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Natural Polysaccharide Based Graphene Oxide Nanocomposites for Removal of Dyes from Wastewater: A Review

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Abstract

This article discusses the potential applications of natural polysaccharide-based graphene oxide nanomaterials in the field of wastewater remediation through the removal of organic and synthetic dyes. Being highly toxic, carcinogenic, and nonbiodegradable, dyes disposed from textile, paper, and printing industries etc. pose a serious threat to various life forms on earth. Recently, there has been an increased interest in the amalgamation of biopolymers, such as polysaccharides, with the high adsorption efficiency of graphene oxide. Polysaccharides, apart from being nontoxic, low cost, and eco-friendly, possess a variety of functional groups enabling them to be easily tuned for the desired applications. When grafted with GO nanosheets, they give rise to unique nanomaterials possessing diverse applications, especially in the eradication of harmful contaminants from wastewater. This review is an attempt to give consolidated and detailed information on different aspects of the adsorption behavior of various potentially low-cost polysaccharide-based GO

