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Characterization of engineered corn cob biochar produced in allothermal pyrolysis reactor

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Abstract

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Abstract

Biochar production has been explored wisely through different reactors and resulted in higher biochar yield with better quality. Besides the comprehension of production parameters, allothermal reactors has been less explored in terms of biochar production and its potential characteristics after activation. The current study presents the production of corn cob biochar in self-fabricated allothermal reactor and understanding its characteristic features. Corn cob biochar yield of 46.8% with fixed carbon content of 83.9% has been obtained. The produced biochar was modified using magnesium chloride and ferric chloride to produce the engineered biochar. The modified biochar possess numerous pores along with metal complexed and positive functional groups that could adsorb negative charged contaminants and serve as a better soil amendment. © 2021 Elsevier Ltd. All rights reserved.

Author keywords

Allothermal reactor; Biochar; Characteristics; Metal complexation; Soil amendment

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