Membrane nanofiltration process for retrofitting of industrial wastewater treatment plant. Case study: (Mazandaran Pulp-Paper Industry, Iran)

The aim of this study is evaluation the use of membrane bioreactor for wastewater treatment mazandaran pulp and paper Industry. At first of work qualification of wastewater is case study and Characteristics of this industry wastewater were determined by different experiments such as: COD, BOD, and Color. Also, the color creating agents in the investigated wastewater was characterized. Then In this study, flux, retention, and permeate quality of various nanofiltration were investigated. The overall aim was to study the suitability of nanofiltration in purification of the discharge water from external activated sludge processes in the pulp and paper industry for reuse in the paper manufacturing process and to compare the results to nanofiltration of paper machine process waters. The discharge waters were nanofiltered at a higher flux than paper machine process waters. The permeate was almost free of color and organic compounds but contained significantly more inorganic compounds than the permeate from the filtration of process waters. With that membrane the permeate flux is lower than for nanofiltration membranes but the permeate quality is significantly better when considering inorganic ions such as sodium, chloride, nitrate and inorganic carbon (bicarbonate). The result of this study: decrease pollutants parameter in Tajan Rivers that is effluent.

Keywords: Wastewater, Pulp-Paper Industry, Color Reduction, MBR.
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