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Comparison of Spiegler–Kedem combined with film theory model and original SK model

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ABSTRACT

In recent days, membrane technology has obtained a special position in water and wastewater treatment, and modeling of such processes seems to be necessary. If the modeling of these processes had not been applied properly, this success would have not been obtained. Researchers should modify traditional models according to the recent needs, and by getting the benefits of modified models, they can get better information to develop the membrane performances through designing appropriate equipment, putting proper input variables such as applied pressures and temperature and cutting down the cost of removal of various salts. It can give key methods to membrane makers to manage membrane processes well. According to the basic concept of Spiegler–Kedem (SK) model, this work shows a way to estimate the parameters of SK model and combined SK model with the film theory (SKCF), and compares SKCF model with SK model, and shows SK model gives better estimations.

Keywords: Nanofiltration; Reverse osmosis; Spiegler–Kedem model; Combined Spiegler–Kedem model with film theory; Modified Spiegler–Kedem model

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