

The 134th MANA Special Seminar



Graphene: from synthesis to characterization and controllable doping

Chair: Dr. Katsunori Wakabayashi (MANA Independent Scientist)

Prof. Po-Wen Chiu

(Department of Electrical Engineering, National Tsing Hua University, Taiwan)

Graphene has received great attention in the both scientific community and industries due to its intriguing electronic and optoelectronic properties. The talk will be focused on material issues that include the synthesis and doping. In the first part, I will show that synthesis of individual thin graphene flakes by CVD in a more controllable manner. Individual thin graphene flakes (1-3 layers) can make up the great majority of the surface overlayers and distribute homogeneously. I will also discuss whether the Raman technique is justified for layer identification in grown graphene. In the second part, I will show that post-growth doping by means of defect engineering is a highly flexible and manufacturable process for graphene electronics. The amount of charge transfer to graphene can be fine tuned and monitored by the systematic shift of the Raman G mode and the G_{ds} - V_g curves in transport measurements. The approach provides not only a better control over the doping density but also the compatible processing flow with state-of-the-art silicon technologies.

Venue: Seminar Room #431, MANA Bldg.

Date: Mar. 18th Thursday Time: 15:30-16:15

Contact: International Center for Materials Nanoarchitectonics (MANA), Nakata (ex. 8806)

