

**REMOVAL OF CHROMIUM (VI) AND LEAD (II) BY USING
SAWDUST ACTIVATED CARBON AS COMPARED WITH
COMMERCIAL ACTIVATED CARBON**

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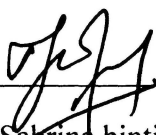
**Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Applied Chemistry
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

APRIL 2009

This Final Year Project entitled **“Removal of Chromium (VI) and Lead (II) using Sawdust Activated Carbon as Compared with Commercial Activated Carbon”** was submitted by Norlina binti Hussin in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by



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ACKNOWLEDGEMENTS

With the name of Allah, the Most Gracious and the Most Merciful

First of all, I would like to express my gratitude towards Allah S.W.T the Almighty for the gift to accomplish this final year project report. My sincere appreciation and deep gratitude goes to my impressive supervisor Pn. Nurul Nadiah Mohd Firdaus Hum for her encouragement, suggestions, comments and guidance with me during this project. I also would like to extend my thanks and appreciation to lab technician, Mr. Din and all laboratories assistant whose were helps me in order to finish this project.

Secondly, I owe a special thanks to my lovely family, for their endless morale and encouragement with throughout this project. Also, million thanks to my kindly friends, Azlinda, Muslimah and Nadiyahul Husna for their continued support and assistance to help me throughout the completion of this thesis.

Lastly, for all my friends and other individuals whose name are not mentioned above, thanks for their help, support, patience and understanding throughout to finish this thesis either direct of indirect. May ALLAH bless all of their good deeds.

Norlina Hussin.

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ABSTRACT

REMOVAL OF CHROMIUM (VI) AND LEAD (II) BY USING SAWDUST ACTIVATED CARBON AS COMPARED WITH COMMERCIAL ACTIVATED CARBON

The discharge of chromium (VI) and lead (II) into natural streams and rivers from the industries causes several health and environmental problems. Removal of chromium (VI) and lead (II) from aqueous solution by sawdust activated carbon as compared with commercial activated carbon was studied. In this study, sawdust has been treated with phosphoric acid to form activated carbon and used to remove chromium (VI) and lead (II). The application of it will reduce solid waste disposal problem and also minimize the cost of wastewater treatment. The optimum parameters that has been investigated are initial concentration, pH, adsorbent dose and contact time. Sawdust activated carbon has ability to remove Cr (VI) and Pb (II) from the aqueous solutions with the percentage removal is 60-80% for Cr (VI) and 90-100% for Pb (II). The maximum percentage removals were found at 2 ppm of aqueous initial concentration, pH 2 for chromium (VI) and pH 6 for lead (II). The result of this study also showed that, the optimum adsorbent dose of sawdust activated carbon was 2.4 g for the removal of Cr (VI) at 80 minutes while 1.6 g for the removal Pb (II) at 60 minutes. The removal of Cr (VI) and Pb (II) are more efficient by using commercial activated carbon compared with sawdust activated carbon due to its greater percentage removal but sawdust activated carbon can be considered as good adsorbent due to the sawdust that can be easily obtained and its low cost.