

## عنوان مقاله:

Preparation of Mixed matrix membranes made up of polysulfone and MIL-53(Al) nanoparticles as promising membranes for separation of aqueous dye solutions

## محل انتشار:

دومین همایش بین المللی علوم و فناوری نانو دانشگاه تهران (سال: 1400)

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## خلاصه مقاله:

Polysulfone-MIL-53(Al) mixed matrix membranes were fabricated by using the VIPS-NIPS technique, in which 1,4-Dioxane was used as the co-solvent. MIL-53(Al) nanoparticles were used in this study owing to their small pore sizes, high hydrophilicity and superior water stability. Hence, different membrane compositions with various MIL-53(Al) contents were prepared so that a membrane with superior performance for dye rejection application and high flux can be achieved. The performance of the fabricated membranes was investigated for rejection of various dyes in aqueous solutions including Reactive Red (RR), Direct Yellow (DY), Methyl Green (MG), and Crystal Violet (CV), based on which a great separation performance (dye rejections of 99.8, 99.5, 99.2, 98.8 and 97.1 for RR, MG, DY, CV and MB, respectively) and an excellent water flux (4.8 L/m<sup>2</sup>.h.bar) were provided by the membrane containing 0.06 wt.% (MIL-53(Al).

## کلمات کلیدی:

VIPS-NIPS method, Mixed Matrix Membrane, Polysulfone, MOF, Dyes Rejection

## لینک ثابت مقاله در پایگاه سیویلیکا:

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