Perspectives and Challenges in Graphene Sensors

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Abstract

Graphene has attracted a great deal of interest in the field of sensor research around the world due to its extraordinary properties such as ultrahigh charge carrier mobility, large surface area, high optical transmittance, and excellent biocompatibility among others. When this research is translated into applications graphene could have a large impact in various industries and markets such as healthcare, automotive, mobile phones, etc. since the use of sensors is ubiquitous and their market is constantly expanding. However, for this to occur there are many milestones that have to be achieved such as graphene manufacturing (growth and transfer) and device fabrication at industrially relevant wafer scales, before moving component fabrication and system integration into the final product.

During this talk, I will cover the fabrication of graphene at wafer scale and its integration into various types of sensors including ion sensors (ISFETs) [1-3], gas sensors [4], MEMS [5, 6] and biosensors.

References

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