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## Co-Reduction Synthesis of Graphene/Au Nanocomposite from Graphene oxide/Au<sup>3+</sup> Solution upon $\gamma$ -Irradiation

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A facile method for reducing graphite oxide (GO) using  $\gamma$ -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 Au<sup>3+</sup> doping level. Moreover, the catalytic activity of the r-GO/Au nanocomposites is also investigated.

### Country/Organization invited to participate

China

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