UNIVERSITI TEKNOLOGI MARA
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TITLE:

PARAMETRIC STUDY ON IRON MAGNETIC TEA WASTE ADSORBENT FOR MALACHITE GREEN REMOVAL: IMPACT OF SOLUTION pH

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AUTHOR'S DECLARATION

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

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ABSTRACT

Dye is a colouring agent that is widely used in some industries. The colour removal from the effluent water has been one of the concerns during wastewater treatment process. This is to prevent any effect caused by the releasing of the dye to the inland waters. Various of dye removal methods have been proposed including adsorption, chemical precipitation, coagulation, membrane filtration, and biological treatments. Among these, adsorption was chosen because of its simplicity and low cost. Research has been done to identify potential adsorbents that are low in cost to be the adsorbent for the adsorption process. The objective of this process is to synthesize the tea waste as adsorbent, to investigate the potential of magnetic tea waste as an adsorbent for removal of MG in aqueous solution, and to evaluate the impact of pH solution towards removal of MG in aqueous solution. Tea waste is proposed to be adsorbent because it is easily available. Parameters such as contact time and pH levels that will affect the dye removal through adsorption will be adsorption. The adsorbate used in this study was Malachite Green (MG). Different methods for different types of experiment are explained further in this report. From the study, it is found that higher contact time and pH levels will enhance the adsorption efficiency. In conclusion, the proposed adsorbent, which is tea waste, has proven to have the potential in removing dye from wastewater. Recommendations for further work are also mentioned for the continuity of this type of research.

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