عنوان مقاله:

(Modeling the Amount of Ferric Chloride in the Treatment Plant (Case Study: Lowshan Power Plant

محل انتشار:

بیست و هفتمین کنفرانس شیمی آلی ایران (سال: 1398)

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خلاصه مقاله:

The water in the nature is not applicable directly as feed water for boiler of the thermal power plant due to the precipitating of its insoluble materials on the thermal installations and it must be purified under physical and chemical treatment before use. One of the most important parts of the treatment process is consumption of the chemicals during the coagulation process. For this purpose, the modeling with GMDH neural networks was applied to predict the amount of ferric chloride used in the coagulation unit using the input-output data set collected from the Lowshan power plant during the six-month period from September 2018 to February 2019. The GMDH neural network was used to modeling, which is a self-organized and one-sided network consisting of several layers in which each layer includes several neurons, and all neurons have the same structure1,2. Experimental data sets were divided into two groups for modeling: 70% for network learning and 30% for model testing. After modeling, the model results were compared to experimental data (Fig. 1) and tested with the statistical parameter (the coefficient of determination) of R2 = 0.9989, which the results show a good agreement with experimental results.

کلمات کلیدی:

Water treatment, Ferric chloride, Modeling, GMDH –NN, Power plant