



**University
of Victoria**

Centre for
Advanced
Materials &
Related
Technology

CAMTEC SEMINAR

TITLE: *Super-resolution Chemical Imaging*

SPEAKER: **Dr. Nathan Lindquist**
Department of Physics and Engineering
Bethel University

DATE: Tuesday, October 31, 2017

TIME: 10:00 am

LOCATION: ELL 228

Abstract:

Applications of spectroscopy for chemical imaging are limited in spatial resolution by diffraction. As one solution, surface plasmon resonances in metallic nanostructures can manipulate optical energy within sub-wavelength dimensions. These locally enhanced fields are often called “hotspots” and can give chemical and spectral information of proximate molecules via Surface Enhanced Raman Spectroscopy (SERS). The large field enhancement from these hotspots can also give a “blinking” SERS effect that can be processed using Stochastic Optical Reconstruction Microscopy (STORM) algorithms for super-resolved imaging. In this way, combining SERS and STORM can provide super-resolution localization of SERS hotspots. Furthermore, the light can be analyzed for spectral content, thereby allowing chemical contrast imaging at the same time.

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