

**Title:** A fully funded postdoctoral associate position in microfluidics, studying the synthesis of advanced polymeric materials, focused on particles, membranes and wrinkled surfaces with biomedical applications.

**Description of work:**

We have developed microfluidics-based techniques, in combination of microfluidics with photolithography, to fabricate microhydrogels with 3D shape, membranes with 3D pore, and wrinkled surfaces with 3D feature. These resulting functional materials can offer additional abilities to their existing applications, such as drug delivery and tissue engineering, bioassay and biosensing, and cell culture. At Ryerson University, the postdoctoral associate has the opportunity to pursue the following areas of research:

The development of microfluidic devices for the synthesis of particles, membranes, and wrinkled surfaces, as well as the development of their applications (*i.e.*, porous membrane-based platforms for single cell analysis and biosensing, and wrinkled-3D-surface platforms for studies of cellular networks). Soft-lithography will be used to construct the microfluidic systems. An inverted optical microscope with UV light will be used for the synthesis of membranes and wrinkled surfaces.

Also, the postdoctoral will have the opportunity in working closely with an industry partner from *Sanofi Pasteur*, a leading vaccine company located in Toronto.

**Qualifications:** Applicants for the position must possess, or expect to shortly obtain, a Ph.D. in engineering, chemistry, physics, materials science or a related field. In addition, candidates should have experience in fluorescence optical microscopy, micro and nano-fabrication, microfluidics systems, polymerization, cell culture and characterization tools such as scanning electron microscopy (SEM).

**Duration:** One year with the possibility of an extension.

**Salary:** The salary range is \$40,000 CAD to \$45,000 CAD per annum, and will be determined by the experience and qualifications of the candidate.

**Application:** Interested candidates are encouraged to email their C.V. and contact Dr. Dae Kun Hwang.

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**Short Bio:** Dr. Hwang received his Ph.D. from McGill University and was a postdoctoral fellow for two years at the Massachusetts Institute of Technology before joining the Department of Chemical Engineering at Ryerson University.