

CONTENTS

C O N T E N T S

CHAPTER	TITLE	PAGE NO
I	<u>INTRODUCTION.</u>	
	1.1 Introduction.	01
	1.2 Requisite Properties Of Substrates.	02
	1.3 Substrate Materials.	03
	1.4 Role Of The Substrates On The Properties Of The Films.	05
	1.4.1 Substrate Temperature.	08
	1.4.2 Structure Of The Substrate.	10
	1.5 Substrates For Superconducting Films.	13
	1.6 Statement Of The Problem.	20
	References.	21
II	<u>EXPERIMENTAL TECHNIQUES.</u>	
	2.1 Introduction.	26
	2.2 Electrodeposition.	27
	2.3 Theoretical Background Of Electrodeposition.	28
	2.4 Experimental SetUp For Electrolytic Deposition.	33
	2.5 Recording Of Voltamogram.	36
	2.6 Oxidation System.	39
	2.7 X-Ray Diffraction.	40
	2.8 Resistivity Measurements.	41
	References.	43

CHAPTER	TITLE	PAGE NO
III.	<p data-bbox="735 431 1228 523"><u>ELECTRODEPOSITION OF Sr-Ti ALLOYED FILMS FROM AQUEOUS BATH.</u></p> <p data-bbox="623 553 1396 587">3.1 Introduction. 45</p> <p data-bbox="623 615 1396 649">3.2 Experimental Procedure. 46</p> <p data-bbox="623 677 1396 746">3.2.1 FTO Coating On Glass Substrate. 48</p> <p data-bbox="623 773 1396 808">3.2.2 Cleaning Of The Substrates. 49</p> <p data-bbox="623 835 1396 870">3.3 Results And Discussions. 50</p> <p data-bbox="623 897 1396 1001">3.3.1 Polarization Curves And Estimation Of Deposition Potentials. 50</p> <p data-bbox="623 1028 1396 1097">3.3.2 Studies On Growth Parameters Of The Films. 58</p> <p data-bbox="623 1125 1396 1159">3.3.2.1 Current Density. 58</p> <p data-bbox="623 1187 1396 1221">3.3.2.2 Aging Effect. 58</p> <p data-bbox="623 1249 1396 1317">3.3.2.3 Effect Of Temperature On Electrodeposits. 60</p> <p data-bbox="623 1345 1396 1414">3.3.2.4 Thickness Of The Alloyed Films. 60</p> <p data-bbox="623 1441 1396 1476">3.4 Oxidation. 65</p> <p data-bbox="623 1503 1396 1538">3.4.1 Appearance Of The Deposit. 66</p> <p data-bbox="623 1565 1396 1600">3.5 Microstructures. 66</p> <p data-bbox="623 1627 1396 1662">3.6 X-Ray Diffraction. 69</p> <p data-bbox="735 1689 1396 1724">References. 73</p>	
IV.	<p data-bbox="735 1802 1228 1894"><u>ELECTRODEPOSITION OF Sr-Ti ALLOYED FILMS FROM NON-AQUEOUS DMSO BATH.</u></p> <p data-bbox="623 1924 1396 1958">4.1 Introduction. 75</p>	

CHAPTER	TITLE	PAGE NO
	4.2 Experimental Procedure.	76
	4.3 Results And Discussion.	78
	4.3.1 Effect Of Non Aqueous Solvent On Substrate.	79
	4.3.2 Studies On Growth Parameters Of The Films.	85
	4.3.2.1 Current Density.	85
	4.3.2.2 Composition Of Electrolytic Bath.	89
	4.3.2.3 Molarity Of The Constituent Solutions.	89
	4.4 Thickness Of The Alloyed Films.	90
	4.5 Appearance Of The Deposit.	93
	4.6 Oxidation.	93
	4.7 Microstructures.	96
	4.8 X-Ray Diffraction.	96
	References.	104
V.	<u>SUMMARY AND CONCLUSIONS.</u>	106