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Nano plasmonic Probe for Spatial Resolution Sensing. JANINA WIRTH, HANS HALLEN, SHUANG LIM, NC State University — Due to the lack of noninvasive in-vivo data collection techniques, most of the subcellular studies have been performed in-vitro. In contrast, experiments performed in vivo, such as at the single or cell population level, which studies biological phenomena in real time, better describes actual cell function. We aim to provide a proof of principle of a novel nano plasmonic probe that provides a spectral orientation and rotation sensitivite, label-free, noninvasive and high sensitive sensor. The proposed nanostructure exploits a nanogap in a partial-ring configuration that retains the advantages of small-gap antennas but increases the availability and detection volume compared to conventional plasmon-based designs. We will show first studies demonstrating the enhanced spectral fingerprints of chlorophyll b in the nanogap.

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