# CONTENTS

**DECLARATION** *(i)*

**ACKNOWLEDGEMENT** *(ii)*

**ABSTRACT** *(iii)*

**CONTENTS** *(iv)*

## CHAPTER 1: INTRODUCTION

1.1 Introduction  

1.2 Principle and techniques of Electrodeposition  

1.3 Semiconductors and semiconductors thin films  

1.4 Photovoltaic cells or Solar cells  

1.5 Aims and Objectives of the present study  

## CHAPTER 2: EXPERIMENTAL TECHNIQUE

2.1 Introduction  

2.2 Preparation of the films by Electrodeposition  

2.3 Material characterization of the deposited films  

2.4 X-ray diffractometry  

2.5 Scanning electron microscopy  

2.6 Energy dispersive x-ray analysis  

2.7 UV- VIS Spectrophotometry  

2.8 Resistivity/Conductivity measurements  

*Note: (iv) indicates page numbers.*
CHAPTER 3: PREPARATION AND CHARACTERISATION OF CADMIUM SULPHIDE THIN FILMS

3.1 General aspects 63

3.2 Thin film preparation 64

3.3 X-ray diffraction results 68

3.4 Result and analysis of Scanning electron microscopy data for CdS films 75

3.5 EDAX results for the CdS Thin Films 78

3.6 Optical characterization of CdS thin film 80

3.7 Resistivity/Conductivity Measurements - 85

3.8 I-V Characterization of CdS thin film 88

CHAPTER 4: PREPARATION AND CHARACTERISATION OF CADMIUM SELLNO SULPHIDE THIN FILMS

4.1 General aspects 90

4.2 Preparation of thin films of CdSSe 91

4.3 X-ray diffraction results 94

4.4 Scanning electron microscopy results of CdSSe 101

4.5 EDAX results of CdSSe thin films 104

4.6 Optical characterisation of CdSSe thin films 106

4.7 Resistivity/Conductivity Measurements - Four probe method 110

CHAPTER 5 Summary 113

References 114