

Weekly Seminar

(III-Se) and IISe/Graphene heterostructure Photodetectors

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Time: 4:00pm, June 3, 2015 (Wednesday)

2015 06 3

4:00

**Venue: Room W563, Physics Building, Peking University
W563**

Abstract

The 2D materials based optoelectronics devices are very attractive because of their unique dimensional dependent properties. We systematically investigate the dependence of the photoresponsivity on the spacing distance for the two-dimensional (2D) semiconductor based metal-semiconductor-metal (MSM) photodetectors in both the bottom and top Ti/Au contacted device configurations using layered GaSe and InSe. Through spatially resolved photocurrent measurements, we find that the photocurrent is mainly generated from the photoexcited carriers close to the metal-GaSe contacts and the photocurrent active region is always close to the Schottky barrier with higher electrical potential. A theoretical model has also been developed to well explain for the underlying physics for the photoresponse [1]. The response time can be further reduced down to a few hundreds of ns.