

Good afternoon,  
You are invited to attend our weekly ECE Graduate Seminar.

**Old Dominion University**  
**College of Engineering and Technology**  
**Department of Electrical and Computer Engineering**

All lectures to be held at 3:00pm on Fridays online at

[ODU DL: ECE 731 831 Grad Seminar](#)

For more information, contact Dr. Chung Hao Chen at (757) 683-3475 or email [cxchen@odu.edu](mailto:cxchen@odu.edu).

**Friday, September 17, 2021 Seminar Topic:**

**ULTRAFast THERMOREFLECTANCE STUDIES OF NIOBIUM THIN FILM** by Md. Obidul Islam,  
Ph.D. Candidate in the Department of Electrical & Computer Engineering at Old Dominion University

**Abstract:**

Thermal properties of thin films play crucial roles in developing novel devices in the field of microelectronics, energy harvesting and photonic system. As the geometry and structural growth of thin films are different than their bulk counterpart, the mechanical, optical, electrical, and thermal properties are varied and dependent on thickness largely. Energy transport in a thin film requires a technique with picosecond temporal resolution. The advent of femtosecond laser pulse made it possible to study the non-equilibrium electron-phonon interaction, coherent phonon transport, picosecond acoustics, thermal expansion coefficient and properties of thin films and interfaces. Pump-probe thermo-modulation technique using short-pulsed laser has been extensively used for measuring thermophysical properties such as thermal conductivity,