

## CONTENTS

	Page No.
CHAPTER 1: INTRODUCTION	...1
CHAPTER 2: THEORETICAL BACKGROUND	...18
CHAPTER 3: ORIENTATIONAL ORDER PARAMETERS OF BINARY MIXTURES OF 8OCB + 6OCB SHOWING RE-ENTRANT NEMATIC PHASE.	...50
CHAPTER 4: OPTICAL BIREFRINGENCE, DENSITY AND ORDER PARAMETER OF 4-N PENTYL-4'- CYANOBIPHENYL (5CB) AND 4-N-PENTYL PHENYL-4-N'-HEXYLOXY BENZOATE (ME60.5) MIXTURE EXHIBITING AN INJECTED SMECTIC PHASE.	...98
CHAPTER 5: SMALL ANGLE X-RAY DIFFRACTION STUDIES OF THE ESTER/BIPHENYL MIXTURE OF N-PENTYL CYANOBIPHENYL (5CB) + 4-N-PENTYL PHENYL- 4-N'-HEXYLOXY BENZOATE (ME60.5) EXHIBITING INJECTED SMECTIC PHASE.	..152
CHAPTER 6: SMALL ANGLE X-RAY DIFFRACTION STUDIES OF A MIXTURE OF 4-N-PENTYL-4'- CYANOBIPHENYL (5CB) AND 4-N-PENTYL PHENYL- 4-N'-PENTYLOXY BENZOATE (ME50.5) SHOWING AN INJECTED SMECTIC PHASE.	..207
CHAPTER 7: X-RAY DIFFRACTION STUDIES IN SOLID AND MESOMORPHIC PHASES OF FOUR MEMBERS OF ALKOXY-CYANOBIPHENYLS : ODD - EVEN EFFECT.	..252

CHAPTER 8: DETERMINATION OF SPLAY AND BEND ELASTIC CONSTANTS OF FOUR CLOSELY RELATED NEMATIC COMPOUNDS.	..284
CHAPTER 9: SUMMARY AND CONCLUSION	..314