

Kabsch-Korbutowicz, M., Kutylowska, M. Artificial Neural Networks – A Viable Option for Predicting Changes in Water Turbidity after Treatment by Coagulation/Ultrafiltration. *Ochrona Srodowiska* 2010, Vol. 32, No. 2, pp. 15–20.

Abstract: Artificial neural network modeling is widely used in water treatment technology as an alternative method to deal with functions of several variables. In the study reported on in this paper consideration was given to the possibilities of using artificial neural networks to predict the turbidity of infiltration water after treatment by the integrated coagulation/ultrafiltration process. To forecast the turbidity of the permeate it seemed advisable to create different structures of the multilayer perceptrone with one hidden layer. Raw water turbidity, water turbidity after coagulation, transmembrane pressure, permeate flux, water temperature and water pH were adopted as input signals. One neuron at the output of the network described the value of the turbidity retention coefficient. It has been demonstrated that the neural network of the parameters MLP 7-9-1 was characterized by the least mean-square error in forecasting. For this network the coefficient of correlation equaled 84.38%. Simulation results have revealed that the convergence with experimental data was sufficiently good (although not ideal).

Keywords: Artificial neural networks, water treatment, turbidity, coagulation, ultrafiltration, submerged membranes.