Title (15)	:	**Effect of thermal stability of poly (tert -butyl acrylate) homopolymer prepared using different solvents and ratio of initiator to CTA**
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Abstract	:	This study is to investigate the effect of solvents and ratio of initiator to CTA complexes on the polymerization behavior of poly (tert-butyl acrylate) (PtBA) and its thermal stability. In this study, the PtBA was synthesized by reversible addition-fragmentation chain transfer (RAFT) polymerization. In the reaction solution, 2-(Dodecylthiocarbonothioylthio)-2-methylpropanoic acid (DDMAT) and azobisisobutyronitrile (AIBN) were used as chain transfer agent (CTA) and initiator. The solvents; 1,4-dioxane, 2-butanone and toluene and the ratio of initiator to CTA; 1:5, 1:10 and 1:20 and were set up in this study. The obtained PtBA were characterized their chemical and thermal analysis using the fourier transform infrared (FTIR) spectroscopy and thermogravimetric analysis (TGA), respectively. As the results, 1,4-dioxane and 2-butanone showed good solvents for polymerization process. Meanwhile, no polymerization could be observed for toluene system. Moreover, PtBA that prepared using ratio of initiator to CTA of 1:5 exhibit high thermal stability.