

CONTENTS

	Page No.
List of Titles	vii-x
List of Schemes	xi-xii
List of Figures	xiii-xiv
List of Tables	xv
List of Notations, Symbols and Abbreviations	xvi-xx
General Experimental Considerations	xxi
Preface	xxii

List of Titles

Chapter-1	Synthesis and Applications of Some Main Class of Nitrogen Containing Organic Compounds	1-39
	1.1 Amines	2
	1.2 Imines	4
	1.3 Amides	6
	1.4 Oximes	10
	1.5 Cyanides	12
	1.6 Isocyanides	13
	1.7 Pyridine	14
	1.8 Pyrrole	17
	1.9 Indole	19
	1.10 Quinoxalines	22

	1.11 Oxazines	23
	1.12 Thiazines	26
	1.13 References	29
Chapter – 2	Microwave Induced Stereoselective Green Synthesis of O-Vinyl Oximes using Acetylenic Esters as Efficient Michael Acceptors: Some Remark on Synthesis and Stereochemistry	41-76
	2.1 Introduction	41
	2.2 Results and Discussion	47
	2.2.1 X-ray crystallographic data of compound (I)	49
	2.2.2 X-ray crystallographic data of compound (III)	56
	2.3 Experimental section	62
	2.3.1 General procedure for synthesis of product (I-V)	63
	2.4 Spectral data of synthesized products (I-V)	67
	2.5 References	72
Chapter – 3	Cerium Catalyzed Transamidation of Secondary Amides under Ultrasound Irradiation: A Breakthrough in Organic Synthesis	77-110
	3.1 Introduction	77
	3.2 Results and Discussion	82
	3.3 Mechanistic studies and control experiment	90
	3.4 Scalability of the protocol	91
	3.5 Experimental section	91
	3.5.1 General procedure of Cerium(III)-catalyzed transamidation reaction	91
	3.5.2 Gram-scale transamidation procedure	92
	3.6 Analytical data	92
	3.7 Spectral data of product (3.1)	102
	3.8 References	103

Chapter-4	TBHP-Initiated Transamidation of Secondary Amides via C-N Bond Activation: A Metal-Free Approach	111-136
	4.1 Introduction	111
	4.2 Results and Discussion	113
	4.3 Mechanistic studies and control experiment	120
	4.4 Selectivity of amines in transamidation	121
	4.5 Experimental section	123
	4.5.1 General procedure for synthesis of amides	123
	4.5.2 General procedure for Synthesis of N-Boc activated amides from secondary amides	123
	4.5.3 General Procedure for the TBHP radical initiated transamidation	124
	4.6 Analytical data	124
	4.6.1 Analytical data of N-Boc activated amides	124
	4.6.2 Analytical data of transamidation products	127
	4.7 Spectral data	133
	4.8 References	134
Chapter – 5	NaBH₄ Induced Chemoselective Reduction of Amides to Alcohols and Amines under Catalyst Free Condition	137-159
	5.1 Introduction	137
	5.2 Results and Discussion	140
	5.3 Mechanistic studies	146
	5.4 Experimental section	147
	5.4.1 General procedure for Synthesis of N-Boc activated amides from secondary amides (1a-p)	147
	5.4.2 General procedure of reduction of N-Boc activated amides to corresponding alcohols and amines	148
	5.5 Analytical data	148

	5.5.1 Analytical data of N-Boc activated amides	148
	5.5.2 Analytical data of products	152
	5.6 Spectral data	154
	5.7 References	156
Chapter – 6	A Catalyst-Free Expeditious Green Synthesis of Quinoxaline, Oxazine, Thiazine, and Dioxin Derivatives in Water under Ultrasound Irradiation	161-192
	6.1 Introduction	161
	6.2 Results and Discussion	165
	6.3 Experimental section	173
	6.3.1 General procedure for synthesis of products (3a-p)	173
	6.4 Analytical data of the products	174
	6.5 Spectral data of products	180
	6.6 References	183
Summary and Conclusions		
List of publications		