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Analysis by IR, XRD, TGA, SEM and EDX for the Study on Zn(II) ions Exchange by Natural Zeolite and it's Adsorbed Derivative

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ABSTRACT

In the present work Stilbite (Natural Zeolite), Na-Zeolite are exchanged with Zn(II). The analysis of the parent zeolite and the exchanged derivative has been carried out using Inductive Couple Plasma-Atomic Emission Spectroscopy (ICP-AES). The exchanged derivative is then used to prepare adsorbed derivatives with N_2 gas. The structural changes are studied by IR spectroscopy. The exchange percentage of Zn(II) with natural zeolite and Na-zeolite is maximum. In this study Scan Electron Microscopy (SEM) analysis for morphological structure and XRD technique is used to determine the unit cell structure of synthesized and natural zeolite. Also thermal studies of natural zeolite and its exchanged derivative are carried out using TGA (Thermal Gravimetric Analysis). For the same samples FESEM (Field Emission Scanning Electron Microscope) and EDX (Energy Dispersive X-Ray Spectroscopy) analysis is also carried out.

Keywords: Natural Zeolite (Stilbite), Na-Zeolite, ICP-AES, X-Ray Diffraction, IR, TGA, SEM, EDX etc.