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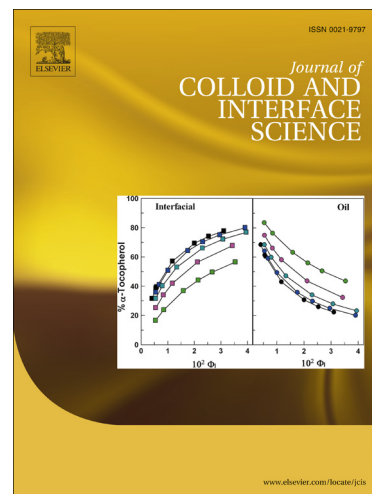
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Studies of heavy metal ion adsorption on Chitosan/Sulfydryl-functionalized graphene oxide composites

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ABSTRACT: Chitosan/Sulfydryl-functionalized graphene oxide composite (CS/GO-SH) was successfully synthesized via covalent modification and electrostatic self-assembly. A facile diazonium chemical process was developed to fabricate sulfydryl-functionalized graphene oxide (GO-SH) by introducing sulfydryl compounds to the graphene oxide sheets (GO), and the GO-SH was used to self-assemble with chitosan via an electrostatic interaction. The chemical structure and morphology of the CS/GO-SH composite were characterized by Fourier transformed infrared, Raman spectroscopy, scanning electron microscopy, X-ray powder diffraction and thermogravimetric examination. The results indicated that the CS/GO-SH was a new type of composite with multifunctional groups such as -OH, -COOH, -SH and -NH₂. Simultaneously, the self-assembly of chitosan with GO-SH sheets changed the blocky structure of the CS to the loosely packed structure which is analogous to graphene

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