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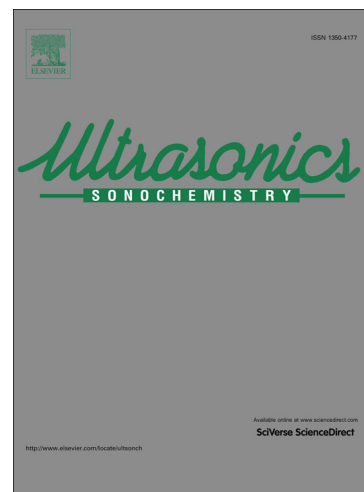
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Sonochemical Synthesis of Amide-functionalized Metal-organic Framework/Graphene Oxide Nanocomposite for the Adsorption of Methylene Blue from Aqueous Solution

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Abstract:

Graphene oxide-[Zn₂(oba)₂(bpfb)]·(DMF)₅ metal-organic framework nanocomposite (GO-TMU-23; H₂oba = 4,4'-oxybisbenzoic acid, bpfb = N,N'-bis-(4-pyridylformamide)-1,4-benzenediamine, DMF = N,N-dimethylformamide) is prepared through a simple and large-scale sonochemical preparation method at room temperature. The obtained nanocomposite is characterized by Field Emission Scanning Electron Microscopy (FE-SEM), powder X-ray diffraction (PXRD) and FT-IR spectroscopy. Additionally, the absorption ability of GO-TMU-23 nanocomposite toward cationic dye methylene blue was also performed. Significantly, GO-TMU-23 nanocomposite exhibits remarkably accelerated adsorption kinetics for methylene blue in comparison with the parent materials. The adsorption process shows that 90% of the dye has

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