

## **Surface property change of graphene using nitrogen ion**

**Ki-jeong Kim<sup>1,2</sup>, Junghun Choi<sup>1</sup>, Hangu Lee<sup>3</sup>, Hangil Lee<sup>2</sup>, M. C. Jung<sup>2</sup>, H. J. Shin<sup>2</sup>,  
Tai-Hee Kang<sup>2</sup>, Bongsoo Kim<sup>2</sup>, Sehun Kim<sup>1</sup>**

<sup>1</sup>KAIST, <sup>2</sup>PAL, <sup>3</sup>POSTECH

Graphene is a single layer of carbon atoms densely packed into a benzene-ring structure. Because the carrier density of graphene layer can be controlled by doping metals and molecules, it is important to characterize surface property and electronic structure change on the graphene. But, graphene surface is very stable, the molecules cannot be easily adsorbed on the graphene surface. There are many efforts to functionalize the surface. Among them, we introduced the nitrogen ions to modify the graphene surface and its property changes were investigated. Graphene layer grown on 6H-SiC(0001) were irradiated with 300 eV nitrogen ions. Surface property changes were studied using photoemission spectroscopy(PES), near edge X-ray adsorption spectroscopy(NEXAFS) and atomic force microscopy(AFM). N 1s core-level spectra show that three kinds of nitrogen species were existed on the nitrogen ion implanted graphene surface.