

Polymeric Surfactants: Recent Advancement in Their Synthesis, Properties, and Industrial Applications

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Abstract

Polymeric surfactants are a special class of the polymers that have amphiphilic characteristics of surfactants. In selective solvents, polymeric surfactants exhibit interesting association processes and develop self-assembled structures. Their capacity to create micellar aggregates with stimuli-responsive behavior in aqueous solutions, enables the creation of smart materials for many applications. The only restrictions to the creation of polymeric surfactants with complicated structures using current synthetic methods are the researchers' interests and creativity. The chemical structure of the polymer and its aqueous solution characteristics (viscosity and surface tension) should be demonstrated as having a distinct and commonly accepted connection. Unavailability of systematic and updated review on these important molecules demands a comprehensive compilation and consistent discussion on key physical aspects, characterization, synthetic techniques, and their useful applications like enhanced recovery of oil, antimicrobial potential, water treatment, pharmaceutical, etc.

Conflict of Interest

The authors declare no conflict of interest.

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