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**Radiation Tuning of Optical Nanoantennas for Design of Nanofilter Elements** MARJAN SABOKTAKIN, BRIAN EDWARDS, NADER ENGHETA, CHERIE KAGAN, University of Pennsylvania, PROF. KAGAN COLLABORATION, PROF. ENGHETA COLLABORATION — We experimentally and numerically explore the radiation characteristics of optical nanoantennas. These nanoantennas are dipole antennas with dimensions on the order of several tens of nanometers that are fabricated to form lumped capacitance and Inductance through the use of sandwich structures made of dielectric and plasmonic-material layers. We then investigate tuning the response of these optical nanoantennas by varying the material and/or thickness of the dielectric layer. After each experiment, experimental results are compared with numerical simulations to verify the validity of the results. We then exploit these characteristics in building a “lumped” nanofiltering device, and thereby extending the concept of antennas and circuit elements such as filters from the microwave regime to the visible regime.

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