عنوان مقاله:

Application of artificial neural networks for modeling of the absorption of carbon dioxide into aqueous blends of Mono and Diethanolamine with N, N-dimethylethanolamine

محل انتشار:

پنجمین کنگره بین المللی مهندسی شیمی (سال: 1386)

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خلاصه مقاله:

Absorption rates of CO2 into aqueous solutions of N,N-dimethylethanolamine (DMEA) and blends of Monoethanolamine (MEA) and Diethanolamine (DEA) with DMEA were measured in a stirred cell and atmospheric pressures. The influence of gas flow rate, temperature and liquid concentration on the absorption rates of CO2 into aqueous solutions of DMEA was studied. In the next step, small amounts of MEA and DEA were added to DMEA solutions, and the absorption of CO2 into these blends was studied. The results show that the addition of small amounts of MEA and DEA to DMEA solutions results in a significant enhancement of CO2 absorption rates. The proposed model based on artificial neural network (ANN) could predict the CO2 concentration during absorption time in optimized conditions. A comparison between the predicted results of the designed ANN model and experimental .data was also conducted

کلمات کلیدی:

Gas absorption, Carbon dioxide, N,N-dimethylethanolamine, Mixed amines, Artificial neural network