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## **Gold Nanostructures and Their Applications**

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Nanostructured metallic surfaces support surface plasmon (SP) excitations. The resonance conditions depend on the optical properties at the metal-dielectric interface. For instance, the monitoring of the shift of the surface plasmon resonance (SPR) due to molecular adsorption events is a well-established approach in biosensing. The SPR condition also leads to an increase in the electric field at the surface which can be explored for enhanced spectroscopy schemes, such as surface-enhanced Raman scattering (SERS). In this presentation, I will provide an overview of the recent advances from our group on the fabrication of metallic nanostructures, and discuss some of their applications.

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