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Review

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Biochar-based nano-composites for the decontamination of wastewater: A review

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Abstract

Synthesizing biochar-based nano-composites can obtain new composites and combine the advantages of biochar with nano-materials. The resulting composites usually exhibit great improvement in functional groups, pore properties, surface active sites, catalytic degradation ability and easy to separation. These composites have excellent abilities to adsorb a range of contaminants from aqueous solutions. Particularly, catalytic material-coated biochar can exert simultaneous adsorption and catalytic degradation function for organic contaminants removal. Synthesizing biochar-based nano-composites has become an important practice for expanding the environmental applications of biochar and nanotechnology. This paper aims to review and summarize the various synthesis techniques for biochar-based nano-composites and their effects on the decontamination of wastewater. The characteristic and advantages of existing synthesis methods are summarized and discussed. Application of biochar-based nano-composites for different contaminants removal and the underlying mechanisms are reviewed. Furthermore,

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