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Co-Reduction Synthesis of Graphene/Au Nanocomposite from Graphene oxide/Au3+ Solution upon y-Irradiation

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A facile method for reducing graphite oxide (GO) using γ -irradiation is explored without using any photocatalysts or reducing agents. The obtained reduced graphene oxide (r-GO) is investigated by XRD, TEM, FT-IR. Various spectroscopic and imaging techniques confirm that most of the chemical functional groups present on GO are removed by irradiation, and Au nanoparticles are deposited on r-GO sheets which prevents the aggregation of Au nanoparticles. The size of nanoparticles increases with increasing Au3+ doping level. Moreover, the catalytic activity of the r-GO/Au nanocomposites is also investigated.

Country/Organization invited to participate

China

Primary author: Mr CHEN, Jiafu (University of Science and Technology of China, China)
Co-author: Mr LIU, Wenqi (University of Science and Technology of China, China)
Presenter: Mr CHEN, Jiafu (University of Science and Technology of China, China)
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