Lakehead UNIVERSITY | Department of Physics

The Department of Physics invites you to attend research proposal presentations by:

NAVNEET KAUR

"Raman Probe for the Detection of Chemicals"

Supervisor: Dr. G. Das

A fiber-based Nanoprobe has been prepared for the detection of chemicals at the molecular level using Surface Enhanced Raman Spectroscopy (SERS). We deposited gold nanorods on the surface of a multimode tapered fiber via optical tweezing to obtain the SERS substrate. The process of optical tweezing can be used to trap and manipulate the distribution of the metallic particles. We will present the theoretical and experimental results of our investigations.

The author acknowledges the financial support of the Natural Sciences and Engineering Research Council of Canada (NSERC) and Canada Foundations for Innovations. The author also gratefully acknowledges the contributions of past graduate and undergraduate students in the Photonics Research group.

DAVIDE MARCHESE

"Adsorption of 2-D Halogenated Organic Molecules on the Si(111)-B($\sqrt{3}$x$\sqrt{3}$) R30^o Surface"

Supervisor: Dr. M. Gallagher

This project seeks to investigate the self-organization of two-dimensional halogenated organic molecules on the (111) surface of boron doped silicon. In particular, the research goal is to determine if Si(111)-B($\sqrt{3}$x$\sqrt{3}$) R30^o will support the surface-confined self-organization of halogenated monomers into organized networks. The self-assembly and subsequent two-dimensional polymerization will be investigated. The primary experimental technique will be scanning tunneling microscopy. However, other surface techniques such as low energy electron diffraction, Auger electron spectroscopy and X-ray photoelectron spectroscopy may also be employed.

DATE: **Thursday, AUGUST 15, 2019**

TIME: **2:00 pm** (Kaur) **and 3:00 pm** (Marchese)

Room: **CB 3031**