Synthesis and study of some physicochemical properties of a new double layered hydroxide sorbent

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Abstract: Double Layered Hydroxides (DLH,) or anionic clays have been extensively used in various fields as heterogeneous catalysts, sorbents, anionic exchangers and so on. In this research Double Layered Hydroxides pillared with carbonate and p-toluensulfonate anions were generated by coprecipitation of concentrated aqueous solutions of Al(NO₃)₃·9H₂O and Mg(NO₃)₂·6H₂O respectively with concentrated basic solutions of sodium carbonate and p-toluensulfonic acid at room temperature. DLH-oxides (DLO) of each compound was prepared with a special thermal programming. In another part of this research, thermal interaction was used to prepare the pillared DLHand DLO with p-toluensulfonic acid. Comparison of the size of interlayer intervals of DLH and pillared DLH (or DLO) shows that both coprecipitation and thermal methods were successful in intercalating of p-toluensulfonicacid.