

## Table of Schemes

### **Chapter 1: Polypseudorotaxanes and Polyrotaxanes**

Scheme 1	Synthetic routes for main chain polypseudorotaxanes and polyrotaxanes	5
Scheme 2	Synthetic routes for side chain polypseudorotaxanes and polyrotaxanes	22

### **Chapter 7: First Pseudorotaxane-Like [3]Complexes Based on Cryptands and Paraquat: Self-Assembly and Crystal Structures**

Scheme 1	Reagents and conditions	136
----------	-------------------------	-----

### **Chapter 11: Formation of Dimers of Inclusion Cryptand/Paraquat Complexes Driven by Dipole-Dipole and Face-to-Face $\pi$ -Stacking Interactions**

Scheme S1	Synthesis of <b>1</b>	188
-----------	-----------------------	-----

### **Chapter 18: A Supramolecular Poly[3]pseudorotaxane from Self-Assembly of a Homoditopic Cylindrical Bis(crown ether) Host and a Bisparaquat Derivative**

Scheme 1	Schematic illustration of the formation of a supramolecular poly[3]pseudorotaxane <b>4</b> based on the self-assembly of the complementary homoditopic host <b>1</b> and guest <b>3</b>	311
----------	---	-----

### **Chapter 19: A Supramolecular Triarm Star Polymer from a Homotritopic Tris(Crown Ether) Host and a Complementary Monotopic Paraquat-Terminated Polystyrene Guest by a Supramolecular Coupling Method**

Scheme 1	Schematic illustration of the formation of a supramolecular triarm star polymer <b>6</b> from a homotritopic host <b>3</b> and monotopic polymeric guest <b>2</b>	326
----------	---	-----

### **Chapter 20: Formation of a Supramolecular Hyperbranched Polymer from Self-Organization of an AB<sub>2</sub> Monomer Containing a Crown Ether and Two Paraquat Moieties**

Scheme 1	Schematic illustration of the formation of the hyperbranched	
----------	--	--

supramolecules **4** from the self-organization of the AB<sub>2</sub> monomer **1** 342

## **Chapter 21: Conclusions and Future Work**

- Scheme 1 Schematic illustration of the formation of supramolecule network **3** from the self-assembly of a multitopic polymeric guest **1** and a complementary “handcuff” homoditopic bis(crown ether) host **2** 355
- Scheme 2 Schematic illustration of the formation of a supramolecule graft copolymer **6** from the self-assembly of a multitopic polymeric host **4** and a complementary paraquat-terminated polymeric guest **5** 356