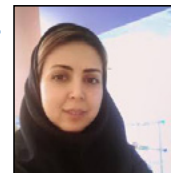


Synthesis and characterization of co-poly acrylamide-diallyldimethyl ammonium chloride

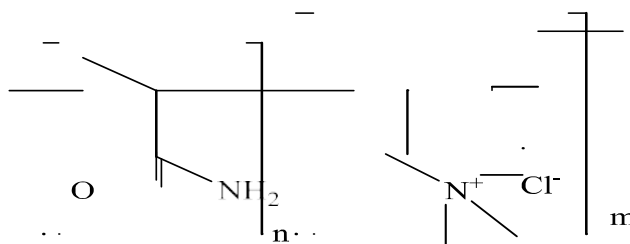
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Abstract

Water-soluble cationic co-polymers of acrylamide and diallyldimethyl ammonium chloride was synthesized via free radical polymerization in the presence of $\text{Ce}(\text{NH}_4)_2(\text{NO}_3)_6$ as an initiator. Synthesized co-polymers were characterized by FTIR, ^1H NMR and TG/DSC analyses. Cationic polyacrylamide (CPAM) is a kind of synthetic organic compound with excellent sludge dewatering performance. Cationic polyacrylamides, ammonium-based polymers, poly(allyldimethyl-ammonium chloride), and epichlorohydrin/dimethylamine-based polymers are the most common CPEs used as coagulation and flocculation agents cause they are economical and water-soluble with tunable charge densities at high molecular weights. Free radical polymerization, step-growth polymerization, and post-polymerization modification methods afford each polymer system. CPEs are used for water treatment, anti-microbial materials, and non-viral gene delivery. The cationic degree (CD) is closely related to the electrical neutralization performance of CPAM. Besides, CD can also affect the morphology of CPAM in aqueous solution.



Biography

Fatemeh Majidi Arlan was born in Urmia (Iran) in 1984. She received his Ph.D. degree in Organic Chemistry from the Urmia University in 2018, under the guidance of Professor Jabbar Khalafy. Currently she is working as a researcher on Research Department of Chemistry, Iranian Academic Center for Education, Culture and Research.



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