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Study on adsorption for Pb^{2+} of red mud sintering-expanded haydites

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ABSTRACT

Red mud is discharged as waste during the production of alumina from bauxite. Many approaches were reported to utilize it as a resource for an environmentally friendly application. The aim of the present study was to use Bayer red mud as the main ingredient for the preparation of red mud sintering-expanded haydite (RM-SEH), thereby acting as a kind of adsorbent. The results show that an adsorption efficiency of Pb^{2+} up to 93% can be achieved in static batch adsorption experiments by dosing 2 g/25 mL RM-SEH into 50 mg/L $Pb(NO_3)_2$ aqueous solutions at pH 5.40 with an adsorption time of 6 h.