

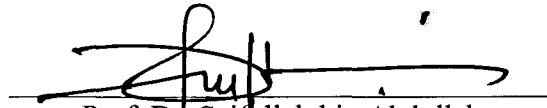
**THE STUDY OF NANO-ZEOLITE COATED POTASSIUM FOR SLOW
RELEASE FERTILIZER APPLICATION**

SITI NURUL SHAHIDAH BINTI ITHNIN

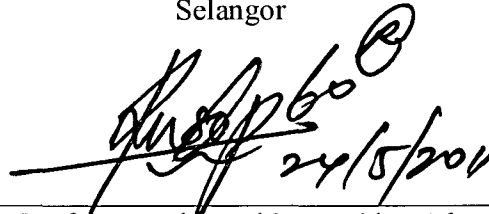
**Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
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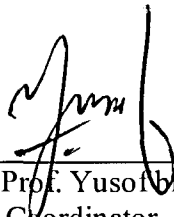
This Final Year Project Report entitled **“The Study of Nano-Zeolite Coated Potassium For Slow Release Fertilizer Application”** was submitted by Siti Nurul Shahidah Binti Ithnin, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Physics in the Faculty of Applied Sciences, and was approved by



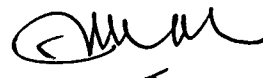
Prof. Dr. Saifollah bin Abdullah
Supervisor
~~B.Sc. (Hons.) Physics~~
Faculty of Applied Sciences
Universiti Teknologi MARA
40450 Shah Alam
Selangor



Assoc. Prof. Dr. Mohamad Rusop bin Mahmood
Co-supervisor
~~B.Sc. (Hons.) Physics~~
Faculty of Applied Sciences
Universiti Teknologi MARA
40450 Shah Alam
Selangor



Assoc. Prof. Yusof bin Teehran
Project Coordinator
B.Sc.(Hons.) Physics
Faculty of Applied Sciences
University Teknologi MARA
40450 Shah Alam
Selangor



Dr. Ab. Malik Marwan bin Ali
Head of Programme
B.Sc.(Hons.) Physics
Faculty of Applied Sciences
University Teknologi MARA
40450 Shah Alam
Selangor

Date: 25 MAY 2011

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ABSTRACT

THE STUDY OF NANO-ZEOLITE COATED POTASSIUM FOR SLOW RELEASE FERTILIZER APPLICATION

The feasibility of using Nano- Zeolite coated potassium for slow release fertilizer application was investigated. Nano-zeolite coated potassium was prepared by immersed Nano-Zeolite in Potassium solution-Potassium Nitrate (KNO_3). Nano-Zeolite was thoroughly characterized using X-ray Diffraction (XRD), Fourier Transform Infrared (FTIR), Scanning Electron Microscopy (SEM) and Ultraviolet-Visible Spectroscopy (UV-Vis) to study the effect of Nano-Zeolite after had been coated in the Potassium Nitrate (KNO_3). It was observed comparative study of the release of Potassium (K) from Potassium Nitrate (KNO_3) with different concentration. The concentration that had been observed was 0.2 M, 0.4 M, 0.6 M, 0.8 M and 1.0 M. The results for XRD and SEM had shown the existence of Potassium that had been coated on the Zeolite. Analysis of XRD showed the presence of element Potassium (K), Potassium Oxide (K_2O) and Zeolite in the sample. The existence of Potassium (K) in the Zeolite structure proved that the Potassium (K) had been coated on Zeolite since the basic structure of Zeolite only have the element of Aluminium (Al), Silicon (Si) and Oxygen (O). The release of Potassium (K) in the water decrease with the number of immersion by using UV-Vis.