

Graduate student position (MSc) in materials chemistry and vibrational spectroscopy

University of Ontario Institute of Technology

Oshawa, Ontario (ON), Canada

Hemoglobin (Hb) disorders, such as sickle cell disease and β -thalassemia, are prevalent genetic diseases that impact the shape and production of red blood cells. This leads to reduced oxygen-carrying capacity, anemia, bone deformities, growth retardation and, in severe cases, death. These disorders contribute to 7% of global health problems. Diagnosis of Hb disorders is important because early detection and treatment can help prevent or manage these complications and improve the patient's quality of life. Blood tests, although effective, can take up to a week to provide results, require more blood samples and are expensive. Due to these limitations, point-of-care (POC) diagnostic tools that provide rapid, reliable and specific results at the site of patient care are becoming increasingly important, especially for administering first-aid in a medical emergency and restricted diagnostic situations like an ambulance.

We have an open position for a graduate student at the level of Master of Science for the collaborative project between the Nano-imaging and Spectroscopy Laboratory (PI: Dr. Nisha Agarwal) and Surface Inorganic Chemistry Lab (PI: Dr. Olena Zenkina). The project goal will be the differentiation of different hemoglobin diseases using advanced vibrational spectroscopic techniques and devising nanostructured substrates.

Requirements: Applicants must meet the requirements of the Materials Science Graduate Program at Ontario Tech University (Oshawa, Ontario, Canada). Previous degree(s) and knowledge in analytical and materials chemistry are essential for this project. Positions are open to Canadian citizens or permanent residents; however qualified international candidates are encouraged to apply. We are committed to equity, diversity and inclusion and we encourage applicants from underrepresented groups to apply.

How to apply: Contact Nisha Agarwal (nisha.agarwal@ontariotechu.ca) for more information, or send a statement of research interests and related experience, plus a copy of your current CV and academic transcripts and names of two referees to contact for the letters of recommendation.

Start dates: Positions will remain available until filled with anticipated start dates of September 2023 or January 2024.

Ontario Tech University values diversity in its workforce and encourages candidates to self-identify as members of the following designated groups: women, visible minorities, aboriginal peoples and persons with disabilities.