



Western

Western University
Department of Physics and Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Date: Thursday, 27 January 2022

Time: 1:30 p.m.

via Zoom: <https://westernuniversity.zoom.us/j/93008633324?pwd=dlczOG1DSk5uYjZFbmRxMlVCVmtrdz09>

Dr. Oleksandr Voznyy

Department of Physical and Environmental Sciences
University of Toronto

“Applying machine learning to search for new materials for clean energy”

ABSTRACT

Solving the climate crisis requires dramatic changes that can be achieved by policy, technology, or personal behavior. Renewable energy is one of the major targets, yet it requires discovering new materials with significantly reduced cost in order to make renewables economically competitive with fossil fuels.

Parameter space for the discovery of new materials is vast and impossible to explore with conventional brute-force sampling, neither computationally nor experimentally. Machine learning is a new tool that allows us to learn the empirical rules connecting disparate experimental observations and structure-property relationships.

In this talk, I will provide a brief intro into machine learning and discuss how we use it for predicting and synthesizing new materials for solar cells, Li-ion batteries, and various catalysts.

Host: Prof. L. Goncharova