



Review on adsorptive removal of metal ions and dyes from wastewater using tamarind-based bio-composites

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Abstract

Large-scale industrialization and urbanization have led to such an alarming level of water contamination throughout the world that wastewater management has become one of the major global challenges attracting much research attention in recent times. Various techniques have been adopted for the treatment of polluted water among which adsorption has been preferred on a larger scale by virtue of its ease and cost-effective nature. This review highlights the efficiency of tamarind-based nanocomposites as potential adsorbents for a varying range of harmful organic and inorganic water pollutants including metal ions, fluoride ions and numerous kinds of dyes. A comprehensive analysis of fabrication routes, adsorption isotherms, kinetic and thermodynamic modeling as well as the adsorption mechanism and recyclability of these adsorbents is being presented in this work. In addition, various factors affecting the adsorption behavior such as pH, amount of adsorbent, concentration of