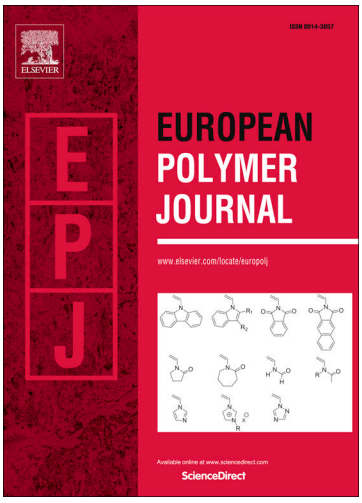

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PII: S0014-3057(17)30684-5
DOI: http://dx.doi.org/10.1016/j.eurpolymj.2017.09.006
Reference: EPJ 8054

To appear in: *European Polymer Journal*

Received Date: 8 June 2017
Revised Date: 1 September 2017
Accepted Date: 5 September 2017

Please cite this article as: Baruah, U., Gautam, A., Saikia, M., Borphukan, S., Saikia, P.J., Baruah, S.D., Monodisperse copolymer nanosphere assembly by miniemulsion polymerization, *European Polymer Journal* (2017), doi: http://dx.doi.org/10.1016/j.eurpolymj.2017.09.006

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Abstract:

Hydrophobic monomer 1-octene/ethylene with less hydrophobic monomer methyl methacrylate is used to produce copolymer of high molecular weights nanoparticles with narrow molecular weight distribution by mini emulsion polymerization. Concomitant results from dynamic light scattering (DLS) analysis and scanning electron microscope (SEM) analysis divulges the development of nano-scaled polymeric spheres with nearly uniform particle size distribution. Spectroscopy techniques (FT-IR and ^{1}H NMR) confirms the presence of ester functional group as well as methylene group in the copolymer. With increase in olefinic concentration in the monomer feed increases its specific signals for only methylene proton in the copolymer. Thermal properties of the copolymers established by thermogravimetric analysis (TG) methods exhibits good thermal stability up to a temperature of 400 °C.

Keywords: miniemulsion; Copolymers; nanospheres; olefin; polydispersity.