

## **Internal Seminar**

### **Toward's Understanding the Hot electron Chemistry of Plasmonic Nanoparticles**

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In plasmon-enhanced heterogeneous catalytic reactions, illuminating visible light enhances the reaction rates by either generating hot electron carriers or by heating the lattice structures or both. This process greatly reduces the energy input requirements for the chemical transformations. In this work, Au nanoparticles coated on SiO<sub>2</sub> substrate were prepared and used as a plasmonic catalyst for H<sub>2</sub> and D<sub>2</sub> dissociation reaction forming HD as a product at room temperature and atmospheric pressure. Catalytic activity was clearly correlated with the illumination of the samples. The detection sensitivity of our setup was seen to increase with decrease in reaction chamber volume. This system provides an opportunity for systematic study of plasmon enhanced heterogeneous catalysis.

***Monday, Sep 30<sup>th</sup> 2019***

***2:30 PM (Tea/Coffee at 2:00 PM)***

***Seminar Hall, TIFR-H***