

Developing simultaneous design procedure for carbonation reactor and CCU process using integrated platform of process simulator and CFD

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In process systems engineering, there are several steps for designing overall process. Especially, conceptual design step should be performed primarily because it is easy to solve overall design problem when its complexity decreases by dividing overall problem into sequential sub-problems. However, in detailed design step which is roughly next step of conceptual design, there are no opportunities to change conceptual design of process and this limitation can block some combinations of process design and detailed design. In this study, we integrated process simulator used for conceptual designing and computation fluid dynamics used for detailed designing simultaneously and applied to CCU process and reactor for checking its adequacy.