عنوان مقاله:

Comparing the capability of various models for predicting of the Bayer process parameters

نویسندگان:

Ahad Ghaemi - *Iran University of Science and Technology*

Shahrokh Shahhosseini - *Iran University of Science and Technology*

Mostafa Mahmoudian - *Jajarm Company*

خلاصه مقاله:

In the present study, prediction of Alumina recovery efficiency (A.R.E), the amount of produced red mud (A.P.R), red mud settling rate (R.S.R) and bound-soda losses (B.S.L) in Bayer process red mud has been carried out for the first time in the field. These predictions are based on Lime to bauxite ratio and chemical analyses of bauxite and lime as Bayer process feed materials. Radial basis function (RBF) and Multilayer perceptron (MLP) as artificial neural networks and the multiple linear regression (MLR) method have been used to predict these parameters in the Iran Alumina Company. According to the obtained results, it is evident that the RBF method has outperformed the other two methods in the prediction of A.R.E, A.P.R and B.S.L. However the Multilayer perceptron (MLP) method can produce better and more precise results in the prediction of R.S.R. This research also exposes more effective variables on A.R.E, A.P.R, R.S.R, and B.S.L.

کلمات کلیدی:

Bayer Process, Red Mud, Bauxite, Alumina Recovery, Bound-Soda Losses

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