

Growth of graphene triangles and stripes on Si-face SiC (0001)

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Graphene on silicon carbide (SiC) has a potential for technological application devices. The electronic properties of graphene in nanometer scale are significantly influenced by morphology, edge structures and so on. In this report, we have studied the growth of the epitaxial graphene on silicon-terminated SiC (0001) by annealing the SiC substrates in ultra-high vacuum and various types of inert gas (He, Ne and Ar) at pressure of 0.05 atm. Striped graphene islands are often observed at the step edge of all samples but the triangular graphene islands are only found on the SiC surfaces which contain wide terraces ($> \sim 1.5$ micrometer). Shape of graphene islands and zigzag edge type of triangular graphene islands were revealed by scanning electron microscope and reflection high-energy electron diffraction. Moreover, the growth mechanism of the triangular graphene islands is emphasized.

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