

The swelling and mechanical properties of P(AM-co-AA) superporous hydrogels

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Superporous hydrogels have been recently developed for their applications in drug delivery. The fast and high water absorbing property provides SPHs with many other applications in industrial fields - agriculture, civil construction, and biomedical production, especially for developing oral gastric retention devices.

In this study poly(acrylamide-co-acrylic acid) superporous hydrogels (SPHs) were synthesized by gas blowing technique. To determine optimum blowing agent introduction time the reaction kinetics was monitored by the polymerization reaction exotherms and the inner pore structure was confirmed by scanning electron microscopy. The acidification and polymer composition effects on swelling properties and compressive strengths were investigated.