## عنوان مقاله:

Dynamic Performance Analysis and Simulation of a Full Scale Activated Sludge System Treating an Industrial Wastewater Using Artificial Neural Network

## محل انتشار:

ماهنامه بین المللی مهندسی, دوره 26, شماره 5 (سال: 1392)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

Due to changeable nature of the industrial wastewaters, proper operation of an industrial wastewater treatment plant is of prior importance in order to keep the process stability at the desired conditions. Inthis mean, simulation of the treatment system behavior using artificial neural network (ANN) can be aneffective tool. This paper evaluates long term performance and process stability of a full-scale integrated industrial wastewater treatment system (Faraman's industrial estate, Kermanshah) inremoving organic matter over a 2-year operation. The wastewater treatment system is composed ofstatic screens, an equalization tank, an aerobic biological tower (TF) and an activated sludge (AS) reactor. Multilayer Feed-forward Networks of ANN was used to forecast the process performance of AS system. In this study, mixed liquor suspended solids (MLSS) (mg/l) and organic loading rate(OLR) (kg COD/m3.d) were selected as input parameters and TSS removal, COD removal and sludge volume index (SVI) as output parameters. The results showed a very good agreement between the actual and modeled data (R2> 0.9). The ANN models provided a robust tool for predicting the performance of wastewater treatment plants and as a result, the online monitoring parameters could beapplied for prediction of effluent characteristics

## کلمات کلیدی:

Full-scale Industrial Wastewater Treatment,Plant,TF-AS,Artificial Neural Network,Modeling