

Title (2)	:	A facile reversible addition-fragmentation chain-transfer (RAFT) polymerization of Poly (N -isopropylacrylamide)
Journal	:	AIP Conference Proceedings
Document Type	:	Conference Paper
Publisher	:	AIP Publishing
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Link to Full Text	:	https://pubs.aip.org/aip/acp/article-abstract/2923/1/020002/3279764/A-facile-reversible-addition-fragmentation-chain?redirectedFrom=fulltext
Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85190706948&doi=10.1063%2f5.0195495&partnerID=40&md5=98f9f36e6145bbb4447d6b12ca38089b
Abstract	:	A well-known thermoresponsive polymer poly (N-isopropylacrylamide) (PNIPAAm) shows a reversible coil-to-globule transition at the lower critical solution temperature (LCST) at 32°C in aqueous solution, which has been used in various applications such as in biomedical, tissue engineering, etc. Below the LCST, PNIPAAm is in coil state and above the LCST, PNIPAAm collapses its structure into globule state. PNIPAAm can be prepared through living radical polymerization such as reversible addition fragmentation transfer (RAFT) polymerization. Reversible RAFT polymerization is widely used to synthesize PNIPAAm because it provides well-defined polymers with targeted molecular weights and narrow molecular weight distributions. The presence of impurities would interrupt the living polymerization and lead for the termination of polymerization. Usually, in order to remove impurities, freeze-pump-thaw cycle technique was performed in RAFT polymerization. However, freeze-pump-thaw cycle technique is complicated and require extra care during handling. Therefore, in this study, we introduced a facile RAFT polymerization technique to remove the impurities before starting the polymerization. In this RAFT polymerization, we optimized the polymerization condition such as using different ratio of initiator to chain transfer agent (CTA) (1:10 and 1:20), type of solvents (methanol, ethanol, 1,4-dioxane) and polymerization reaction time (2 h and 4 h). The chemical structure, molecular weight (Mw) and molecular weight distribution (Mw/Mn) of PNIPAAm were determined through proton nuclear magnetic resonance (1H-NMR), Fourier transform infrared (FTIR) and gel permeation chromatography (GPC)...see more.