

Separation process selection using intelligent system

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In this research, a new gas separation process selection method using an intelligent system has been studied. Gas composition, flow rate and separation objective were selected as key features for developing a selection system and the characteristics of each separation method such as membrane permeability, boiling point, affinity and operating condition flexibility were used as underlying knowledge. Two approaching methods, artificial neural network and Euclidean distance, were used for constructing the system. The system was tested by implementing a system for furnace off-gas separation case. By random case training we confirmed that artificial neural network could follow the traditional process selection model's behavior. We also made a candidate set of separation process with priority rank under the key features using this selection model. These new concepts of the process selection method can be applied to other process selection method with their specific key features.