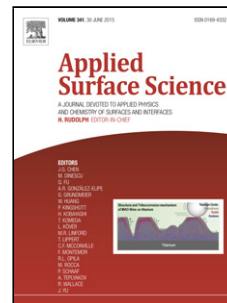


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Antioxidation performance of poly(vinyl alcohol) modified poly(vinylidene fluoride) membranes

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Highlights

- The antioxidation performance of the PVA modified PVDF membranes was evaluated via exposing the membranes to strong oxidants 30 days.
- The performance of the modified membranes remained the same even after oxidation treatment.
- A slight oxidation occurred to the PVA on the membrane surface.

ABSTRACT

Commercial poly(vinylidene fluoride) (PVDF) membranes were modified by dip-coating and crosslinking hydrophilic poly(vinyl alcohol) (PVA) on the membrane surface. The antioxidation performance of the modified PVDF membranes was evaluated via exposing the modified membranes to sodium hypochlorite and potassium permanganate solutions for 5-30 days, respectively. The evaluation was based on the influences of the two oxidants on the permeability, rejection, and hydrophilicity of the modified membranes, which were characterized by water flux, ink rejection, water contact angle, x-ray photoelectron spectroscopy (XPS), field emission scanning electron microscopy, and x-ray diffraction (XRD) measurements. The XPS and water contact angle results show that the hydrophilicity of PVDF membranes was

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