Optimum Conditions of Hydrogen Separation through Experiment and Simulation of PSA Process

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This study performed that optimal conditions of hydrogen separation find through experiment and simulation of PSA process. All experiments and simulations were assumed non-isothermal and non-adiabatic conditions and targeted to parametric analysis of the PSA process variables, such as adsorption time, adsorption pressures, feed rates and P/F ratio. Equilibrium and mass transfer coefficient were calculated LRC isotherm equation and LDF model. Aspen ADSIM (AspenTech. Ltd.) was utilized for the estimation and the simulation of the PSA process cycles. Combined study of the experiments and the mathematical modeling suggested an optimal set of the process conditions to maximize the purity and recovery of the hydrogen product.