
Recent Progress in Graphene Synthesis and Application

Byung Hee Hong

Department of Chemistry, SKKU Advanced Institute of Nanotechnology (SAINT) and Center for Human Interface Nano Technology (HINT), Sungkyunkwan University, Suwon 440-746, Korea.

Graphene has been attracting much attention owing to its fascinating physical properties such as quantum electronic transport, a tunable band gap, extremely high mobility, elasticity, thermal conductivity, mechanical strength and so on. There have been many efforts to utilize these outstanding properties of graphene for macroscopic applications such as transparent conducting films useful for flexible/stretchable electronics. However, the scale and the quality graphene need to be further enhanced for practical applications by developing more efficient synthesis, transfer, and doping methods. In this tutorial, the recent advances in graphene synthesis and applications will be reviewed, and discuss the future directions of graphene research.

[1] S. Bae et al. *Nature Nanotech.* 5, 574 (2010).

[2] K. S. Kim et al. *Nature* 457, 706 (2009).

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