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

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Abstract: Double Layered Hydroxides (DLH_s) 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 $Al(NO_3)_3$. 9H2O and $Mg(NO_3)_2.6H_2O$ 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-toluensulfonincacid.