

**CONTROL ID:** 2889089

**TITLE:** Capturing Light: 3D solid mappings of near field intensity produced by plasmonic antennas

**Abstract Body:** Optical antennas (OAs) have found a place in modern technology due to their special properties including, among others, high concentration of electromagnetic fields in their proximity [1]. Analysis of the radiation patterns (RPs) generated by OAs is necessary to determine their possible applications. Until now, studies of such patterns have been made by fluorescent dyes or near field techniques, with inherent disadvantages of each technique, i.e. photobleaching and time consuming experiments [2]. Here, we show a methodological study of the three-dimensional radiation pattern produced by OAs, polymerized on SU8. This technique allows us to determine the geometrical characteristics of the RP without using perturbative probes that can eventually modify the main properties of such a RP. Comparison with numeric calculations implemented by FEM showed good agreement with the experimental results, demonstrating the feasibility of our approach.

[1] L. Novotny, et al. Nature Photon. 5, 83–90 (2011).

[2] D. Dregely, et al. Nature Comm. 5, 4354 (2014); R. M. Bakker, et al. Opt. Express, 15, 13682–13688 (2007).

**PRESENTATION TYPE:** Oral

**UNIT:** 22.0 APPLICATIONS (IT, Medical/Bio, Photonics, etc.) (FIAP)

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