

Dynamic and Steady-State Simulation of Molten Carbonate Fuel Cell

경지현, 양대륙*
고려대학교
(dryang@korea.ac.kr*)

In this study, the simulation of Molten Carbonate Fuel Cells (MCFC) systems in both steady-state and dynamic conditions are introduced. In steady-state simulation, total balance of process was simulated using the Aspen plus and the stack was rigorously simulated in detail using Computational Fluid Dynamics (CFD) code. From the steady-state simulation, the interactions among the different devices of the process was investigated and the sensitivity of important variables, such as the steam to methane ratio, the pressure, the feed air and etc, were performed. From the dynamic simulation, the quantitative response of the system to several disturbances was obtained and used to design control system and the process design.