CONTENTS

PREFACE 1 - 3

REVIEW 4 - 15

CHAPTER 1
SYNTHESIS OF 4-ARYLIDENE(ALKYLIDENE)-2-PYRIDYL-2-IMIDAZOLIN-5-ONES 16 - 50

Introduction 16
Results and discussion 16
Experimental 24
Synthesis of starting materials 25
Synthesis of imidazolinones 26

CHAPTER 2
SYNTHESIS OF SPIRO IMIDAZOLINONES 51 - 75

Introduction 51
Present work 53
Results and discussion 53
Experimental 65
Synthesis of starting materials 65
Synthesis of spiro imidazolinones 66

CHAPTER 3
SYNTHESIS OF 4-[AMINO,PYRIDYL METHYLENE]-2-PYRIDYL-2-IMIDAZOLIN-5-ONES 76 - 95

Introduction 76
Present work 77
Synthesis of amino imidazolinones 77
Results and discussion 78
Preparation of metal complexes using amino 89
imidazolinones as ligand

Results and discussion 90
Experimental 91
Synthesis of starting materials 92
Synthesis of aminoimidazolinones 92
Preparation of metal complexes 94
Preparation of trihydrochloride 95

CHAPTER 4
AMINOIMIDAZOLINONES AS CORROSION INHIBITORS FOR MILD STEEL 96 - 120

Introduction 96
Present work 99
Results and discussion 99
Weight loss method 99
Corrosion rates and percentage inhibition efficiencies 102
Potentiodynamic polarisation studies 109
Experimental 112
Preparation of Inhibitors 113
Attack solution 113
Specimen preparation 113
Weight loss method 115
Electrochemical methods for corrosion rate measurements 116
Potentiodynamic polarisation method 116
The Tafel Equation and Tafel Plots
CHAPTER 5
ANTIMICROBIAL PROPERTIES OF AMINOIMIDAZOLINONES 121 - 134

Introduction 121
Results and discussion 126
Experimental 133
Materials and methods 133
Detection of antimicrobial activity 134

REFERENCES 135 - 148