

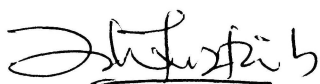
**SYNTHESIS AND CHARACTERIZATION OF  
MgAlCO<sub>3</sub>- HYDROTALCITE**

**NORFARAHNAZALIZAN BINTI BIDIN**

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

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This Final Year Project report entitled “**Synthesis and Characterization of MgAlCO<sub>3</sub> – Hydrotalcite**” was submitted by Norfarahnazalisan Binti Bidin, 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



---

Cik Nurul Izza Binti Taib

Supervisor

B.Sc. (Hons.) Chemistry (Forensic Analysis)

Faculty of Applied Sciences

Universiti Teknologi MARA

40450 Shah Alam

Selangor



---

Cik Sabrina M. Yahaya

Project Coordinator

B.Sc.(Hons.) Chemistry

(Applied Chemistry)

Faculty of Applied Science

University Teknologi MARA

40450 Shah Alam

Selangor



---

Dr. Yusairie Bin Mohd

Head of Programme

B.Sc. (Hons.) Chemistry

(Applied Chemistry)

Faculty of Applied Sciences

University Teknologi MARA

40450 Shah Alam

Selangor

Date: 22/5/09

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## TABLE OF CONTENTS

	Page
<b>ACKNOWLEDGMENTS</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vii
<b>LIST OF FIGURES</b>	viii
<b>LIST OF ABBREVIATION</b>	ix
<b>ABSTRACT</b>	x
<b>ABSTRAK</b>	xi
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 Background	1
1.2 Significance of Study	2
1.3 Objective of Study	2
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Clay	4
2.2 Layered Double Hydroxide (LDH)	5
2.3 Method of Synthesis Hydrotalcite	8
2.3.1 Indirect synthesis	9
2.3.2 Direct synthesis by co precipitation	10

## ABSTRACT

Hydrotalcite is anionic clay that is found in nature and can be easily synthesized in the laboratory by co-precipitation of dilute solutions of magnesium and aluminium hexa hydrates with sodium carbonate. It is composed of mixed layers of Mg and Al, with interlayer anions, most commonly carbonate, to provide overall charge neutrality. Hydrotalcite is one of a number of clays that preferentially adsorb anions, the class referred to as anion clays. Under co-precipitation method, different molar ratio of hydrotalcite was synthesized and characterized. XRD analyzed showed decrease in intensity and increase in basal spacing. The FTIR showed the functional groups of the hydrotalcite. SEM showed the surface particles of the hydrotalcite which was irregular shape. The adsorption ability of hydrotalcite was observed by using the AAS. The ability of the hydrotalcite, towards hydrotalcite:Cu> Pb> Cd. While, for the contact time, as the contact time increase, the percentage uptake also increases.