세미나 초록

발표주제	Artificial Photosynthesis with Plasmonic Catalysts
발표내용	Metal nanoparticles combine strong absorption of light with catalytically active surfaces, promoting activation and reaction of small molecules in the visible-frequency range. This process is attributed to localized surface plasmon resonances (LSPRs) that is the resonant oscillations of electrons in the nanoparticle. In this talk, we visit how LSPR excitation drives the transformation of photons into the chemical bonds in molecules. Upon LSPR excitation, transient but energetic carriers are stored in a nanoparticle, inducing a potential. The LSPR-induced potential serves as free energy for thermodynamically unfavorable reactions to occur, which often leads to new reaction pathways for different product branching. We will discuss plasmonic chemistry and catalysis for the production of renewable energy and fuels.