

عنوان مقاله:

Synthesis of Polyrhodanine nanostructure using sodium dodecylbenzene sulfonate as surfactant

محل انتشار:

پانزدهمین کنگره ملی مهندسی شیمی ایران (سال: 1393)

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خلاصه مقاله:

This study presents synthesis of polyrhodanine (PRh) by chemical oxidation polymerization in presence of potassium permanganate (KMnO₄) as an oxidant and the presence and absence of sodium dodecylbenzene sulfonate (DBSNa) as surfactant in aqueous solution. The surface morphology and chemical structure of nanoparticles were investigated by means of scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR), respectively. The results from scanning electron microscope (SEM) indicate that the morphology of Polyrhodanine was spherical and the morphology and particle size of products are dependent on the presence of surfactant. In the presence of sodium dodecylbenzene sulfonate (DBSNa) as surfactant particles were more homogeneous and more particles had average size of diameter. Also, Fourier transform infrared (FTIR) results show that all polymer peaks have been formed successfully and it can be proposed that the polymerization of rhodanine proceeded over carbon and nitrogen atoms and the intensity of peaks is dependent on the type of surfactant.

کلمات کلیدی:

Polyrhodanine, polymerization, morphology, synthesis, nanoparticles

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