess a PhD degree in the area of thermal sciences (heat transfer, thermodynamics and fluid mechanics) from a reputable university, with a strong background in CFD heat transfer simulation and have good written and verbal communication skills.

### Position 2 - Research Fellow in Microfluidic Design and Fabrication Methods

**Scope and responsibilities** The Research Fellow will design various types of microfluidic devices, analyze their flow characteristics to optimize their performance for heat transfer, and develop methods to scale up their fabrication. He/she will also supervise the Research Engineers (and possibly other students) working in the project.

**Qualification and other requirements** Applicants should have a PhD degree in the area of microfluidics from a reputable university, with a strong background in fluid mechanics, good skills in modeling and numerical simulation, and knowledge and/or experience in the fabrication of microfluidic devices. The ability to initiate collaboration and working relationship with other research institutions and foundry service providers for large-scale fabrication of microfluidic devices is much preferred.

### Position 3\* - Research Engineer in Microchannel Heat Exchange

**Scope and responsibilities** The Research Engineer will design and assemble the experimental loop to validate the hydraulic and thermal performances of various types of microfluidic devices.

**Qualification and experience** Applicants should possess a BEng or MEng/MSc from a reputable university, preferably in the area of thermal sciences (i.e., heat transfer, thermodynamics and fluid mechanics), Computer skills in graphics and simulation (e.g., Fluent, CFX, COMSOL, MATLAB, etc.) for analysis of fluid flow and heat transfer, together with experience in conducting fluid dynamics and heat transfer experiments, are added advantages.

### Position 4\* - Research Engineer in Fabrication and Evaluation of Microfluidic Devices

**Scope and responsibilities** The Research Engineer will fabricate and evaluate various types of microfluidic devices for heat transfer applications, with a particular emphasis on implementing techniques for large-scale microfluidic device fabrication.

**Qualification and experience** Applicants should possess a BEng or MEng/MSc from a reputable university, preferably in the area of applied fluid mechanics with an emphasis on microfluidics and micro-fabrication. Computer skills in design and numerical simulation (e.g., SolidWorks, COMSOL, MATLAB, etc.) for analysis of liquid flow and heat transfer, and experience in micro-fabrication of microfluidic devices, are added advantages.

### Position 5\* - Research Engineer in Microfluidic Prototype Development

**Scope and responsibilities** The Research Engineer will integrate microfluidics and heat transfer techniques to develop a progressive series of proof-of-concept prototypes and to design and conduct experiments to evaluate their performance.

**Qualification and experience** Applicants should possess a BEng or MEng/MSc from a reputable university, preferably with an emphasis on microsystem engineering involving fluid dynamics, heat transfer, and/or microfluidics. Experience in design and fabrication of microfluidic devices are specifically desirable.

**Note:** In addition to the requirements specified for the individual positions, positive personal qualities, such as the ability to take initiative and to work independently, and having a good attitude, strong interpersonal skills and commitment to deliver results, would be much valued.

*\*Applicants for the Research Engineer positions should also have a good grasp of the principles of Mechanical Engineering in general and have good written and verbal communication skills. The Research Engineer position offers a unique opportunity for successful candidate to pursue a **PhD degree in NUS** while under employment, with possible tuition-fee related **financial support** provided during the PhD candidature.*