

TỔNG HỢP -Fe₂O₃ KÍCH THƯỚC NANOMET BẰNG PHƯƠNG PHÁP ĐỐT CHÁY GEL VÀ NGHIÊN CỨU KHẢ NĂNG HẤP PHỤ SẮT, MANGAN, ASEN

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TÓM TẮT:

-Fe₂O₃ powder has been synthesized at low temperature (2500C) by the combustion of gel prepared from polyvinyl alcohol (PVA) and iron nitrates.

Factors affecting on structure and particle size of nanometer -Fe₂O₃ oxides including temperature of calcining was investigated.

The crystalline process and the morphology of oxide particles were considered by X-Ray diffraction (XRD), Scanning Electron Microscopy (SEM) and Vibrating Sample Magnetometer (VSM). Surface areas of oxides were determined by the BET (Brunaure-Emmet-Teller) method. Further thermal treatment at 250-3000C in 3h yields the single phase -Fe₂O₃ with the surface area 39,5 m²/g. The results indicated that -Fe₂O₃ powders with crystallite size 15-20 nm, H_c = 1,8 Oe, M_s = 29 emu/g, M_r = 0,4 emu/g have been prepared.

The adsorption treatment of iron, manganese and arsenic were investigated. The nanosized -Fe₂O₃ material yielded maximum sorption capacity of 48,02 mg/g for arsenic, 57,09 mg/g for arsenat; 138,89 mg/g for manganese and 150,07 mg/g for iron according to the Langmuir isotherm.