Comparative study of conventional and quasi-freestanding epitaxial graphenes grown on 4*H*-SiC substrate

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The structural and some other characteristics of quasi-freestanding single-layer graphene obtained by annealing of the buffer layer in the flow of hydrogen are studied in comparison with those of conventional epitaxial graphene. The high structural quality and good lateral uniformity of the thus-obtained graphene film are checked and confirmed by the use of such techniques as Raman spectroscopy, atomic force, and Kelvin probe force microscopies. The confirmation of its single-layer and freestanding character is obtained via the analysis of respective data of *X*-ray photoelectron spectroscopy.

Keywords: silicon carbide, graphene, KPFM, Raman spectroscopy, XPS.

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