How to increase light-matter interaction in Graphene?

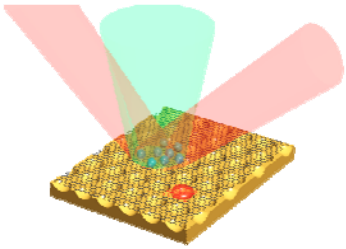
Supervisor: Bo-Hong Li, Sanshui Xiao and Niels Asger Mortensen

Project type: Bachelor or Master

Project area: DTU Fotonik, Nanophotonics Cluster, SEM

Project description:

Graphene has attracted lots of attention due to its remarkable electronic and optical properties, thus providing great promise in photonics and optoelectronics. However, the performance of these devices is generally limited by the weak light-matter interaction in graphene (only 2.3% absorption of light). This project is to enhance light-matter interaction in graphene by use of noble metal nanostructures.



In this project, your tasks could be focused on the following topics:

- Numerical evaluation of light-matter interaction in hybrid metal-graphene systems
- Nanofabrication of metallic nanostructures
- Chemical transfer of single-layer graphene
- Optical evaluation of the light-matter interaction in metal-graphene hybrid system.
- Raman signal from Graphene with or without metal nanostructures.

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