

Layered Double Hydroxides Mg/Fe Intercalated H-3[alpha-PW12O40]center dot nH(2)O as Adsorbent of Cadmium(II)

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<b>Abstract</b>	Intercalation of Mg/Fe layered double hydroxides with H-3[alpha-PW12O40]center dot nH(2)O was successfully conducted. Characterization was carried out using FTIR and XRD analyses. Material was used as adsorbent of cadmium (II) in aqueous medium. Adsorption was studied through pH system, adsorption time, concentration of cadmium(II), and temperature. XRD analysis showed that Interlayer distance of Mg/Fe layered double hydroxides was increased after intercalation with H-3[alpha-PW12O40]center dot nH(2)O from 4.39 angstrom to 4.75 angstrom. Unique vibration of Mg/Fe before and after intercalation was found at wavenumber 1381 and 1635 cm <sup>-1</sup> . Analysis of PZC showed that pH PZC of Mg/Fe layered double hydroxides and intercalated material was 9 and 8. Adsorption of cadmium(II) using Mg/Fe layered double hydroxides and intercalated material showed that intercalated material has better adsorption properties than Mg/Fe layered double hydroxides.
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