

## Adsorption dynamic characteristics of steam methane reforming off-gas on layered bed

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In order to optimize the utilization of an adsorption column, the adsorption and desorption dynamic characteristics of hydrogen mixture gas is investigated using layered bed packed with activated carbon and zeolite 5A. The effects of adsorption pressure, linear velocity and carbon/zeolite ratio on the adsorption dynamics were studied from the experimental and simulated results in the layered bed. The simulation of the adsorption dynamic characteristics utilized Aspen Adsim (Aspen tech, Inc.) and were numerically predicted by using non-isothermal and non-adiabatic model, considering linear driving force model and Dual-site Langmuir adsorption isotherm model.