

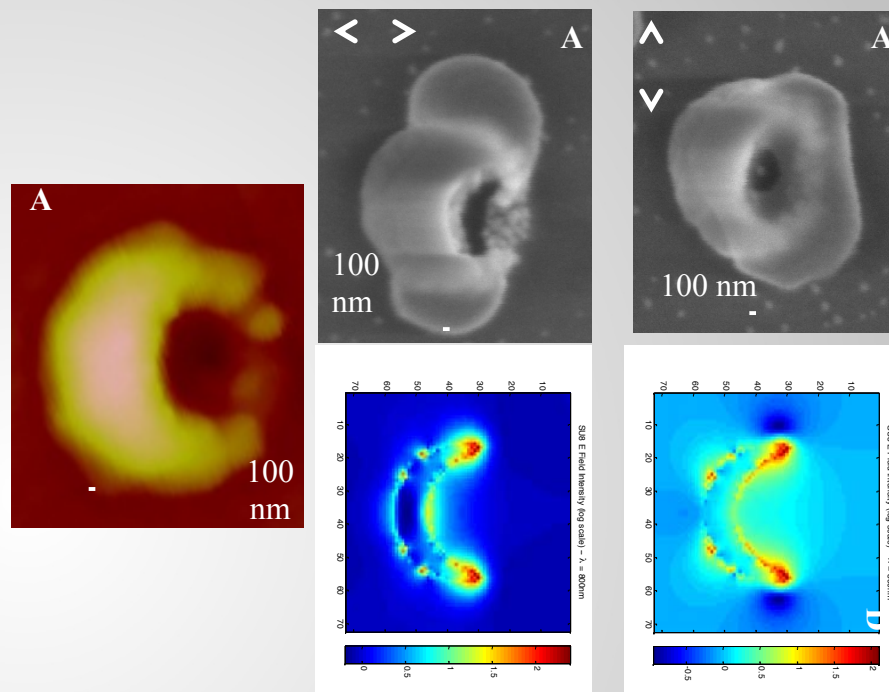
Photochemically Mapping the Near-Fields of Plasmonic Nanocrescents

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Objective: Use plasmon-enhanced photochemical reactions to map the polarization-dependent near fields of optical antennas.

Approach: Use the anisotropic nanocrescent structure and SU-8 photo-resist. SU-8 exposure accomplished through plasmon-enhanced multi-photon absorption by 800 nm light.

Results and Significance: Distinct anisotropic local-field patterns directly visualized through electron or AFM microscopy; patterns match simulation predictions. This is the first time field patterns of these structures have been mapped.



Left: AFM image of gold nanocrescent structure. **Middle column:** SEM image of nanocrescent under short-axis excitation after SU-8 resist development; calculated field pattern below. **Right column:** SEM image under long-axis excitation after resist development.



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