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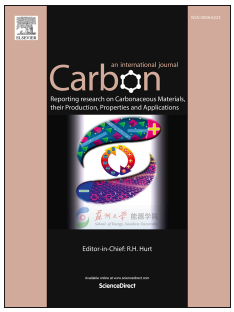

Correlation in Structure and Properties of Highly-porous Graphene Monoliths Studied with a Thermal Treatment Method

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Abstract: We prepared high surface area nanoporous graphene by reduction and KOH activation of graphene oxides and then heat-treated the nanoporous graphene up to 3073 K in Ar. The surface area of thus-prepared samples decreased remarkably from 1560 m^2g^{-1} to 10 m^2g^{-1} according to the subtracting pore effect (SPE) method. The transmission electron microscopic (TEM), X-ray diffraction (XRD), Raman spectroscopy and N_2 adsorption isotherms at 77.4 K clearly illustrate the evolution of morphology, crystallinity and porosity during the graphitization