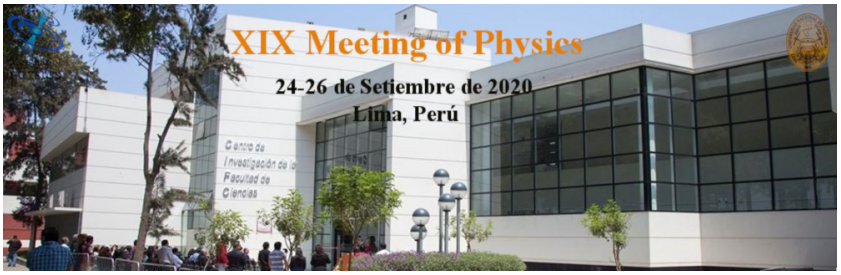

Contribution ID : **110** Type : **not specified**

Au-SiO2 Nanoshells operating at the First Biological Window.

Saturday, 26 September 2020 11:00 (30)

Metallic nanoparticles represent one of the most widely used nanostructures in biomedicine. This is due to the easy modification of its architecture tunable to their electrical properties, which are associated to their surface plasmon resonance (SPR). The SPR localizes the collective oscillation of conduction bands electrons, which when optically excited, generates an amplified electromagnetic effect that has led to great applications in biomedicine. Successful biomedical applications based on SPR, required to avoid biological damage triggered by photochemical effect.
Here, hollow Silica-gold nanoshells (Au:SiO2) optimized to absorbed in the first biological spectral window were synthetized. In this study, homogeneously distributed Au:SiO2 nanoshells were obtained, with a hydrodynamic radius of 243 ± 29 nm and an optical absorption from 550 to 900 nm. After 5 and 10 minutes of (850 nm) laser exposure of HeLa Cells incubated with Au:SiO2 PEGylated nanoshells, no significative photochemical damage was observed. These results indicate that these Au:SiO2 nanoshells are promising candidates for bio-applications operating at the first biological window. However, exhaustive cytotoxicity studies are needed.

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Session Classification : keynote talks