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## Plasmonic Effect on Graphene Metal Hybrid Films

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Self-assembled silver nanoparticles were synthesized on a graphene film to investigate plasmonic effect. Graphene was synthesized on glass substrate using chemical vapor deposition method and transfer process. Silver nanoparticles were formed using thermal evaporator and post-annealing process. The shape of silver nanoparticles was measured using a scanning electron microscopy. The resonance wavelength of plasmonic effect on graphene-silver nanoparticles was measured using transmittance spectra. The plasmon resonance wavelength was increased from 400 nm to 424 nm according to the lateral dimension of silver nanoparticles. Also we confirmed a strong plasmon effect from Raman spectra, which were measured on graphene-silver nanoparticles. The result shows that plasmon resonance wavelength could be controlled by lateral dimension of silver nanoparticles, and transparent conductive films based on plasmonic graphene could be developed.

**Keywords:** Plasmon, Graphene, Silver nanoparticle