

Adsorption of Hydrogen Mixture Gas on Zeolite 5A and Activated Carbon

장성철, 최도영, 안의섭, 양세일, 최대기*, 오성근¹
한국과학기술연구원; ¹한양대학교
(dkchoi@kist.re.kr*)

Adsorption experiments for hydrogen mixture gas on zeolite 5A and activated carbon. Adsorption equilibrium of gas were measured to use the static volumetric method. The experiment data were fitted very well with Langmuir-Freundlich isotherm equations.

Here, multi-component adsorption equilibria were predicted by using the parameters obtained from single component adsorption isotherm. The binary data were verified by well-known isotherm models: extended Langmuir, extended Langmuir-Freundlich, ideal adsorbed solution theory and vacancy solution model. As a result, the models were found to describe the experimental data with a reasonable accuracy. In especial, extended L-F model and Dual-site Langmuir predict equilibria of mixture better than any other models. On the other hand, dynamic experiments for hydrogen mixtures were conducted in a single and layered bed under various operating conditions.