Center for Soft Matter and Biological Physics

Discussion Meeting

Vinh Ho

(Physics, Virginia Tech)

"Broadband and High Responsivity Graphene-based Photodetectors at Room-temperature"

Friday, August 2, 2019

1:30pm - 2:30pm

304 Robeson Hall

Ability to covert light of graphene occurs in an ultra-broadband spectral range from violet to mid-infrared region, making graphene as desirable photodetectors for various technology applications in imaging, sensing, spectroscopy and tele-communication.
However, the low responsivity of graphene photodetectors about 10 mA/W, due to the ultra-fast recombination of photocarriers, limits their potential applications. Here, we have engineered the interface between graphene and dielectric films to introduce trapping centers. The interface layer efficiently convert the photon en-ergy into a large electrical signal. Thus, our graphene-based photodetectors have showed a high sensitivity up to 2 × 10^5 A/W together with a fast response time in a broadband spectral at room temperature.