

## Contents

Chapter 1 Introduction	1
1.1 Aromatic compounds	3
1.2 Secondary forces	7
1.2.1 Ion-dipole interaction	7
1.2.2 Dipole-dipole interaction	8
1.2.3 Hydrogen bonding	9
1.2.4 $\pi$ - $\pi$ stacking	10
1.2.5 Cation- $\pi$ interaction	11
1.2.6 Van der Waals forces	12
1.3 Molecular recognition	12
1.4 Supramolecular chemistry	13
1.5 Host-guest chemistry	14
1.6 Measurement of binding constant	21
1.6.1 Potentiometric titration	21
1.6.2 NMR titration	21
1.6.3 Fluorescence titration	22
1.6.4 Calorimetric titration	23
1.6.5 Partition coefficient	23
1.7 Applications	23
1.8 Synthesis of new classes of designed molecules	28

1.8.1	Templates	28
1.8.2	Self-assembly	29
1.9	The present research work	31
1.10	References	35
<b>Chapter 2</b>		<b>40</b>
2.1	Introduction	41
2.1.1	Triphenylmethane dyes	42
2.1.2	Rosolic acid and supramolecular chemistry	42
2.1.3	Podand molecules in supramolecular chemistry	44
2.2	Aims and objectives	47
2.3	Results and discussion	48
2.4	Experimental	58
2.5	References	78
<b>Chapter 3</b>		<b>80</b>
3.1	Introduction	81
3.2	Aims and objectives	90
3.3	Results and discussion	92
3.4	Experimental	98
3.5	References	120

<b>Chapter 4</b>	<b>123</b>
4.1 Introduction	124
4.2 Aims and objectives	132
4.3 Results and discussion	133
4.4 Experimental	144
4.5 References	167
<b>Chapter 5</b>	<b>169</b>
5.1 Introduction	170
5.1.1 Application of tris(aminoalkyl)amines in supramolecular chemistry	173
5.2 Aims and objectives	176
5.3 Results and discussion	177
5.4 Experimental	181
5.5 References	188
<b>Summary</b>	<b>I-IV</b>