TRENT UNIVERSITY

PHYSICS & ASTRONOMY SEMINAR SERIES

Dr. Nir Rotenberg

Associate Professor, Queen's University

Wednesday, November 25, 2026
11:00 a.m. to 11:50 a.m. in ENW 115

Controlling quantum dots and their interaction with light

Abstract:

At Queen's University, my group builds photonic circuits with embedded artificial atoms known as quantum dots. We do this because the nanoscale geometry of our structures allows us to control the flow of light and, in turn, how it interacts with nanoscopic objects such as our quantum dots. In this talk, I will introduce our platform and some of our goals. I will focus on the development of light-based quantum hardware that operates in the telecom band, highlighting recent control that we have demonstrated over the way quantum dots emit photons, and explain why this is critical to our long-term goals of building nonlinear quantum photonic circuits capable of generating complex quantum light states.