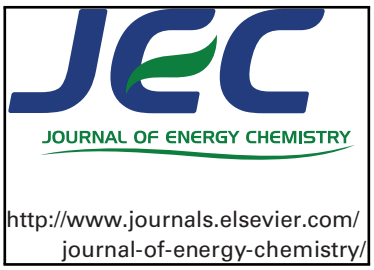


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# Graphene-wrapped $Ag_3PO_4/LaCO_3OH$ heterostructures for water purification under visible light

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**Abstract**

We demonstrated a unique synthesis approach of graphene (GR)-wrapped $Ag_3PO_4/LaCO_3OH$ (APO/LCO) heterostructures by an in-situ wet chemical method. FESEM analysis reveals the formation of rhombic dodecahedrons of APO decorated with LCO and later wrapped with GR flakes. Optical studies shows two absorption edges corresponding to the band gap energies of APO (2.41 eV) and LCO (4.1 eV). Considering the absorption edge of the heterostructures in the visible region, the photocatalytic activities