Postdoctoral Fellow or Research Associate Position
York University

Job Title	Postdoctoral Fellow or Research Associate Position
Department	Mechanical Engineering
	https://acute.apps01.yorku.ca/
Institution	York University
	Toronto, Ontario
Date Posted	Jun. 19, 2025
Application Deadline	Jul. 10, 2025
Position Start Date	Aug. 1, 2025
Job Categories	Post-Doc
Academic Field(s)	Engineering - Other
Apply By Email	pouya.rezai@lassonde.yorku.ca, doost@yorku.ca

Job Description

Pathogens Extraction and Detection using Advanced Nanomaterials and Microfluidics

We are seeking a highly motivated postdoctoral fellow (PDF) or research associate (RA) to join our multidisciplinary team at the Department of Mechanical Engineering, Lassonde School of Engineering, York University, Toronto, ON, Canada.

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Join our **NSERC I2I-funded research team**, where we're advancing the frontiers of **microfluidics, materials science, polymer engineering, biomaterials, AI-assisted modeling**, and **sensor technologies**. In partnership with leading industry collaborators, our group is developing impactful technologies aimed at **commercializing high-need solutions** for global challenges in **pathogen and chemical detection and management**. This position offers an opportunity to design, synthesize, and apply advanced nanomaterial (e.g., functionalized imprinted polymer), microparticles and membranes, and sensors for pathogens (e.g. viruses) and **emerging contaminants (e.g., PFAS microplastics)** extraction, isolation and detection.

Key Responsibilities:

- Optimize droplet-based microfluidic or other systems for precise imprinted polymer particle generation and functionalization.
- Conduct research on polymers for pathogen/microplastic detection and separation.
- Characterize polymers using analytical and characterization methods such as, but not limited to, FTIR, NMR, SEM, and particle size analysis.
- Collaborate with a multidisciplinary team of scientists and industry partners.
- Prepare high-quality publications, reports and grants for academic and industrial partners.

Required Qualifications:

- PhD in Chemistry/Biochemistry, Polymer Science, Biomedical/Biological Sciences, Mechanical Engineering, Materials/Biomaterials Engineering, or a related field.
- Expertise in virus culturing and isolation, with experience in integrating virological methods into materials science or biosensing applications.
- Expertise in polymer synthesis, particularly imprinted polymers or similar affinity materials.
- Excellent written and verbal communication skills in English.

Preferred Skills and Attributes

- Hands-on experience in microfluidic design, fabrication, and testing or other particles fabrication methods.
- Proven track record of publishing in peer-reviewed journals and presenting at scientific conferences.
- Familiarity with UV-initiated polymerization and advanced polymerization methods.
- Proficiency in designing microfluidic platforms for controlled microparticles generation or other methods.
- Strong analytical skills with experience in advanced characterization techniques.

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- Ability to work independently and collaboratively in a multidisciplinary environment.
- Mentoring other students and assisting in grant development will be considered an asset.

Industrial Partners:

This position is actively supported by key industry partners, including ReCycLi Co., Frontiers Lithium, Sixth Wave Inc., pH7 Technologies Inc., and Elomatic Consulting Inc., as well as government agencies such as the Natural Sciences and Engineering Research Council of Canada (NSERC), the Canadian Food Inspection Agency (CFIA), and Environment Canada. Our research is focused on the development and commercialization of advanced materials to drive innovation in extraction and sensing systems. These technologies, referred to as Point-of-Need solutions, are designed to enable rapid, low-cost, and highly sensitive detection of chemical and biological targets in real-world applications.

What We Offer:

- A dynamic research environment with access to state-of-the-art facilities.
- Opportunities to contribute to impactful projects with real-world applications in health, energy, and sustainability.
- Collaboration with academic and industry leaders in Canada, the US, and Europe.

Salary:

- $60,000 to $80,000 CAD per year, commensurate with expertise and experience, with the possibility of extension for up to 3 years.

Location:

- Department of Mechanical Engineering, Lassonde School of Engineering, York University, Toronto, ON, Canada.

Application Details:

Candidates must be eligible to work in Canada, but priority will be given to Canadian residents. Interested candidates should submit the following documents to: Pouya.rezai@lassonde.yorku.ca

- A detailed CV highlighting relevant expertise and research experience.
- A cover letter describing your motivation, research interests, and suitability for the position.

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- Contact information for at least two academic references.
- Application Deadline: July 15, 2025.

We encourage applications from individuals of diverse backgrounds and are committed to fostering an inclusive and innovative research environment.

Contact Information

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

Contact

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Canada