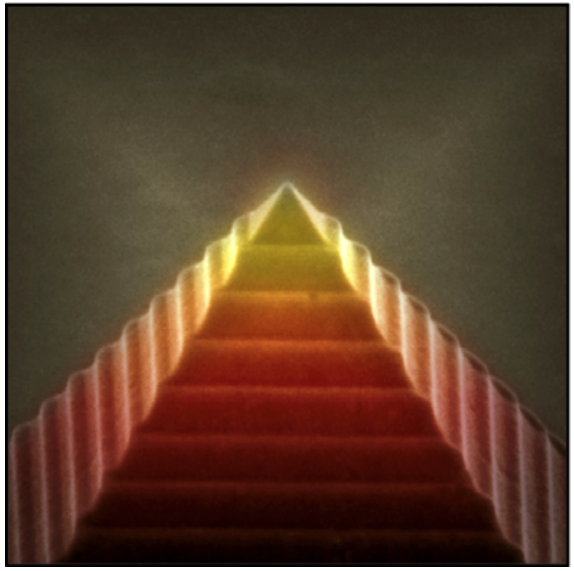
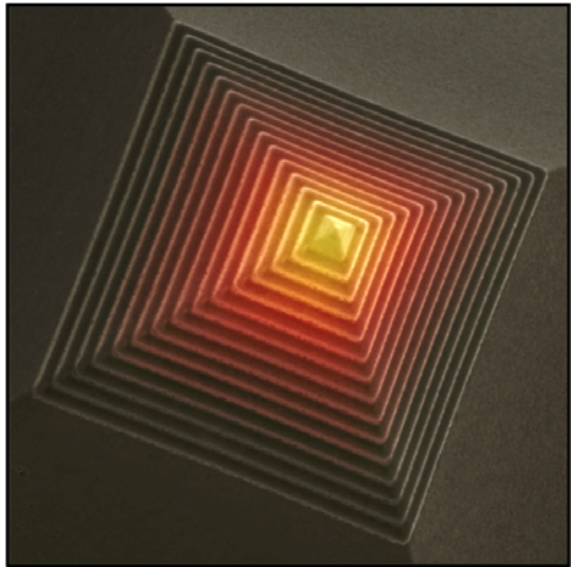
The Institute of OPTICS

Colloquium

UNIVERSITY OF ROCHESTER

Engineered plasmonic nanostructures for photonics and biotechnology





Prof. Sang-Hyun Oh

ECE, U. Minnesota Twin Cities

BS Physics, KAIST, Korea, 1996

PhD Physics, Stanford, 2001

Postdoc Bell Labs, UCSB

3:00 pm, Oct 24, 2011

Sloan Auditorium, Goergen 101

Refreshments served

The talk will describe nanofabrication methods to rapidly produce high-performance plasmonic devices, and demonstrate their utility in various applications such as protein biosensing, surface-enhanced Raman spectroscopy, tip-enhanced plasmonics, and sub-10 nm resolution lithography.

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HAJIM SCHOOL OF ENGINEERING & APPLIED SCIENCES

Engineered plasmonic nanostructures for photonics and biotechnology

Professor Sang-Hyun Oh

Department of Electrical and Computer Engineering

Laboratory of Nanostructures and Biosensing

University of Minnesota-Twin Cities

Abstract: Recent advances in nanofabrication enable unprecedented capabilities to engineer metallic nanostructures and harness surface plasmons. Enhancing light-matter interactions in optical nanostructures can benefit many applications in biosensing, imaging, spectroscopy, and photovoltaics. This presentation will focus on a series of nanofabrication methods, including focused ion beam (FIB) lithography, nano-imprint lithography, atomic layer deposition, and template stripping, to rapidly produce high-performance plasmonic devices, and demonstrate their utility in various applications such as protein biosensing, surface-enhanced Raman spectroscopy, tip-enhanced plasmonics, and sub-10 nm resolution lithography.

Biography: Sang-Hyun Oh obtained his BS degree in Physics from KAIST, Korea, and his PhD degree in Applied Physics from Stanford University, in 1996 and 2001, respectively. After postdoctoral research at Bell Laboratories in Murray Hill and at the University of California at Santa Barbara, he joined the University of Minnesota, Twin Cities, as an Assistant Professor of Electrical and Computer Engineering in 2006. He currently runs a lab focused on plasmonics, nanofabrication, microfluidic biotechnology. He is a recipient of the Young Investigator Award from the Office of Naval Research, DARPA Young Faculty Award, NSF CAREER Award, ACS Petroleum Research Fund Doctoral New Investigator Award, and 3M Faculty Award.