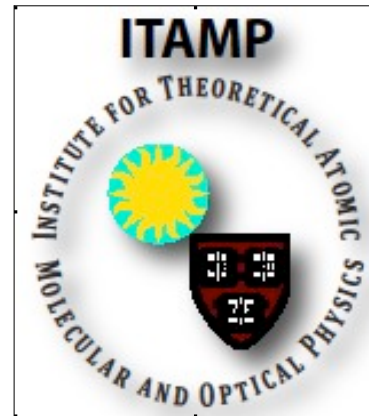




Harvard Quantum Optics Center



Joint Quantum Sciences Seminar

Wednesday, February 3, 4:00 pm
Jefferson 250

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Purdue University

“Practical Nanophotonics with Plasmonic Ceramics”

In recent years, two avenues of nanophotonics, namely plasmonics and metamaterials, have seen an explosion of novel ideas and designs that could provide breakthrough devices and exotic functionalities. However, transforming these concepts into practical devices requires a significant amount of effort. The constituent materials in these structures play a crucial role in realizing efficient devices. Similar to the way silicon shaped the nanoelectronics field, efforts toward finding the best set of materials for plasmonic and metamaterial devices could revolutionize the field of nanophotonics. As a potential solution, alternative plasmonic materials have recently gained significant attention. Metals, despite being essential components of plasmonic and metamaterial structures, pose many technological challenges toward the realization of practical devices—primarily due to their high optical loss, integration and fabrication limitations. Hence, searching for an alternative to metals is vital to the success of future nanophotonic devices. In this course, recent developments in the pursuit of better plasmonic materials will be outlined, and several classes of materials including transparent conducting oxides and plasmonic ceramics as potential alternatives to metals will be discussed as material platforms that provide low intrinsic loss, tunability and compatibility with standard semiconductor fabrication processes.

Guest Presentation will begin at 4:30 PM
Refreshments will be provided at 4:00PM