



**Thin film electronics: the role of functional polymers, their blends and interfaces**  
**Benoît Lessard/University of Ottawa**  
Thursday, March 07, 2024, 2:30pm  
Dupuis Hall, Room 217

Our society is faced with an increasing challenge of E-waste and with the proliferation of the internet of things and smart packaging this is only going to get worse. Low cost printed electronics, are facilitating the development of emerging technologies from artificial skin to stretchable and bendable cell phone displays. The desire to integrate these materials onto biodegradable substrates or to use compostable active materials is necessary. Furthermore, the chemical toolbox available to us enables the fine-tuning of the materials to design and engineer the desired properties. This seminar will cover our groups recent advances in 1) the simple fabrication of polymer wrapped semiconductive single walled carbon nanotube transistors on high performing green polymer dielectrics;[1,2], 2) advances towards the development of biodegradable and flexible transparent heaters [3,4] and 3) the role of polymer self-assembly on the substrate and the use of blends in improving the performance and air stability of organic thin film transistors.[5,6]. We aim to build structure property relationships between material design, thin film processing and device performance for the enabling of sustainable next-generation polymer-based electronics.

[1] *ACS Appl. Mater. & Interfaces*, 2023, 15, 2, 3680-3688.

[2] *Adv. Mater. Interfaces*, 2023, 10, 14, 2300079.

[3] *Flexible Printed Electron.* 2023, 8, 2.

[4] *Adv. Mater. Technologies.* 2022, 7, 9, 2200037.

[5] *ACS Appl. Mater. & Interfaces*, 2022, 14 (35), 40361-40370

[6] *Mater. Adv.* 2023,4, 4707-4711