

عنوان مقاله:

Effect of different additives in the casting solution on the formation and morphology of poly (vinylidene fluoride) (PVDF) membranes

محل انتشار:

پانزدهمین کنگره ملی مهندسی شیمی ایران (سال: 1393)

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خلاصه مقاله:

Porous asymmetric hydrophobic membranes were prepared from poly (vinylidene fluoride) (PVDF) polymeric materials by the phase inversion process induced by a nonsolvent. The effect of pore-forming hydrophilic additives on the membrane morphology was investigated. With a focus on the PVDF/DMAc system, the effects of various additives such as Methanol, Glycerol, Lithium chloride (LiCl), Polyethylene glycol (PEG400) and Acetic acid on the resulting membrane morphology were investigated. The thermodynamic precipitation rate of the polymer solution with the different additives was studied using cloud point measurement. The membrane morphology was examined with scanning electron microscopy (SEM). The cross-sectional structure of the membranes showed for different non solvent additive longer finger-like structure was formed due to rapid liquid-liquid demixing which can be attributed to the strong diffusion power between coagulation bath medium (water) and solvent-nonsolvent additives

کلمات کلیدی:

polymer, poly (vinylidene fluoride) (PVDF), the membrane, additives, morphology

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