

Preparation, Synthesis and Characterization of Zeolite Faujasite for CO₂ Adsorption

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Abstract

Zeolites materials are mainly used as an adsorbent and also for the ion exchange and heterogeneous catalyst respectively. Though Zeolites are occurring in nature, some impurities were present inside it, therefore synthetic zeolite are getting more attention in recent decades. For synthesis, Sol-gel method is preferred because the crystal growth can be controlled by varying synthetic time and growth temperature. In this report, Zeolite Faujasite (FAU) X type was synthesised and their crystal structure were confirmed using X-Ray Diffraction (XRD), surface morphology was studied using Scanning Electron Microscope (SEM), functional group are identified by Fourier transform infrared spectroscopy (FTIR), the Si/Al ratio (1.5 to 3.0) determined by Energy-dispersive X-ray spectroscopy (EDS), From the N₂ adsorption/desorption isotherms the surface area and from Barrett-Joyner-Halenda (BJH) analysis its pore size distribution were studied.