

**UNTREATED RED SEAWEED, *Kappaphycus alvarezii*  
AS A BIOSORBENT TO REMOVE Pb(II) IONS  
FROM AQUEOUS SOLUTION**

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## TABLE OF CONTENTS

	<b>Page</b>
<b>ACKNOWLEDGEMENTS</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vii
<b>LIST OF FIGURES</b>	viii
<b>LIST OF ABBREVIATIONS</b>	ix
<b>ABSTRACT</b>	x
<b>ABSTRAK</b>	xi
<b>CHAPTER 1: INTRODUCTION</b>	
1.1. Background of the Study	1
1.2. Problem statement	4
1.3. Objectives of the Study	5
1.4. Significance of the Study	5
1.5. Scope and Limitations	6
<b>CHAPTER 2: LITERATURE REVIEW</b>	
2.0 The seaweed industry in Malaysia	7
2.1 <i>Kappaphycus alvarezii</i>	9
2.2 Heavy metal – Pb(II)	11
2.3 Adsorption studies	13
2.3.1 Biosorption Process	13
2.3.2 Advantages of Biosorption Process	14
2.4 Application of Seaweeds in Heavy Metals Biosorption Process	15
2.5 Solution to solve the environmental problems	23

<b>CHAPTER 3: METHODOLOGY</b>	25
3.1 Materials	25
3.1.1 Raw material	25
3.1.2 Chemicals and Reagents	25
3.1.3 Glassware and Apparatus	26
3.1.4 Equipment and Analytical Instrument	27
3.2 Methods	28
3.2.1 Collection of raw material sample and chemical preparation	28
3.2.1.1 Sample Collection	28
3.2.1.2 Preparation of 20 ppm stock solutions of lead	28
3.2.2 Characterization of Untreated Red Seaweed (URS)	29
3.2.2.1 ATR-FTIR Analysis	29
3.2.3 Physicochemical parameter study	29
3.2.3.1 Determination of pH effect	29
3.2.3.2 Determination of biosorbent dosage effect	30
3.2.3.3 Determination of shaking rate	30
3.2.3.4 Isotherm study	31
3.3 Experimental design	32
3.3.1 Preparation of adsorbent	32

## **CHAPTER 4: RESULTS AND DISCUSSION**

4.1 ATR-FTIR analysis	33
4.2 Physicochemical parameter analysis	36
4.2.1 Effect of pH	36
4.2.2 Effect of biosorbent dosage	38
4.2.3 Effect of shaking rate	39
4.3 Isotherm analysis	41

## ABSTRACT

### UNTREATED RED SEAWEED, *Kappaphycus alvarezii* AS A BIOSORBENT TO REMOVE Pb(II) IONS FROM AQUEOUS SOLUTION

Present study has been undertaken to propose an alternative use of untreated red seaweed (UTRS), (*Kappaphycus alvarezii*) as biosorbent for the removal of heavy metal ions from aqueous solutions. The biosorption studies were conducted in batch adsorption system as a function of effect of pH, dosage and stirring rate. The experimental results showed that readily available *Kappaphycus alvarezii* was able to remove Pb(II) ions from aqueous solution. Based on the results obtained from the parameters investigated, the Pb(II) sorption capacity was 22.4215 mg/g at pH 5 for effect of pH, 6.15 mg/g (12.30 % of Pb(II) ions removal) at 0.02 g of biosorbent dosage for effect of biosorbent dosage, and 0.35 mg/g at 200 rpm for effect of shaking rate. The Pb(II) sorption capacity in *Kappaphycus alvarezii* increases as it follows these optimum values of pH 5, 0.02 g of biosorbent dosage and 200 rpm of shaking rate. The Pb(II) sorption capacity was suppressed by the other cations present in the solution. The Pb(II) sorption equilibrium was better explained by Freundlich isotherm model with correlation coefficient of 0.9969. The results showed that this red seaweed can be a suitable alternative to use as biosorbent in the removal of toxic heavy metals from aqueous solutions.