UNIVERSITI TEKNOLOGI MARA

PHYSICAL AND MORPHOLOGICAL CHARACTERIZATION OF HEAVY METAL ADSORPTION BY FLOATING MANMADE WETLAND

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Thesis submitted in fulfillment of the requirements for
the Bachelor Degree of
Chemical and Process Engineering

Faculty of Chemical Engineering

November 2009

DECLARATION

"I hereby declare that this report is the result of my own work except for quotations and summaries which have been duly acknowledged."

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2006844001

ACKNOWLEDGEMENTS

IN THE NAME OF GOD, THE MOST GRACIOUS AND MERCIFUL

First and foremost, I would like to acknowledge the help, suggestion, discussion, patience and continuous encouragement of my supervisor, Pn. Noorharliza Bt. Abdul Razak throughout the course. Thank you for trusting me and pardon me if there is any mistake I have done.

My greatest appreciation also to everyone who has helped me in completing the course especially Chemical Engineering Faculty's lab assistant. Thank you. Not forgetting my friends especially Mohd Fakhruddin B. Maskore who helped me to complete my study instead of him.

Last but not least to my family for the blessing and encouragement. Thank you.

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ABSTRACT

Ipomoea aquatic (water based plant) as a natural treatment was chosen as research subject. Two type of analyzation was classified which is morphology characterization, to analyze the physical sight observable change (color spectrum, shape, size) on each of the plant's limb (leaf, stem and root) and heavy metal analysis which is to find out the containment of selected trace heavy metals (Cr, K and P) on the plant. This observation was done on three tanks where tank 1 stands for blank (without $K_2Cr_2O_7$), tank 2 for submerged influent entrance with $K_2Cr_2O_7$ and tank 3 for uplifted influent entrance with $K_2Cr_2O_7$. At the end of the research it was found that for the morphology characterization root samples shows the highest size change on each of the tank compared to stem and leaf samples. While for color spectrum analysis, slight change was observed in tank 3 where it appears for certain parts of the plant to change color from green to yellowish pale green on most of the leaf and stalks within 5 days. The chlorophyll decolorize symptoms was also observed during the chlorophyll analysis where the color changes observed on each samples of each tanks. Heavy metal analysis results in domination of root samples since it is having the highest amount of heavy metals nearly for each analysis except for P analysis in tank 2 and 3 where phosphorus appeared to be the highest element contained in stem samples.