

عنوان مقاله:

Evaluation of Bio-Membrane System Efficiency Optimized With Nanotechnology for Treatment of Pulp and Paper Industry Wastewater

محل انتشار:

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خلاصه مقاله:

Background & Aims: The membrane adsorption bioreactor (MABR) process is the integration of biological treatment and membrane technology. Accordingly, in this study, an MABR was employed for the pulp and paper industry wastewater treatment. **Materials and Methods:** The purchased powdered activated carbon (PAC) was added to the system as an adsorbent which improved the flux of the membrane. **Results:** Based on the obtained results, the organic compounds were successfully removed by the average removal of ۶۲% and ۸۶% without and with an adsorbent, respectively. Moreover, the activated sludge was prepared from the Babol-Toyoor Slaughterhouse wastewater treatment, and adding the PAC to the activated sludge led to the better performance of the MABR system by providing a proper condition for microorganism growth. Monitoring the mixed liquid suspended solids during the process demonstrated that increasing mixed liquor suspended solids (MLSS) increased the contaminant removal rate. **Conclusion:** Overall, the presence of PAC could prevent microorganisms from accumulating on the membrane surface.

کلمات کلیدی:

Thylakoid membrane proteins, Carbon, Chemistry, Nanotechnology, Water purification

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