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Application of Artificial Neural Network in Modeling separation of microalgae

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ABSTRACT

The economization and commercialization of the biofuels production from microalgae require solving some problems facing it. One of the most important and expensive stages is the separation of microalgae from the medium culture. The modeling of Separation biological processes can be used as a safe tool to save the economy and avoid repeated testing. Among the methods of modeling, artificial neural network is accurate and widely used in biotechnological processes. Results of the study showed that correlation coefficient reached 1 indicating that there is a good match between actual values and those predicted by modeling. From a total of ١٨ data, two-thirds of data was used to train a network and the remaining third was used to assess the modeling accuracy. The middle transition function purelin , output transfer function tansig and the number of neurons (five) were determined as the best parameters to train the network. The error rate of network training was estimated to be 0.0511 and error evaluation of the network accuracy was found to be 0.992.

Keyword: iofuel, separation, microalgae, *modeling, artificial neural networks, regression*

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