

CONTENTS

	page
Declaration	i
Acknowledgements	ii
Abstract	iii
CHAPTER 1: Introduction	
1.0 Introduction	1
1.1 History of Lithium Batteries Development	1
1.2 Recent Focus of Lithium Batteries Development	4
1.3 Project Focus	5
CHAPTER 2: Literature Survey	
2.0 Introduction	6
2.1 Manganese Dioxide, MnO_2	7
2.2 Lithium Manganese Oxide, $LiMn_2O_4$	14
2.3 Lithium Cobalt Oxide, $LiCoO_2$	18
2.4 Lithium Nickel Oxide, $LiNiO_2$	23
CHAPTER 3: Experimental Methodology	28
3.1 Samples Preparation	28
3.2 Material Characterization	29
CHAPTER 4: Results and Discussion	60
4.1 Differential Scanning Calorimeter (DSC)	60
4.2 X-ray Diffraction (XRD)	63
4.3 IR Spectroscopy	71
4.4 EDAX Analysis	79
4.5 Cyclic Voltammetry	83
4.6 Battery performance	91
CHAPTER 5: Conclusion	93
Reference	95