

Carbonaceous Nanoparticles Synthesis from Biomass

PROJECT DESCRIPTION

Each year over 100,000 tons of sawdust, crops waste such as straw and peat, and other sources of biomass are produced in Alberta. Most of this biomass is immediately directed to waste, without any further use. Biomass contains a significant amount of glucose which can be diverted from landfills and converted into valuable products such as char nanomaterials through hydrothermal processing. These nanomaterials are rich in carbon, have a high surface area, and have a tunable surface chemistry which can be employed for use in water remediation. The purpose of this project is to develop a lab-scale process to convert biomass directly into char nanomaterials and characterize the product surface chemistry and contaminants removal properties. The results of this project will provide an alternative route to biomass landfilling, and a relatively low-cost process to produce valuable carbon nanomaterials.

The student on this project will work in a water chemistry lab equipped with cutting edge instruments. He/she will receive a hands-on experience in nanoparticle synthesis and surface characterization along with data analysis and writing a report/manuscript.

Required skills:

Students with a strong background in chemical engineering or chemistry, and/or nanotechnology are encouraged to apply for this position. Priority will be given to those with work experience in laboratory settings. Proper handling of instruments and respecting safety guidelines are critical in this project.

FACULTY-DEPARTMENT

Science - Earth and Atmospheric Sciences

DESIRED FIELD OF (STUDENT) STUDY

Chemical engineering, chemistry

INTERNSHIP LOCATION

University of Alberta Main Campus – Edmonton

NUMBER OF INTERNSHIP POSITIONS

1

Contact: Brendan Cavanagh, Internship Coordinator (Inbound)
University of Alberta International
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INTERNSHIP START DATE

July 4, 2018

INTERNSHIP END DATE

3 months after start date

ARE THE DATES FLEXIBLE?

Yes, I am flexible regarding the internship dates. Selected students can contact me to request a date change.