

N-doped Macroporous Graphene-Encapsulated Mesoporous Metal Oxide

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In this work, general synthetic method of mesoporous metal oxide@N-doped macroporous graphene composite is reported. Electrostatically co-assembled amine functionalized mesoporous silica/metal oxide composite and graphene oxide are heat-treated and subsequent silica removal simultaneously produces mesoporous metal oxide and N-doped macroporous graphene. Through this simple approach, representative four mesoporous metal oxides (WO_3 , Co_3O_4 , Mn_3O_4 and Fe_3O_4) are successfully encapsulated in N-doped macroporous graphene.