



Contribution ID: 55

Type: **Poster**

Low Temperature Reduction of Graphene Oxide by Plasma Processes

Thursday 25 May 2017 17:10 (50 minutes)

Graphene oxide (GO) is graphene sheet laced with oxygen-containing functional groups that located at edge of the lattice. The properties of GO can be modified depending on the degree of reduction of oxygen-containing functional groups. Typical methods to reduce GO include wet chemical processes and thermal annealing in which hazardous chemical substances and high temperature are applied. In this work, plasma processes are conducted to reduce GO. GO films on silicon substrates are exposed to argon plasma generated by a radio frequency (RF) discharge. By superimposing pulsed negative voltage at 5 kV to the substrate holder, argon ions in the plasma can be accelerated to interact with GO. The duty cycle of the pulse will be varied therefore GO samples undergo plasma treatment and ion implantation alternately. Changes in atomic compositions and structure are analyzed using X-ray photoelectron spectroscopy, atomic force microscope and Raman spectroscopy. Reduced GO can be obtained with a hybrid process at low temperature.

Primary author: Mr SOONTHORNNANT, Krisada (Department of Physics and Materials Science Faculty of Science, Chiangmai University Chiangmai, Thailand)

Co-author: Dr CHAIWONG, Chanokporn (Department of Physics and Materials Science Faculty of Science, Chiangmai University Chiangmai, Thailand)

Presenter: Mr SOONTHORNNANT, Krisada (Department of Physics and Materials Science Faculty of Science, Chiangmai University Chiangmai, Thailand)

Session Classification: Poster Presentation II

Track Classification: Material Physics and Functional Materials