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Thesis Outline

CHAPTER 1 INTRODUCTION

It provides background and objectives of this study, the main interesting is to solve a problem of environmental which is a contamination of cadmium ion, a by-product of zinc mining in wastewater and a main rivers in Tak province, Thailand as well as synthesized zeolites from rice husk ash, local material in Thailand from power plant and then cadmium removal performance study.

CHAPTER 2 GENERAL INFORMATION FOR MAIN MATERIALS

It provides the review of related materials for cadmium removal from zeolite, contamination, toxicological effects, and synthesis of zeolite procedure especially from waste materials agriculture and heavy metals pollution contaminated in wastewater.

CHAPTER 3 ZOLITES PREPARATION

It provides the two-step method of synthesized zeolites from RHA, first is to extraction silica and alumina content solution by NaOH powder. Second is to synthesis of zeolite by adding sodium aluminate to varying a Si/Al ratio. The result of zeolite synthesis from rice husk ash by using selected methods show the result of synthesized zeolites, characterization and cation exchange capacity, it would be used for cadmium removal performance in the next step.

CHAPTER 4 ZEOLITE PERFORMANCE FOR CADMIUM REMOVAL

It describes the removal process of cadmium ion onto synthesized zeolites and effect of changing parameters such as adsorbent dose, pH, initial concentration, time and temperature of solution. This cadmium removal performance is to confirm a removal capacity of synthesized zeolites and compare to commercial synthetic zeolite.

CHAPTER 5 GENERAL CONCLUSION AND RECOMMENDATIONS

It summarizes the major findings of this study and recommendation of further research which is suitable and useful for rural region as a poor and developing countries.