

عنوان مقاله:

Synthesis and Characterization of Calcium and sodium Containing Acrylamide-based Polymer and its Effect on Soil Strength

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

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خلاصه مقاله:

Soil degradation is a significant problem throughout the world. Synthetic water soluble anionic acrylamide-based polymers have wide applications in the field of agricultural applications such as mulch and agrochemicals and can also be used as a soil amendment for erosion control, non-desertification and soil stabilization. The anionic polyacrylamide containing cationic metal ions were prepared by free radical polymerization method. This anionic polymer with negative charges on the main chains was produced by reaction of mono and divalent inorganic salts with acrylamide monomer via solution polymerization. The hydrolysis of polymer was carried out by using the calcium chloride and sodium carbonate in their soluble forms. The negative charges situated onto the polymer backbone are regulated by variation of molar ratios of inorganic salts with respect to acrylamide monomer concentration. The molecular weight and charge density are two important characteristics of anionic charged polymers which are improved and manipulated in our studies. The chemical structure of polymers was characterized and confirmed by common methods and physical properties such as molecular weight, charge density and soil hardness were investigated. The results showed, the polymers have potential application as soil stabilization agent

کلمات کلیدی:

anionic polymers, polymeric mulch, soil erosion, soil strength, non-desertification

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