

CONTENTS

CHAPTER	PAGE NO.
I INTRODUCTION	
1.1 General	2
1.2 The Thin Film Technology	3
1.3 The Deposition Techniques	5
1.4 About The Ternary Chalcopyrite Materials	12
1.5 Scope of The Problem	14
References	16
II THE SYNTHESIS, GROWTH MECHANISM AND PHYSICAL STUDIES ON CuBiSe₂ THIN FILMS	
2.1 Introduction	19
2.2 Experimental Details	21
2.3 Results and Discussion	27
References	33
III COMPOSITIONAL, STRUCTURAL AND MICROSCOPIC STUDIES ON CuBiSe₂ THIN FILMS	
3.1 Introduction	36
3.2 Experimental Details	36
3.3 Results and Discussion	40
3.4 Conclusions	48
References	53

CHAPTER	PAGE NO.
IV	OPTICAL AND TRANSPORT PROPERTIES OF CuBiSe₂ THIN FILMS
4.1	Introduction 55
4.2	Experimental Details 55
4.3	Results and Discussion 60
4.4	Conclusions 75
	References 78
V	SUMMARY AND CONCLUSIONS
5.1	General 80
5.2	Synthesis of The Bi ₂ Se ₃ and CuBiSe ₂ Thin Films 81
5.3	Reaction Mechanism and Growth Kinetics of Bi ₂ Se ₃ and CuBiSe ₂ Thin Films 82
5.4	Physical Observations 83
5.5	The Structural and Microscopic Studies on Bi ₂ Se ₃ and CuBiSe ₂ Films 84
5.6	The Optical and Transport Studies on Bi ₂ Se ₃ and CuBiSe ₂ Films 84
5.7	Future Directions 85