P29: Enhancing light matter interaction in monolayer MoS2 with patterned plasmonic nanostructures using two different configurations
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Monolayer molybdenum disulfide (MoS2) has intense attention in recent years for their unique optical properties. However monolayer MoS2 suffers from insufficient light matter interaction because of its atomically thin nature. Plasmonic nanostructures can be easily integrated and boost the light matter interaction of 2D TMDCs. In this study, we demonstrated the enhanced Photoluminescence of MoS2 using two different hybrid configurations of Au-MoS2. Reported results allow us to engineer optical properties of two dimensional materials.

P30: Tunable Reflector based on Metal/Insulator/Metal cavity with graphene
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We proposed the tunable reflector formed by graphene in Metal/Insulator/Metal cavity. The structure can control the reflectivity not only effectively by strongly confined electric fields but also sensitively by variable permittivity of graphene. Consequently, we can control the reflectivity by modifying the gate voltage of graphene.

P31: Ultrafast Transient Dynamics of Optical Loss Compensation in Aggregated Gain-Plasmon Polymeric Films
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We present a comprehensive study via transient absorption spectroscopy (TAS) to investigate ultrafast exciton-plasmon dynamics of hybrid aggregates consisted of core-shell quantum dots (QDs) and Au Nanoparticles (NPs) leading to optical loss mitigation. The results suggest modifying the way of analyzing the transient absorption spectra of loss mitigated systems. We show that appropriate choice of the pump wavelength and by changing the pump power we can conclusively prove the existence of loss mitigation using UTAS.

P32: Bright off-axis directional light harvesting with plasmonic corrugations
Alireza Rahimi Rashed[1], Hamed Sattari[2], Ekmel Ozbay[1], Humeyra Caglayan[1]
[1] *Bilkent University (Turkey),* [2] *Ecole Polytechnique Federale de Lausanne (Switzerland)*

We introduce a new plasmonic bulls-eye antenna to efficiently harvest the emitted light from diamond Nitrogen Vacancy (NV) centers. The designed structure shows a great performance even better than double-side corrugated structures. In addition, we study for the first time asymmetric structures to steer emitted beam in two-axis. Our results show that spatial off-axial steering angle over a cone is approachable by applying optimal asymmetries to grooves and ridges of the plasmonic antenna.

P33: Positional irregularities in nanowire metamaterials
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Irregularities in metamaterials are usually perceived to have detrimental impacts. Here, we demonstrate that positional irregularities also open up an innovative way to control the properties of interface waves between two layers of nanowire metamaterials.

P34: Fe3O4@Au Core-shell Nanoparticle with Suprastructure Au shell for SERS
Dong Kyu Lee, Van Tan Tran, Younseong Song, Jeonghyo Kim, Jaebeom Lee
Pusan National University (Korea)

Suprastructure like core-shell nanoparticle was synthesized under the wet chemistry environment. Fe3O4 was fully covered self-assembly of AuNPs on Fe3O4 nanoparticle which was observed by TEM. To form suprastructure like Au NP coating on Fe3O4 NPs, ion reducing method assisted with layer-by-layer (LBL) structure of AuNPs and PEI on the surface of Fe3O4 NPs were proceeded. This material was used as surface enhanced Raman scattering (SERS) substrate.

P35: Magnetoplasmonic core-shell Au@FeCo nanoparticles and their magnetic property compared with solid and hollow types