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Chemical Etching of Copper Foils for Single-Layer Graphene Growth by Chemical Vapor Deposition

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Abstract

Chemical etching on copper surface is essential as a pre-treatment for single-layer graphene growth by chemical vapor deposition (CVD). Here, we investigated the effect of chemical etching treatment on copper foils for single-layer graphene CVD growth. The chemical etching conditions, such as the type of chemical etchants and the treatment time, were found to strongly influence the graphene domain size. Moreover, a drastic change in the layer structure of graphene sheets, which was attributed to the surface morphology of the etched copper foil, was confirmed by graphene transmittance and Raman mapping measurements.

Keywords

Chemical etching, Single-layer graphene, Chemical vapor deposition, Copper foil, Surface morphology

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