

### Construction of shortcut model for amine scrubbing CO<sub>2</sub> capture process

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Amine scrubbing is a promising CO<sub>2</sub> capture technology that can be adapted to various CO<sub>2</sub> sources. For industrial users, it is important to estimate regeneration heat and cost to determine adaptation of the CO<sub>2</sub> capture process. Unfortunately, conventional studies of amine scrubbing processes has turned aside to CO<sub>2</sub> capture for power plant sources, and studies of application to industrial CO<sub>2</sub> sources is started recently. Therefore, information of amine scrubbing regeneration heat and cost is limited unless they conduct rigorous process simulation or pilot-plant scale research. Hasan et al suggested input-output models of CO<sub>2</sub> capture process including amine scrubbing, membrane separation, and pressure swing adsorption. These model allows decision makers to estimate cost information of amine scrubbing process without rigorous simulation or experiment. However, the model proposed by Hasan is not complete model as it considers only feed flowrate and CO<sub>2</sub> concentration. Herein, we suggests an advanced model for amine scrubbing CO<sub>2</sub> capture process that considers feed pressure and CO<sub>2</sub> capture rate, and utility prices. This model probably offers more useful cost estimation.