A STUDY OF APTES-MCM-41 AS AN ADSORBENT FOR REMOVAL OF ZINC ION IN AQUEOUS SOLUTION

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APPROVAL SHEET

This Final Year Project Report entitled "**A Study of APTES-MCM-41 as an Adsorbent for removal Zinc ion in Aqueous Solution**" was submitted by Siti Noor Za'emah Binti Saidi, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in Faculty of Applied Science, and was approved by

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ABSTRACT

A STUDY OF APTES-MCM-41 AS AN ADSORBENT FOR REMOVAL OF ZINC ION IN AQUEOUS SOLUTION

An investigation on the synthesis of mesoporous silica (MCM-41) was performed. The samples were characterized by FT-IR and SEM. SEM study exhibits that the patterns indicate that the modified materials retain the MCM-41 structure. This study shows that the addition of 50% APTES increase characteristic of mesoporous silica. This study also given that the spectrum of functional group of modified MCM-41 were broadened by addition of 50% APTES. Adsorption studies also were carried out to study the effect of various parameters like contact time, pH, concentration and temperature and the result shows that the maximum uptake of zinc ions occur at 240 minutes as a contact times, 60 mg/L for concentration, pH=10 and temperature at 40 ^{o}C. From the optimization study, it was observed that the uptake of zinc ions on APTES-MCM-41 was 3.50 mg/g which is 28.09%.