

The effect of the divalent metal on the intercalation capacity of stearate anions into layered double hydroxide nanolayers

ABSTRACT

A comparison has been made of the intercalation capacity of the stearate anions into the two different anionic clays: magnesium aluminum layered double hydroxide (Mg₃Al LDH) and zinc aluminum layered double hydroxide (Zn₃Al LDH). The anionic clays Mg₃Al LDH and Zn₃Al LDH were firstly prepared by co-precipitation method from nitrate salts solution and then modified by stearate anions through an ion exchange reaction. The properties, morphologies and ion exchange ability of these two clays have been studied by XRD, TGA, SEM, TEM and CHNS that show the ability of Zn₃Al LDH to capture stearate anions is greater than Mg₃Al LDH.

Keyword: Layered double hydroxide; Comparison; Intercalation capacity; Elemental analysis; Thermogravimetric analysis