

عنوان مقاله:

Investigation of Membrane Filterability in Membrane Bioreactors for Treating Oil Refinery Wastewater

محل انتشار:

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خلاصه مقاله:

The evaluation of critical flux and pollutant removal in a lab-scale submerged membrane bioreactor (MBR) was performed for the wastewater of a domestic oil refinery. The flux step method and its behavior vs. transmembrane pressure (TMP) were studied to determine the critical flux of the membrane and the effect of TiO₂ nanoparticles (NP) incorporation into polyvinylidene fluoride (PVDF) matrix on the membrane filterability. The effectiveness of MBR for treating effluent stream of dissolved air floatation (DAF) unit of the Tehran oil refinery wastewater plant was studied, and the results showed that TiO₂ NP improved the efficiency of phenol removal. Ultimately, according to this study, 70% enhancement in the critical flux of the PVDF/TiO₂ membrane was obtained as a result of TiO₂ NP tendency to reduce the fouling of PVDF membranes.

کلمات کلیدی:

Membrane Bioreactor, Critical Flux, PVDF Membranes, TiO₂ Nanoparticles, Oil Refinery Wastewater

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