**Fundamentals of Electro-dewatering of Pulp and Paper Sludge: Investigating the Effect of Conductivity**

Electro-dewatering is the application of a low electric current in addition to mechanical pressing; it is a technology that is wide-spread in many fields due to its high dewatering capability and low energy consumption. We are seeking a proactive and enthusiastic “Master of Engineering” student to work on the electro-dewatering of biosludge. The selected student will work with Raphael Arakelian (MASc candidate) and Dr. Torsten Meyer. This project is co-supervised by Professor Grant Allen and Professor Honghi Tran.

As the role of conductivity in electro-dewatering is not well established in the literature, the main objective of this project is to investigate the effect of varying biosludge conductivity through the addition of calcium chloride and sodium chloride. Preliminary studies have shown an increase in Joule heating with increased conductivity.

Activities include characterizing biosludge from both a municipal wastewater treatment plant (WWTP) and a kraft mill, investigating the role of calcium chloride/sodium chloride addition on the conductivity of biosludge, experimenting with our electro-dewatering lab setup. Preferred experience includes laboratory work in bioprocessing with a knowledge of wastewater treatment methods. We are looking for a student to start working on this project immediately.

Interested MEng students should send their CV and copy of their transcripts (unofficial is fine) to Professor D. Grant Allen, [dgrant.allen@utoronto.ca](mailto:dgrant.allen@utoronto.ca) and Dr. Torsten Meyer, [torsten.meyer@utoronto.ca](mailto:torsten.meyer@utoronto.ca)