

ABSTRACT

Submitted bachelor thesis focuses on the synthesis of stimuli-responsive (co)polymers via RAFT polymerization. Desired thermoresponsive behavior of prepared (co)polymers was ensured by using suitable monomers di(ethylene glycol) methyl ether acrylate (DEGMA) and tri(ethylene glycol) methyl ether acrylate (TEGMA), which were chosen based on literature research. The incorporation of 2-/3-acrylamidophenylboronic acid pinacol ester (2-/3-APBAE) into the structure of prepared (co)polymers is responsible for pH and 1,2- or 1,3-diols responsivity, which requires the deprotection of phenylboronic acid (removal of pinacol ester). (Co)polymerization process was optimized by utilizing three chain transfer agents (CTA) and three solvents with different polarity. All prepared (co)polymers were characterized by nuclear magnetic resonance (^1H NMR) and gel permeation chromatography (GPC). Copolymers containing 3-APBAE were thoroughly purified with dialysis. Thermoresponsive behavior of prepared (co)polymers was confirmed by measuring cloud point (T_{cp}) values using light scattering in dependency on temperature change. One of the copolymers containing DEGMA and 3-APBAE was deprotected in mild acidic environment and characterized by measuring T_{cp} value as well.