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A Method of Bio Macromolecule Sol Processor to Prepare Graphene Aerogel

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Graphene has an outstanding performance in electrical conductivity and sufficient mechanical strength, practically a three-dimensional graphene aerogel network structure can multiple its extraordinary performance and contribute to the specific application. However, current production technology of graphene aerogel, boiling method highly relies on deoxidization of graphene oxide aerogel which result in a high cost and a waste of energy. Here we introduce a sol-gel approach based on a bio macromolecule predecessor to synthesize a 3D graphene network which consists of cosmically produced graphene decorated by surfactant and be filled in bio macromolecule aerogel. Such a graphene configuration provides a porosity-manageable aerogel, huge accessible surface area and good mechanical elasticity. The 3D graphene network thus avoid the extra cost and waste in energy and start a bright prospect of the industrial application of graphene, for instance, high efficiency porous catalyst, absorption materials, high-energy electrochemical capacitors, as highlighted in our work