Synthesis and Characterization of Graphene/Carbon Nanofibers Composites

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In this work, the synthesis of carbon nanofibers on graphene oxide surfaces by catalytic chemical vapor deposition. The graphene/carbon nanofibers composites were synthesized by chemical vapor deposition with mesoporous silica film as the support of metal catalysts. The homogeneous deposition of Fe has been investigated for the uniform growth of nanostructured carbon nanofibers. The chemical compositions and microstructures of the prepared film surface were also investigated by using N_2 /77 K full isotherms, XRD, EDX, SEM, and TEM. The results indicated that the carbon nanofibers with a diameter between 30 and 100 nm were grown uniformly and densely on graphene oxide surfaces.