

Silicon Carbide Laser Annealing as a New Route for Graphene Layers Synthesis and Processing

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Abstract

We report on our preliminary results about the possibility of using a laser-assisted annealing process for silicon carbide graphitization with the aim to obtain graphene, few layers graphene (FLG) and / or graphite from thermal decomposition of the polar surfaces of 4H - silicon carbide (4H-SiC).

Experimental characterisations were performed by Field Emission Scanning Electron Microscopy (FESEM), Raman and X-rays Photoelectron Spectroscopy (XPS).

Laser annealing in Ar atmosphere has permitted the formation of a nano crystalline graphitic phase on SiC C-face. Raman and XPS analyses show the possible presence of graphene.

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