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Plasmonics and thermoplasmonics properties of asymmetric hexagonal nanoparticles

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Abstract

In recent years, there has been a growing interest in the use of plasmonic nanoparticles as sources of heat remotely controlled by light, giving rise to the field of thermoplasmonics. To this end, gold nanoframes are unique nanomaterials with the intrinsic capability to generate a nanoscale confined light-triggered thermal effect. Therefore, the plasmonic and thermoplasmonic properties of the gold hexagonal nanoframes have been investigated in this paper. Moreover, the effect of some influential parameters such as gap distance between the two nanoparticles and the distance between the center of the cavities and the center of the nanoframes on the local electric field and the surface temperature of the nanoframes have been reported.

Keywords: Thermoplasmonics properties; surface plasmon resonance; nanoframes; hexagonal nanoparticles

For full article, refer to the Persian section