ADSORPTION OF NI(II) ON CHEMICALLY MODIFIED SPENT GRATED COCONUT (*COCOS NUCIFERA)*

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Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Chemistry
in the Faculty of Applied Sciences
Universiti Teknologi MARA

JANUARY 2016

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim. First and formost I would like to convey my deep gratitude and special appreciation for my supervisor, Madam Khadijah binti Khalid who has inspired me to be a good, independent researcher and also guide me by giving brilliant comment and ideas. Moreover, I would like to give gratitude to Miss Khaima Azira binti Wan Khalir cause gave me valuable suggestion on a methodology in modifying chemical and sample preparations. Special thanks to my partner, Fazrizal bin Dolkafri who shared his knowledge and information in preparing thesis and give his helping hands and when I need a help. He is my best collaborators for lending his ideas to my scientific and technical problem especially when handling with instruments. Also our lab instructor, Mr. Fauzi who had helped me in preparing chemicals and trained to familiarize with Atomic Adsorption Spectrometry (AAS) and also make me independent. The simple phrase "thank you" that present how much their contribution and whoever encourage and support me until I successfully finish this thesis and also my degree. I also would like to take this opportunity to dedicate this special work to my parent for giving me support and spiritual inspiration. Finally, I like to thank all of my friends who supported me in writing and encourage me to strive towards my goal.

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ABSTRACT

BIOSORPTION OF Ni(II) ON CHEMICALLY MODIFIED SPENT GRATED (SGC) *COCOS NUCIFERA* COCONUT: KINETIC AND ISOTHERM

Plant waste which comes from coconut process output was determined as new adsorbent to be analysed to optimise the efficiency of adsorbent to be used. In this study, the treated spent grated *cocos nucifera* was chosen to be investigated for treating Ni(II) contaminant. Several parameter or condition such as pH, dosage, concentration and contact time were studied to get optimum condition in order to treat water from heavy metal contaminants such as Ni(II). pH 5 was chosen as optimum pH and 0.02 g of adsorbent selected to be the best dosage. The concentrations of 10 mg $L^{-1}$of Ni(II) possessed the high percentage removal resulted. Pseudo-second-order showed that the internal diffusion mechanism and chemical nature process occur in this adsorption. The maximum capacity, q_{max} determined from Langmuir plot gave about 163.93 mg/g which classified among the higher adsorption capacity recorded. The best fitted Langmuir graph indicated that monolayer adsorption occurred onto a homogeneous surface.