

عنوان مقاله:

Comparative study of atomic force microscopy (AFM) and scanning electron microscopy (SEM) for characterizing pore size and pore size distribution of microfiltration polymeric membranes

محل انتشار:

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خلاصه مقاله:

Today, membrane separation technologies using polymeric membranes are becoming increasingly popular for wide range of applications, e.g. in petrochemical industry [1], and biorefineries [2]. Characterization of such membranes can provide a better and more in-depth understanding in order to evaluate their performance. Two major specifications which could directly affect on the polymeric membranes' performance are pore size and pore size's distribution. Various methods have been used to measure these parameters, but scanning electron microscopy (SEM) and atomic force microscopy (AFM) are considered as major techniques [3]. Due to the existing differences in the technical procedure of these microscopic methods, the results obtained could be of significant difference. In the present study, eleven commercial polymeric membranes were characterized for their pore size and pore size distribution by using both SEM and AFM methods. A comparative study was carried out among the reported values by the manufacturer and the obtained results by the two microscopic methods

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