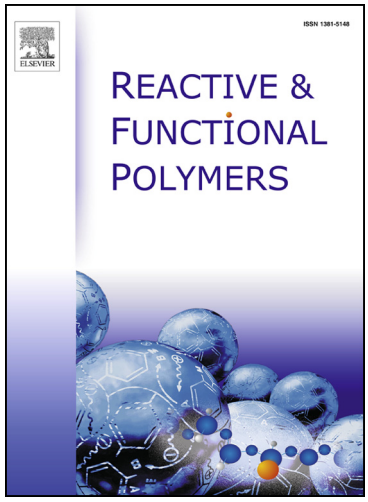

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ABSTRACT

Well-defined amphiphilic poly(*N*-isopropylacrylamide)-*b*-Poly(ε-caprolactone) (PNIPAM-*b*-PCL) block copolymers have been successfully prepared in two steps. PNIPAM–OH is firstly prepared by using 4,4'-azobis(4-cyano-1-pentanol) as bifunctional initiator, and then PNIPAM-*b*-PCL copolymer is synthesized via a ring-opening polymerization of CL using PNIPAM–OH as a macro-initiator in the presence of stannous octoate as a catalyst. The PNIPAM-*b*-PCL copolymers self-assemble to form spherical micelles of 50-130 nm in diameter, which can be modulated by the chain length of PCL block. The inclusion complexes are fabricated by treating PNIPAM-*b*-PCL with β-cyclodextrin and they are characterized by infrared and ^{1}H NMR spectroscopies, x-ray