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Field enhancement using quantum dot arrays

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The plasmonic nanostructures are widely used to design sensors with improved capabilities. The position of the localized surface plasmon (SP) resonance (LSPR) is a part of their characteristics and deserves to be specifically studied, according to its importance in sensor tuning, especially for spectroscopic applications. In the visible and infra-red domain, the LSPR of an array of nano-gold spherical is considered as a function of the diameter, and the thickness of substrate layer. In this paper, the new shapes of quantum dot arrays are used to enhance the photo physical properties of gold nano-particles (NPs). A study of the effect of NP's shape, arrays , and size on their absorption characteristics is presented.

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