

# Contents

<b>Chapter-1</b>	<b>Introduction</b>	<b>1-26</b>
	1.1 <i>General Introduction</i>	1
	1.2 <i>References</i>	21
<b>Chapter-2</b>	<b>Synthesis of novel atropisomeric <i>ortho</i>-substituted <i>ortho</i>-terphenyls</b>	<b>27-80</b>
	2.1 <i>Introduction</i>	27
	2.2 <i>Results and Discussion</i>	32-46
	2.2.1 Synthesis and resolution of <i>ortho</i> -terphenyl derivatives	
	2.2.2 Characterization and dynamic NMR study of <i>ortho</i> -terphenyls	
	2.3 <i>Conclusion</i>	47
	2.4 <i>Experimental Procedures</i>	48
	2.5 <i>Spectral Reproductions</i>	56
	2.6 <i>References</i>	77
<b>Chapter-3</b>	<b>Synthesis, resolution and application of hydroxylated binaphthalenes</b>	<b>81-292</b>
	3.1 <i>Introduction</i>	81
	3.2 <i>Results and Discussion</i>	91-153
	3.2.1 Synthesis and resolution of novel hydroxylated binaphthalene compounds	
	3.2.2 Synthesis of enantiomerically pure helicene like oxazines from atropisomeric 7, 7'-dihydroxy or 7-hydroxy BINOL, Study of their circularly polarized luminescence	
	3.2.3 Synthesis of helical molecules from atropisomeric binaphthyl derivatives	
	3.2 <i>Conclusion</i>	154
	3.3 <i>Experimental Procedures</i>	155
	3.4 <i>Spectral data</i>	196

1	3.5	<i>X-ray Crystal Data</i>	266
	3.6	<i>References</i>	283
<b>Chapter-4</b>		<b>Study of miscellaneous atropisomeric molecules</b>	<b>293-358</b>
	4.1	<i>Introduction</i>	293
	4.2	<i>Results and Discussion</i>	294-315
	4.2.1	Synthesis of biphenyl-based ligand: application in copper- mediated chemoselective Michael reaction	
	4.2.2	Chiral axis of benzil [ $sp^2$ (CO) - (CO) $sp^2$ type atropisomers]	
	4.3	<i>Experimental Procedures</i>	316
	4.4	<i>Spectral Data</i>	335
	4.5	<i>References</i>	353
		List of Publications	<b>359</b>
		<i>Participation in Conferences/Workshops</i>	<b>360</b>