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Agricultural biomass-derived magnetic adsorbents: Preparation and application for heavy metals removal
(2017) *Journal of the Taiwan Institute of Chemical Engineers*, 78, pp. 168-177. Cited 103 times.

DOI: 10.1016/j.jtice.2017.05.023

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Abstract
This paper discusses the synthesis of magnetic adsorbents from agricultural waste and their applications in heavy metals removal. The general methods for preparing magnetic adsorbents and the mechanisms of heavy metal sorption are also reviewed in detail. These mechanisms are related to the utilization of magnetic adsorbents, particularly sugarcane bagasse in heavy metals removal, such as nickel, cadmium, lead, and arsenic. Converting sugarcane bagasse into magnetic adsorbents could solve environmental problems, such as agricultural waste and water pollution. A brief summary of the synthesis of magnetic biochar from sugarcane bagasse and its applications in heavy metals removal is also presented. Thus, this study proposes magnetic-based materials as potential candidates for wastewater treatment, and this adds new dimensions to numerous applications of the carbon family. © 2017 Taiwan Institute of Chemical Engineers

Author Keywords
Adsorbent; Heavy metals; Magnetic biochar; Magnetic nanoparticles

Index Keywords
Adsorbents, Agricultural wastes, Agriculture, Bagasse, Carbon, Heavy metals, Magnetism, Metal nanoparticles, Nanoparticles, Wastewater treatment, Water pollution; Agricultural biomass, Bio chars, Environmental problems, Heavy metals removals, ITS applications, Magnetic adsorbents, Magnetic nano-particles, Sugar-cane bagasse; Nanomagnetics

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Publisher: Taiwan Institute of Chemical Engineers

ISSN: 18761070
Language of Original Document: English
Abbreviated Source Title: J. Taiwan Inst. Chem. Eng.
2-s2.0-85021182121
Document Type: Article
Publication Stage: Final
Source: Scopus