Seoa Jeon et al., Int J Mater Sci Res. 2018
http://dx.doi.org/10.18689/2638-1559.a2.004

Tracking of Doping Status in Graphene Memory Device

Seoa Jeon[1]*, Woo Young Kim[1,2], Shenawar Ali Khan[2] and **Sheik Abdur Rahman[2]**
[1]Department of Electronic Engineering, Jeju National University, Republic of Korea
[2]Jeju National University, Republic of Korea

Graphene is a unique two-dimensional material whose electrical and optical properties can be changed by doping concentration. Therefore, to measure the doping concentration of graphene, a method of measuring the electrical resistance value or the light transmittance and converting it into a doping concentration has been mainly used. In this paper, doping concentration of graphene was observed in real time using Raman spectroscopy. In the Raman spectroscopy, there is a unique trend in the position of G peak and 2D peak and relative intensity change as graphene doping concentration changes. From the analysis, it was confirmed that the graphene used in the experiment was initially doped with p-type and that the doping type did not change within the measurement range. In general, the tendency of G peak and 2D peak was similar to that of the previous literature, but the tendency of the ratio of the two peaks and the full-width-half-maximum of the G peak were different.

Biography:

Ms. S. Jeon is an undergraduate student at Jeju National University in Korea, and her research interests are semiconductor memory devices. Mr. S. A. Khan and Mr. S. A. Rahman are graduate students in master course. Prof. Dr. W. Y. Kim is an assistant professor at Jeju National University in Korea since 2017. His research fields include applications of ferroelectric polymer and graphene process.