Document Type : Thesis

Document Title : دراسة التكسير الحراري لأنظمة ترترات الحديد \النحاس و الحديد \الكادميوم الصلبة

دراسة التكسير الحراري لأنظمة ترترات الحديد \النحاس و الحديد \الكادميوم الصلبة

Document Language : Arabic

Abstract : MC4H4O6.2H2O-FeC4H4O6.2.5H2O (M: Cd, Cu) was prepared from FeC4H4O6.2.5H2O and MC4H4O62H2O (M: Cd, Cu). All compounds and parents compounds studied by DTA-TG, X-ray and FT-IR and showed that the compounds MC4H4O62H2O (M:, Cu, Cd) and - FeC4H4O6.2.5H2O were decomposed in to two steps. The first step is the dehydration and the second one is the decomposition to oxide. For the mixture of MC4H4O6 - FeC4H4O6.2.5H2O (M:, Cu, Cd), we studied the decomposition of anhydrated mixture. The decomposition of CuC4H4O6 - FeC4H4O6 gives one step only which contributed to the oxidation of FeII tartarate in the mixture to oxide in the same time with oxidation of CuC4H4O6 to give finally the CuOFe2O3. But in the case of CdC4H4O6 - FeC4H4O6 the decomposition give two steps. The first one attributed to the oxidation of Fe II to oxide and the second step to the Cadmium tartarate to oxide to give finally the CdO-Fe2O3 as a final product. The Kinetic decomposition steps were studied under dynamic conditions at different heating rates then the activation energy(E) and arhenious constant for each step were calculated using methods(Diefallah composites, Coats-Redfern and Ozawa).The best fit of Kinetic model equations of heterogeneous solid state reaction was applied and the results were compared with each other. The activation energy(E) was calculated to the best fit. Finally the value of E and log A, which had been calculated according to Dieffallah composites, Coats-Redfern and Ozawa assuming R2 model , were compared.

Supervisor : أ.د.سليمان ناصر ياسهل ، د. عبدالحميد البليهي

Publishing Year : 2007