

## CONTENTS

CHAPTER	PAGE NO.
<b>CHAPTER I - INTRODUCTION</b> ...	1
1.1 General ...	2
1.2 The Thin Film Technology and Photoelectrochemical (PEC) Solar Cells : The State of Art ...	3
1.3 Essentials of The Photoelectrochemical (PEC) Cells ...	12
1.4 The V-VI Chalcogens ...	14
1.5 The Proposed Work : Inbrief ...	16
<b>CHAPTER II - DESIGNS, FABRICATIONS, AND EXPERIMENTAL                   TECHNIQUES</b> ...	18
2.1 Introduction ...	19
2.2 Chemical Deposition System ...	19
2.3 Preparation of $Sb_2S_3$ Thin Films ...	23
2.4 Techniques of Thin Film Characterisations ...	24
2.5 Techniques of Photoelectrochemical (PEC) Characterisations ...	31
<b>CHAPTER III - STUDIES ON STRUCTURAL, ELECTRICAL, AND OPTICAL                   PROPERTIES OF <math>Sb_2S_3</math> THIN FILMS</b> ...	37
3.1 Introduction ...	38
3.2 Theoretical Considerations ...	38
3.3 Experimental Details ...	48
3.4 Discussion of Results ...	50
3.5 Conclusions ...	62

<b>CHAPTER IV - STUDIES ON PHOTOELECTROCHEMICAL (PEC) CELLS</b>		
<b>BASED ON Sb<sub>2</sub>S<sub>3</sub> PHOTOELECTRODE</b>	...	65
4.1 Introduction	...	67
4.2 Electrochemistry of a Semi conductor/Electrolyte		
Interface.	...	68
4.3 Experimental Procedure	...	91
4.4 Discussion of Results	...	94
4.5 Conclusions	...	107
<b>CHAPTER V - SUMMARY AND CONCLUSIONS</b>	...	108