

Production and Applications of Graphene for Large-Area Electronics

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Graphene has been attracting tremendous attention owing to its fascinating physical properties including quantum electronic transport phenomena, ultrahigh mobility, superb elasticity, thermal conductivity and mechanical strength. 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 talk, the recent advances in large-area graphene synthesis/doping/transfer will be reviewed first, and the various applications to graphene-based large-area electronics will be discussed.

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

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