

Abstract Submitted
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Nanoscale Near-Field Spectroscopic Imaging of Four Way Gold Bowtie Nano Antenna Structures¹ BRANDON HESSLER, RALPH DAMATO², TERRANCE DUNLAP, California State University Long Beach, JAMES SCHUCK³, University of California Berkeley and Lawrence Berkeley National Laboratory, YOHANNES ABATE⁴, California State University Long Beach — Nanometer-scale four way gold bowtie nano antenna structures, or “four-ties,” are imaged using scattering-type scanning near-field optical microscopy (s-SNOM) in the mid infrared frequency region. Bowties allow the focusing, manipulation, and steering of light on the nanoscale by making use of an enhanced and confined field in the gap of the nano antenna. The near-field distribution of these four way gold bowtie nano antenna structures show geometric and wavelength dependence as manifested in the amplitude and phase near-field images. Experimental results have also shown strong dependence of the field distribution on the polarization of the incident light.

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