

Graphene Integration in Industry

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Abstract

In the past few years graphene is showing great promise in sensors [1-2], biosensors, photonics and optoelectronics [3]. In order for graphene to be implemented into commercial products wafer scale manufacturing is required not only for the material but also for the device fabrication and quality control methods. The most promising and established large scale production method for graphene is CVD. Although many attempts have been focused in the direct growth of graphene on insulating substrates, the quality and uniformity are not good enough for applications and growth on catalyst substrates is required with the subsequent transfer process. Nevertheless, transferred graphene has already demonstrated that it has the needed quality for many applications. The main challenge now relies on obtaining wafer scale uniformity at the graphene and at the device level. In addition, the development of the right encapsulating layers, graphene adhesion to the various application substrates, etc. are other remaining unsolved technical challenges. The importance of developing the full value chain for the various applications should also be highlighted. During this talk, I will cover the various aspects for the successful integration of graphene in industry.

References

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