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REMOVAL OF PB^{2+} FROM AQEOUS SOLUTION USING ALKALLY ACTIVATED HYDROCHAR OF THE SPENT MUSHROOM SUBSTRATE

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ABSTRACT

In this study, the adsorption capacity of Pb^{2+} removal from aqueous solution was examined by hydrochar of the spent mushroom substrate. In order to improve the adsorption capacity, hydrochar was previously activated with 2M KOH. The obtained results demonstrated that alkally activation increased the sorption capacity from 36 mg g^{-1} to 74 mg g^{-1}. Structural characterization of activated and inactivated hydrochars were performed by FTIR analysis. Toward to obtained results of FTIR analysis, the increased of the oxygen functional groups (OFG) in activated hydrochars was perceived, which is contributed to the increase in the adsorption capacity of this carbonized material. Results indicated that spent mushroom substrate can be converted into hydrochar as a perspective sorbent for removal of Pb^{2+}.

Keywords: Hydrochar, Pb^{2+}, Alkally activation.