



## Neuroengineering Seminar

# Nanoplasmonics in biomedical sciences and medicine



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**4:00-5:00pm**

**Fung Auditorium, Powell-Focht Bioengineering Building  
University of California San Diego**

Colloidal gold (AuNPs) and silver nanoparticles (AgNPs) are unique materials not only due to their plasmonic properties but also their possible applications in medicine and biomedical sciences. While their plasmonic properties can be used for sensing and thermal killing of cells and microorganisms, their biocompatibility and easy surface chemistry offer unique opportunities for their use as therapeutic or delivery agents. In this talk, I will summarize our effort to utilize the plasmonic properties of these nanoparticles in a range of applications. As a plasmonic technique, the utility of surface-enhanced Raman scattering (SERS) for microorganism and tissue discrimination first is discussed. The differentiation of healthy brain and tumor tissues is presented as an example to demonstrate the power of the technique. In the second part, the interaction of surface modified AgNPs with several cell lines, such as murine hypothalamic and 549, from the toxicity and therapeutic standpoint will be discussed.

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