

January 4<sup>th</sup>, 2022

**Job posting:** MAsc Student in Mechanical Engineering

Dr. Pouya Rezai (Mechanical Engineering) and Dr. Stephanie Gora (Civil Engineering) at the Lassonde School of Engineering at York University in Toronto, Canada, are seeking a MAsc level graduate student to develop and test a microfluidic device for lead detection in drinking water.

**Background:** Lead is a known neurotoxin that has well-documented adverse impacts on the cognitive and behavioural development of children. Traditional methods for lead detection in water require sophisticated instrumentation and highly trained technicians, which makes them unsuitable for rapid and routine lead detection. Microfluidic techniques have been proposed for lead detection on-site or at the point-of-use (POU) but to date have not been deployed in the field. Molecularly imprinted polymers (MIPs) are excellent low-cost and stable candidates for recognition of analytes in sensors that can be used to develop low-cost portable devices for sensitive detection of lead at the POU.

**Goal:** The goal of this project is to develop a small, non-invasive, but highly accurate sensor that can be used to conduct lead sampling at drinking water taps to accurately quantify lead exposure in homes and other buildings. The sensor will be characterized in the laboratory and tested in the field.

**Details:**

Closing date: February 1, 2022

Start date: May 2022

Length: 2 years

**Qualifications:** The successful candidate will hold an undergraduate degree in mechanical, chemical, or materials engineering from an accredited university and a passion for using technology and engineering principles to solve real world public health problems. Previous experience with microfluidics would be considered a major asset in this position. To be considered for this position applicants must meet the department's GPA and English proficiency requirements (<https://lassonde.yorku.ca/mech/academics/graduate/admission-and-application-process/>).

**Funding:** Graduate student funding details are available on the Mechanical Engineering Department's website (<https://lassonde.yorku.ca/mech/academics/graduate/graduate-funding/>)

**Instructions:**

Please send a cover letter explaining why you are interested in the position, an up-to-date CV, and a copy of a recent transcript to Dr. Gora ([stephanie.gora@lassonde.yorku.ca](mailto:stephanie.gora@lassonde.yorku.ca)) and Dr. Rezai ([pouya.rezai@lassonde.yorku.ca](mailto:pouya.rezai@lassonde.yorku.ca)) with the subject line *Application for MAsc – Microfluidics for Lead Detection*. Interviews will take place in the first week of February and only applicants selected for an interview will be contacted.



### **About York University:**

Established in 2012, the Lassonde School of Engineering, York University offers a broad range of undergraduate and graduate programs to educate multidisciplinary problem solvers, critical thinkers, and entrepreneurs who understand creativity, communications, social responsibility, and cultural diversity. Further information is available at <http://lassonde.yorku.ca/>.

York is a leading international teaching and research university, and a driving force for positive change. Empowered by a welcoming and diverse community with a uniquely global perspective, we are preparing our students for their long-term careers and personal success. Together, we can make things right for our communities, our planet and our future.

Lassonde School of Engineering is committed to providing a welcoming and supportive environment for all who wish to study, teach and conduct research. York University is an Affirmative Action (AA) employer and strongly values diversity, including gender and sexual diversity, within its community.