ST-P019

Photoinduced Chemical Linking of Difluoride Molecules with Graphene

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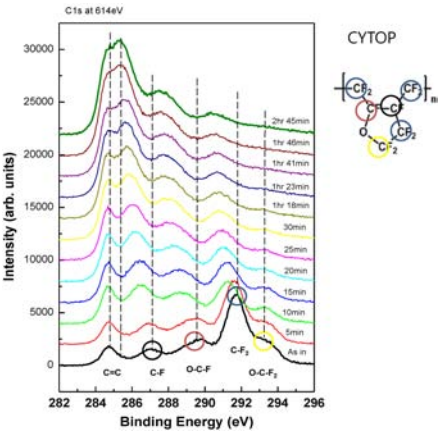
Many efforts have been devoted on chemical modification of graphene layer to modulate its electrical properties. In the previous report, laser irradiation on the CYTOP(perfluoro-polymer) doped graphene layer induces chemical modification of it, resulting in the insulating I-V characteristics. While the results strongly denoted C-F bond formation after irradiation, the detailed process of photo-induced chemical change is not known yet. To probe this, we utilized synchrotron based SPEM (scanning photoelectron emission spectroscopy) in NSRRC, Taiwan. We irradiate the sample by photon of 614 eV in a stepwise manner as a function of time. As photon irradiation increased, difluoride moieties in the CYTOP was broken, and then formed mono-fluoride with carbon atoms consisting graphene layer.



Keywords: CYTOP, Photon, difluoride, monofluoride

ST-P020

Study of Plasma Treatments to Increase Work Function of Multilayer Graphene Film

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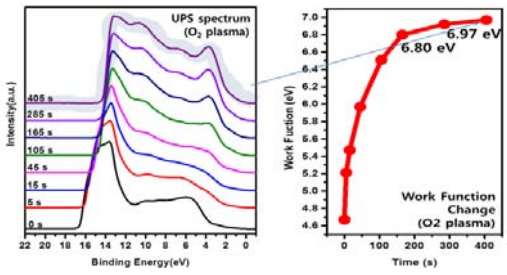
We investigated change of the electronic structure, chemical states and elements ratio in graphene film by using photoelectron spectroscopy (PES). The graphene electrode has attracted considerable interest due to its possible applications in flexible organic light emitting diodes (F-OLEDs). However, to use the graphene for OLEDs, sufficient increase of work function is required, that is related with hole injection barrier. Plasma treatment is one of the most widely used method in OLEDs to increase the work function of the anode such as indium tin oxide (ITO). In this work, we used the plasma treatment, which is generated by various gas types such as O2, and Ar to increase the work function of the graphene film. From these results, we discuss the relation among the change of work function, plasma power, plasma treatment time and gas types.



Keywords: Graphene, Plasma Treatment, Work Function, Interface, OLED