

UNIVERSITY OF RHODE ISLAND

Department of Chemistry

SEMINAR

Room 105 Beupre

3:00 P.M., Monday, Oct. 25, 2021

Prof. Lyubov Titova

Worcester Polytechnic Institute

Worcester, MA

***“Terahertz spectroscopy:
conductivity and optical
properties of 2D materials”***

HOST

Dugan Hayes

Department of Chemistry

401-874-5516

Terahertz spectroscopy: conductivity and optical properties of 2D materials

Lyubov Titova
Departments of Physics and Chemical Engineering
Worcester Polytechnic Institute



Two-dimensional, or 2D, materials are attracting considerable attention as a testbed for new physics and as candidates for applications in flexible nanoscale high-speed optoelectronics, solar energy conversion, and chemical sensing. Most unique properties of 2D materials stem from their highly anisotropic optical and electronic properties. Terahertz (THz) spectroscopy provides access to those properties with ultra-high time resolution and without the complications of electrical contacts. I will describe how we apply time-resolved THz spectroscopy to probe ultrafast dynamics of charge carriers in two 2D layered materials with vastly different properties, from semiconducting GeS and GeSe to a new class of metallic 2D materials, MXenes.