عنوان مقاله:

Fabrication of Nano Silver/Polyethersulfone Microfiltration Membrane with Antibacterial Activity

محل انتشار:

پنجمین کنگره بین المللی نانو و فناوری نانو (ICNN2014) (سال: 1393)

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خلاصه مقاله:

In this study, the surface of polyethersulfone (PES) microfiltration membranes was coated by silvernanoparticles in order to improve its antibacterial and antifouling properties. For this purpose, the PES membrane wasprepared by vapour induced phase inversion coupled with non-solvent induced phase inversion method and then theprepared polymeric membrane was immersed in a stable and uniform colloidal solution of silver nanoparticles that wassynthesized by chemical reduction of silver salt using fructose. The membranes mean pore size and fluxes wereinvestigated using water permeability tests. Effect of silver nanoparticles on microbial reduction of the membrane wasevaluated by the microfiltration of milk. The results showed that the PES membrane containing silver nanoparticles hadless bacteria in the permeate and retentate in comparison with the uncoated membrane. Also, the nano silver coatedmembrane had high steady state milk flux which is related to antifouling property of silver nanoparticles.

کلمات کلیدی:

Antibacterial membrane; Silver nanoparticles; Polyethersulfone (PES); Microfiltration