

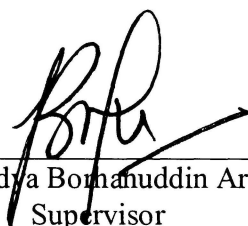
**CU (II) AND NICKEL (II) REMOVAL FROM CONTAMINATED
WATER BY ELECTROLYSIS METHOD USING GRAPHITE
ELECTRODE**

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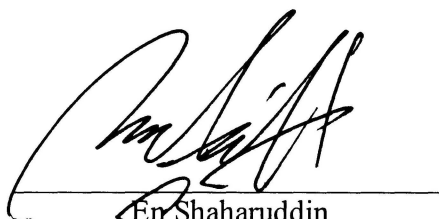
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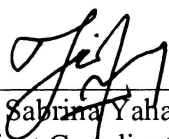
This Final Year Project Report entitled “**Copper (II) and Nickel (II) Removal From Contaminated Water by Electrolysis Method Using Graphite Electrode**” was submitted by Muhammad Azril Bin Hashim, in partial fulfilment of the requirements for the Degree of Bachelor of Sciences (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by



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ABSTRACT

CU (II) AND NICKEL (II) REMOVAL FROM CONTAMINATED WATER BY ELECTROLYSIS METHOD USING GRAPHITE ELECTRODE

Electrolysis effluent treatment is based on the anodic dissolution of metals, which form their hydroxides, and the pollutants are removed by sorption, coagulation, and other processes occurring in the space between the electrodes. The performance of electrolysis with carbon anode, in the treatment of metals ions (Cu^{2+} and Ni^{2+}) containing contaminated water, has been investigated. Several working parameters, such as pH, current density, and time taken for the reaction were studied in attempt to achieve a higher removal capacity. Result obtained with contaminated water revealed that effective removal capacities of studied metals could be achieved when the pH was kept at 6 for metal Copper and 4 and 8 for metal Nickel. In addition, the increase of current density enhanced the treatment efficiency for both metal. The process was successfully applied to the treatment of an contaminated water where an effective reduction of Ni^{2+} concentration under legal limits was obtained, except for metal Cu^{2+} , whereby the another types of methods can be carried out such as exchange resins or jar test. The method was found to be highly efficient and cheap compared to conventional existing techniques.