



# Columbia University Optics Seminar



## “Optical Antennas for Enhanced Light-Matter Interactions”



**Prof. Lukas Novotny**

*The Institute of Optics and Department of Physics  
University of Rochester*

**Date/Time:** Monday, April 30<sup>th</sup>, 11 – 12 noon

**Location:** Interschool Lab, 750 Schapiro/CEPSR

**Abstract:** Optical antennas consisting of plasmonic materials provide extreme light localization and small mode volumes, thereby boosting the sensitivity and signal-to-noise ratio in applications ranging from single photon sources to photodetection. Optical antennas can also be employed to efficiently control and manipulate light on the nanometer scale and to achieve directional emission. I will review the physical properties of optical antennas, present recent results, and discuss applications.

**Bio:** Lukas Novotny is a Professor at the University of Rochester's Institute of Optics. He holds joint appointments with the Department of Physics and Astronomy and the Biomedical Engineering department. He is also a Distinguished Invited Professor at the Institut de Ciències Fòniques (ICFO) in Barcelona, Spain, and a Research Scientist at the Laboratory for Laser Energetics (LLE) in Rochester, NY.

Novotny did his diploma and doctoral degree in Electrical Engineering at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland. His doctoral work was in collaboration with the IBM Research Laboratories and dealt with theoretical problems in near-field optics, for which he was awarded an ETH Medal. Today, Novotny's research activities range from photovoltaics to biosensing, with special focus on localized light-matter interactions.

*Hosted by Prof. Richard Osgood • For further information: call 854-4462*