

MRSEC SEMINAR SERIES

“Nanoscale Porous Materials for Application in Chemical and Biomolecular Detection”



Porous materials offer several advantages for chemical and biomolecular sensing applications. In particular, nanoscale porous materials possess a very large reactive surface area to facilitate the capture of small molecules, and they have the capability to selectively filter out contaminant molecules by size. This presentation will discuss the fabrication, functionalization, and application of porous silicon waveguides and diffraction gratings, nanoporous gold SERS templates, and silicon photonic crystal microcavities for the detection of small chemical and

biological molecules. Issues of efficient molecule infiltration and capture inside porous materials, binding kinetics in nanoscale pores, the influence of pore size on small molecule detection sensitivity, and the nanoscale patterning technique of Direct Imprinting of Porous Substrates (DIPS) will be addressed.

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Monday, April 15, 2013

Tech K140

3:00 p.m.

NU-MRSEC

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