

LIST OF SCHEMES

Scheme	Page
1.1. Use of 1-phenylethyl TEMPO to effect living free-radical polymerization of styrene	7
1.2. General mechanism of copper-based atom transfer radical Polymerization	9
1.3. Reaction scheme for copper-mediated ATRP	17
1.4. Reversible Activation Processes in Living Radical Polymerization	31
1.5. Schematic representation of the TERP mechanism	32
3.1. Schematic representation of the Atom Transfer Radical Polymerization of the macroinitiator (Br-PS-Br), poly(<i>n</i> -butyl methacrylate- <i>b</i> -styrene- <i>b</i> - <i>n</i> -butyl methacrylate), triblock copolymer (BAB), and Poly(methyl methacrylate- <i>b</i> - <i>n</i> -butyl methacrylate- <i>b</i> -styrene- <i>b</i> - <i>n</i> -butyl methacrylate- <i>b</i> -methyl methacrylate), pentablock copolymer (CBABC)	81
3.2. A schematic illustration of the formation of core-shell type flower-like micellar structures from BAB, triblock and CBABC, pentablock copolymer in toluene	91
4.1. Schematic illustration of the preparation of hydrophilic initiator 2-hydroxyethyl 2-bromoisobutyrate (HEBI)	100
5.1. Synthetic pathways for the Homo and Diblock copolymers of Styrene and 2-Vinylpyridine at 65 °C via TERP	118
5.2. Quarternization of poly(2-vinylpyridine) block of PS- <i>b</i> -P2VP	121
6.1. Synthesis and Mechanism Leading to the Diblock copolymer (SI), Triblock copolymer (TB), and Star-block Copolymer (SB)	143