CHARACTERIZATION OF $Li_4Ca_2O_4$ AND Li_2MgO_2 USING XRD, SEM AND UV Vis NiR SPECTROSCOPY

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Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Industrial Physics
in the Faculty of Applied Science
Universiti Teknologi MARA

JANUARY 2012

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1 FEB 2012

ACKNOWLEDGEMENT

Assalamualaikum w.b.t,

Firstly, I would like to express our grateful to ALLAH S.W.T for giving me the mercy and good health to finish my final year project as the way it has to be. I also would like to thank to my most helpful and respected supervisor and co-supervisor, Pn. Suraya binti Ahmad Kamil and Prof Dr Norlida binti Kamaruzzaman. Besides, not forget to my family who had given me a lot of support and encouragement. For those people around me who gives information and advice that related to this project.

Lastly, I hope my project will help me to obtain knowledge and exposure in the field of science and technology as well as to introduce some basic techniques and tools that can be used in the future.

ABSTRACT

CHARACTERIZATION OF $Li_4Ca_2O_4$ AND Li_2MgO_2 USING XRD, SEM AND UV Vis NiR SPECTROSCOPY

Material characterization is a method of determine the physical and chemical properties of a certain material. The scanning electron microscope (SEM) is the most widely used type of electron microscope. It examines microscopic structure by scanning the surface of materials, similar to scanning confocal microscopes but with much higher resolution and much greater depth of field. Ultraviolet-visible spectroscopy or ultraviolet-visible spectrophotometry (UV-Vis or UV/Vis) . Ultraviolet-visible spectroscopy or ultraviolet-visible spectrophotometry (UV-Vis or UV/Vis). The absorption in the visible range directly affects the perceived color of the chemicals involved. In this region of the electromagnetic spectrum, molecules undergo electronic transitions. This technique is complementary to fluorescence spectroscopy, in that fluorescence deals with transitions from the excited state to the ground state, while absorption measures transitions from the ground state to the excited state. X-ray diffraction methods are the most effective methods for determining the crystal structure of materials. Diffraction methods can identify chemical compounds from their crystalline structure, not from their compositions of chemical elements. It means that the different compounds (or phases) that have the same composition can be identified

TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENT		iii
TABLE OF CONTENTS		iv
LIST OF TABLES		vi
LIST OF FIGURES		vii
LIST OF ABBREVIATIONS		viii
ABSTRACT		ix
CHAPTER 1 INTRODUCTION		
1.1	Background of studies	1
1.2	Problem statement	4
1.3	Significant of study	5
1.4	Objectives of study	5
CHAPTER 2 LITERATURE REVIEW		
2.1	Overview of Li_2MgO_2 and $Li_4Ca_2O_4$	6
2.2	Sol-gel method	8
2.3	Size and morphology	9
2.4	Characterization of $Li_4Ca_2O_4$ and Li_2MgO_2	
	2.4.1 Ultraviolet–Visible Spectroscopy (UV-Vis)	10
	2.4.2 X-Ray Diffractometery (XRD	12
	2.4.3 Scanning Electron Microscope (SEM)	14
CHAPTER 3 METHODOLOGY		
3.1	Chemicals and reagents	16
3.2	Apparatus and instruments	16
3.3	Characterization of $Li_4Ca_2O_4$ and Li_2MgO_2	17
3.4	Flow Chart of the characterization of $Li_4Ca_2O_4$ and Li_2MgO_2	17
3.5	Sample Preparation	18
3.6	Sample Characterization	
	3.6.1 XRD	19
	3.6.2 SEM	21
	3.6.3 UV Vis NiR	23
CHAPTER 4 RESULTS AND DISCUSSIONS		
4.1	Process Information	27
4.2	SEM Results	27
4.3	UV Vis NiR spectroscopy Results	33
4.4	XRD Results	36