

A numerical study on polarization behavior for modeling the Solid Oxide Regenerative Fuel Cell (SORFC)

정정열, 윤도영[†]

광운대학교

(yoondy@daisy.kw.ac.kr[†])

A Solid Oxide Regenerative Fuel Cell (SORFC) has been characterized in both a Solid Oxide Electrolysis Cell (SOEC) MODE and a Solid Oxide Fuel Cell (SOFC) mode reversibly. Since SORFC is operated under the high operating temperature condition, it has relatively lower Open-Circuit Voltage (OCV) and activation overpotential emerged at electrodes. Thus, experimental studies on SORFC have been conducted actively. In contrast, modeling studies on SORFC have not been proceeded because of different polarization characteristics of SOEC mode and SOFC mode. In this study, effects of the operating condition on the polarization behavior and performance will be analyzed for the modeling SORFC.