

A Chemical Looping Combustion Process Design Procedure

Brahimi Djamila, 최정후*, 류호정¹
건국대학교 화학공학과; ¹한국에너지기술연구원
(choijhoo@konkuk.ac.kr*)

In this work, a design procedure for a chemical looping combustion (CLC) process is proposed. In this proposed method both the reaction kinetics and population balance of oxygen carrier (OC) particles in each reactor are taken into account. The design parameters were evaluated for optimal design of a CLC system, where complete combustion of methane to carbon dioxide and water is achieved. The optimal design approach allows to minimize the solid circulation rate and solids inventory required for complete conversion of methane in both reactors. This design procedure is demonstrated using a lab.-scale core-annulus bubbling fluidized-beds process.