

## Abstract

Poly(vinylidene fluoride-co-hexafluoropropylene) (PVDF-co-HFP) hollow fiber membranes were prepared by using the phase inversion method. The effect of polyethylene glycol (PEG-600Mw) with different concentrations (i.e., 0, 5, 7, 10, 12, 15, 18, and 20 wt %) as a pore former on the preparation and characterization of PVDF-co-HFP hollow fibers was investigated. The hollow fiber membranes were characterized using scanning electron microscopy, atomic force microscopy, and porosity measurement. It was found that there is no significant effect of the PEG concentration on the dimensions of the hollow fibers, whereas the porosity of the hollow fibers increases with increase of PEG concentration. The cross-sectional structure changed from a sponge-like structure of the hollow fiber prepared from pure PVDF-co-HFP to a finger-like structure with small sponge-like layer in the middle of the cross section with increase of PEG concentration. A remarkable undescribed shape of the nodules with different sizes in the outer surfaces, which are denoted as "twisted rope nodules," was observed. The mean surface roughness of the hollow fiber membranes decreased with an increase of PEG concentration in the polymer solution. The mean pore size of the hollow fibers gradually increased from 99.12 to 368.91 nm with increase of PEG concentration in polymer solution.