

THERMAL BEHAVIOUR OF LAYERED ORGANIC-INORGANIC NANOCOMPOSITE: BETA-NAPHTHOXYACETIC ACID INTERCALATED INTO ZINC-ALUMINIUM LAYERED DOUBLE HYDROXIDE

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ABSTRACT

An organic-inorganic nanohybrid material of zinc-aluminium-layered double hydroxide containing beta-napthoxyacetic acid (BNOA) as the interlamella anion was synthesized using co-precipitation method. BNOA ion was successfully intercalated into Zn-Al-layered double hydroxide by expanding the interlayer spacing from 8.93 Å to 19.46 Å based on the PXRD diffractogram of the nanocomposite. Thermal composition (calcination) of the nanocomposite (Zn-Al-BNOA) was studied by heating the samples at 100 – 800 °C under atmospheric condition. The layered structure of the nanocomposite collapsed when the sample was heated at 350 °C and the formation of ZnO phase was observed at 400 °C and higher. Further characterization for the FTIR and organic-inorganic composition and SEM, were also carried out.

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