

Nanoplasmonics: Quantum, Nonlinear, and Single Molecule Regimes

By

Dr. Reuven Gordon



Monday, July 8, 2019, 12:30-2 p.m., SC 128

Abstract:

This talk will begin with a tutorial introduction to plasmonics and discuss the physical limits of electric field enhancement possible from metal nanostructures. Experiments probing the quantum regimes of plasmonics in sub-nanometer gaps will be presented and explained. Many of these experiments make use of nonlinear effects that are particularly sensitive to the local field intensity. Other regimes of nonlinear generation will also be presented, including the possibility of having a dominant Lorentz magnetic response. Finally, nanoaperture optical tweezers that extend the range of optical tweezers (Nobel Prize in 2018 to Ashkin) to the single molecule (protein) regimes will be presented, as well as protein-DNA and protein – small molecule interactions.

Biography:

Reuven Gordon is the Canada Research Chair in Nanoplasmonics and a Professor in the Department of Electrical and Computer Engineering at the University of Victoria. He has received a Canadian Advanced Technology Alliance Award (2001), an Accelerate BC Industry Impact Award (2007), an AGAUR Visiting Professor Fellowship (2009), the Craigdarroch Silver Medal for Research Excellence (2011), a Fulbright Fellowship (2016) and the Faculty of Engineering Teaching Award (2017). He is Fellow of the Optical Society of America (OSA), the Society for Photographic Instrumentation Engineers (SPIE), and the Institute for Electrical and Electronic Engineers (IEEE). Dr. Gordon has authored and co-authored over 160 journal papers (including 13 invited contributions). He is co-inventor for five patents and two patent applications. Dr. Gordon is a Professional Engineer of BC. Dr. Gordon has been recognized as an "Outstanding Referee" by the American Physical Society.



**Lunch will be available before the talk
(12:00pm- 12:30pm)**

