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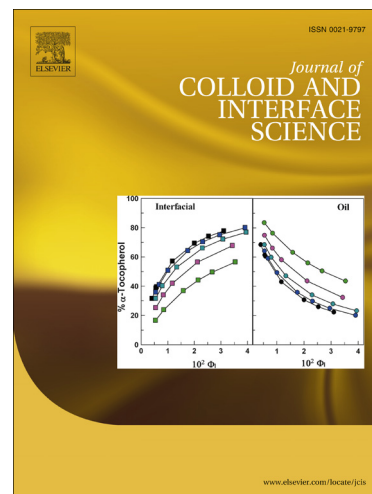
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**A facile one-step solvothermal synthesis of BiPO₄-graphene nanocomposites
with enhanced photocatalytic activity**

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Abstract

A facile one-step solvothermal approach was developed to synthesize BiPO₄-graphene (BP-RGO) nanocomposites using ethylene glycol/water as the solvent and reducing agent. During the solvothermal reaction, both the effective reduction of graphene oxide (GO) and the growth of rod-shaped BiPO₄ as well as its deposition on graphene occurred simultaneously. The as-obtained BP-2%RGO nanocomposite showed the highest photocatalytic activity towards the photodegradation of methyl orange (MO), which was about 2.0 and 1.5 times as high as that of pure BiPO₄ and physical mixture of BiPO₄ and graphene, respectively. The enhanced photocatalytic activity of BP-2%RGO nanocomposite is attributed to a larger surface area, much increased adsorption capacity, and more effective charge transportations and separations arisen from the introduction of graphene along with the intimate interfacial contact between BiPO₄ and graphene. This work highlights the

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