Adsorption dynamic characteristics of binary and ternary mixture gases on activated carbon

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Dynamic characteristics of adsorption using a activated carbon were studied through the breakthrough experiment and simulation of H_2/Ar(80%/20%) and H_2/Ar/CH_4(50%/20%/30%) mixtures. Nonisothermal and nonadiabatic models, considering linear driving force model and loading ratio correlation adsorption isotherm model, were considered to compare between prediction and experimental data. As a result, feed rate and adsorption pressure will play an important role in obtaining the adsorption dynamic characteristics. From results were show that breakthrough curve have long tail due to temperature variance in the bed.