

## The influence of dispersed activated carbon particles of industrial brands with different physicochemical characteristics on the intensity of oxygen mass transfer in gas-liquid system

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### Abstract

A detailed theoretical analysis of the mechanism of oxygen mass transfer enhancement in gas (air)-liquid (water) system under the influence of dispersed activated carbon (AC) particles based on the selection and description of the individual stages of the process was conducted. Physicochemical characteristics of AC particles which may influence on the rate of particular stages of the mechanism were identified. An experimental study of oxygen mass transfer in the gas-liquid system in the presence of particles of several samples of AC with different physicochemical properties was carried out. It was shown that the ability of the AC particles to enhance oxygen mass transfer increased with rise of specific volume of macropores and decreasing of surface wettability and particle size. The optimal value of the AC particles concentration in the liquid phase and the speed of suspension stirring were determined. It has been shown that the experimental data corresponds to theoretical predictions.