## CONTENTS

.

.

٠

•

CHAPTER -1	INTRODUCTION	1-5
CHAPTER -2	GENERAL CONCEPTS OF LUMINESCENCE AND THERMOLUMINESCENCE	6-44
	General Aspects of Luminescence	6
	Types of Luminescnce	6
	Photoluminescence : Fluoresence and Phosphoresence	7
	Theories of Luminescence	10
	Configuration Co-ordinate Model	10
	Energy Band Model	11
	Effect of temperature on luminesnce	14
	Fluorescence in Coumarin	15
	Applications of Luminescence	16
	Thermoluminescence	20
	General Concept of Thermoluminescence	20
	Thermoluminescence in Polymers	24
	Characteristics of TL in Polymers	24
	Nature of Traps	26
	Luminescence Centres	28
	Electron Detrapping Mechanisms	29
	Thermal stimulation and Kinetics	31
	TL in Synthetic Polymers	34
_	Applications of thermoluminescence	34
	References	36

:

-

CHAPTER -3	POLYMERS	46-64
	Introduction	46
,	Classification of Polymers	46
	Techniques of Polymerization	50
	Application of Polymers	54
	Molecular weight of polymers	56
	Effect of Temperature	58
	Effect of Radiation	59
	Effect of Mechanical Treatment	59
	Coumarins	60
	Derivatives of Coumarins	60
CHAPTER -4	Reactivity of Coumarins. References EXPERIMENTAL TECHNIQUES	61 64 65-78
	Synthesis of Monomer and its Copolymers	65
	Synthesis of 5-7 dihydroxy-4-methyl Coumarin	65
	Preparation of Acid Chloride	65
	Polymerization	66
	Infrared Spectra	67
	Viscosity	68
	Preparation of Specimen	69
	As Received Specimen	70
,	Mechanically deformed specimens	70
~	Thermal treatment	70
	Instrumentation	71
	Spectrophotofluorometer	71
	TL glow curve Reader	76

References

•

78

			79-94
CHAPTER -5	RESULTS AND DISCUSSION		/3-34
	Results	,	79
	Discussion		83
	Reference		92
			05.00

:

## CONCLUSIONS

95-96

,