عنوان مقاله:

Preparation and characterization of polysulfone Nano Structure membranes via photografted polymerization

محل انتشار:

دومین کنگره بین المللی علوم و فناوری نانو (سال: 1387)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

Polymeric membranes such as polysulfone (PSf) are commonly used in diverse fields due to their higher mechanical, thermal and chemical resistance and higher reproducibility [1]. By several modifications [2,3], PSf membranes can be used as a support layer to produce nanofiltration (NF) and reverse osmosis (RO) membranes. One of the PSf membrane modifications have been carried out by utilizing UV light irradiation due to its photosensitive behavior. UV irradiation is a technique that can selectively modify membrane surface properties. In this method, radicals are first created on the membrane surface by UV irradiation. In the presence of vinyl monomers, free radical graft polymerization occur, forming polymer chains that are covalently bonded to the surface [4,5]. Nano structure membranes were prepared by UV-graft polymerization of acrylic acid (AA) as a hydrophilic monomer onto the surface of ultra filtration (UF) membranes. Primary UF membranes were constructed by wet phase inversion method, using polysulfone (PSf) /N-methylene-2-pyrrolidone (NMP) /poly(ethylene glycol) (PEG) casting solution and water as coagulant media. In this study, PEG as a pore-former was used in a wide range of molecular weight from 600 to 20000Da. The effects of molecular weight of PEG and graft conditions such as irradiation time and monomer concentration on pore structure and permeation capacity of membrane were evaluated

کلمات کلیدی: