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Environmental friendly superabsorbent polymers (SAPs) based on cellulose nanofibers (CNFs)

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The current study was aimed to use CNF as strength enhancer of two naturally superabsorbents (SAPs) i.e., Acrylic Acid (AA) and Carboxymethyl Cellulose (CMC) based SAPs. The results showed that increasing the CNF content may be resulted in decreasing the Swelling Capacity (SC) of the produced SAPs. The produced SAPs showed excellent swelling capacity in comparison to sodium polyacrylate based SAPs and due to biodegradable and non-toxic properties can be replaced with aforementioned SAPs. The Ionic Sensitivity (IS) of all produced SAPs was investigated and resulted in increased and decreased IS with increasing the CMC and CNF content respectively. Centrifuged swelling resulted sufficient strength of the SAPs based on AA during the water absorption due to increasing CNF addition. Additionally, the antibacterial test also studied and the results showed that SAPs based on AA containing chitosan had bactericidal property against *Escherichia coli* whereas CMC based SAPs exhibited no antibacterial property versus aforesaid bacteria

Biography

Seyed Rahman Djafari Petroudy has been working as an Assistant Professor at the SBU University in Iran. He has published many interesting papers in well-known journals such as *Carbohydate Polymers, Cellulose* and *Journal of Polymer and the Environment*.

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