

The Prediction of Mixture Gases Adsorption from Single Component Isotherms

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This study is to predict adsorption equilibrium data for their mixture gases from pure gas adsorption data of CH₄, C₂H₄, and H₂ on activated carbon. Multi-component adsorption equilibria could be predicted from the parameters obtained from only pure component isotherms and compared with experimental data. The binary experimental data were applied to four models: extended Langmuir, extended Langmuir-Freundlich, Ideal Adsorbed Solution theory (IAST), and Vacancy Solution Model (VSM). The models were found to describe the experimental data with a reasonably accuracy. Extended L-F model predicts equilibria of mixture better than any other model.