

## Ph.D. Position in Polymer Science

### **Subject: Development of Graphene-Enhanced Sustainable Polymer Nanocomposites**

#### **Context :**

LIPEC-PolymerÉTS the composites and polymers engineering laboratory of École de Technologie Supérieure de Montréal is looking for a candidate for a doctoral researcher position in the field of polymer nanocomposites. This thesis work will be carried out as part of a collaboration involving NanoXplore (Montréal), the leading producer of graphene in Canada, École de Technologie Supérieure de Montréal (Dept. of Mechanical Engineering), Canada, and University of Toronto (Dept. of Mechanical and Industrial Engineering), Canada.

#### **Research Objectives:**

The development of sustainable polymer nanocomposites is essential to address the growing environmental impact of plastics, particularly in industries such as packaging, where waste and recycling challenges are significant. This project aims to advance the design and processing of polymer nanocomposites, reinforced with graphene, to improve material performance and recyclability.

We seek to hire a Ph.D. student who will work on the development of innovative processes for creating sustainable, graphene-reinforced polymer nanocomposites. The student will explore various processing techniques to optimize the dispersion and integration of graphene within polymer matrices, with the goal of enhancing the properties of the resulting materials.

The project will be conducted at École de Technologie Supérieure (ÉTS), in collaboration with NanoXplore and the University of Toronto. This partnership will provide the student with access to state-of-the-art facilities and expertise, allowing the exploration of potential industrial applications.

Furthermore, the project will be developed within the framework of the Tier 1 Canadian Research Chair (CRC) held by Professor Nicole R. Demarquette Nicole on Rheology of Polymer Blends and Composites. <https://www.etsmtl.ca/en/research/chairs-and-labs/canada-research-chair-rheology-polymer-composites>

Working within the framework of the CRC, will provide an excellent environment for sharing knowledge, fostering innovation, and achieving significant progress in the project's objectives.

#### **Required qualifications:**

- Master's in chemical engineering of materials engineering with a good background in polymers.
- Full proficiency in English.

#### **Conditions:**

Compensation :	Scholarship to be discussed
Starting date :	January 2025
Laboratory :	LIPEC – PolymerÉTS : <a href="https://polymerets.etsmtl.ca/">https://polymerets.etsmtl.ca/</a>
Thesis supervisor	Pr. N.R. Demarquette

#### **How to apply :**

Interested applicants should send a C.V., contact information of two references, transcripts, and a cover letter outlining their research experience to Pr. Nicole R. Demarquette at [nicoler.demarquette@etsmtl.ca](mailto:nicoler.demarquette@etsmtl.ca).