

SPIE Travelling Lecturer

Prof. Maiken Mikkelsen

“Hybrid Nanomaterials for Tailored Light-Matter Interactions”



Maiken H. Mikkelsen is the Nortel Networks Assistant Professor of Electrical and Computer Engineering and Assistant Professor of Physics at Duke University. Her research interests span ultrafast phenomena in artificially structured materials, nanophotonics, plasmonics, light-matter interactions in quantum confined structures, spin phenomena in the solid state, and quantum information science.

Abstract: New optical nanomaterials hold the potential for transformative breakthroughs in a wide range of areas from ultrafast optoelectronics such as modulators, light sources and hyperspectral detectors, to efficient upconversion for energy applications, bio-sensing and on-chip components for quantum information science – as well as serve as inspiration for entirely new technologies. Here, I will provide an overview of our recent research demonstrating tailored light-matter interactions by leveraging ultra-small plasmonic cavities fabricated using bottom-up techniques. Examples of our demonstrations include ultrafast spontaneous and single photon sources, perfect absorbers, plasmonic multispectral pixel arrays and combinatorial colors.

**Monday, October 23, BRK 2001 @ 11:30 AM
and a student lunch @ 12:30 PM**