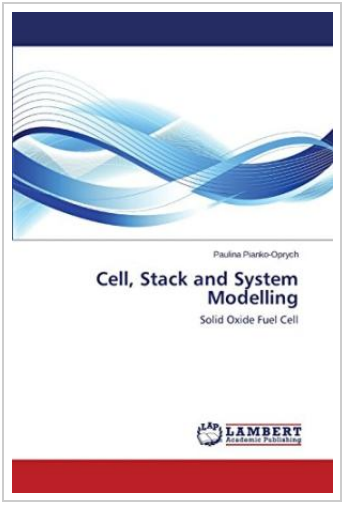

Cell, Stack and System Modelling

By Pianko-Oprych, Paulina

Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Solid Oxide Fuel Cell | Development of a SOFC system requires proper modelling approaches and the use of numerical process simulators, which will provide clear insight into various aspects of the system operation. One way to couple mass and heat transport phenomena with electrochemical processes at the micro-scale with velocity and temperature distributions in the air and fuel channels at the macro-scale while including aspects of system components integration is to use multi-scale modelling approach in fuel cell research. A concept of numerical modelling of Solid Oxide Fuel Cells at different length scales: system, component and fluid transport at the micro- and macrostructures of electrodes up to cell scale was presented. The major features of multi-scale approach that covers three main types of numerical methods: Computational Chemistry, Computational Fluid Dynamics and Process Simulator tools were described in this book. Presented modelling studies with various degrees of complexity enable a deeper understanding of the mechanisms of processes taking place in the Solid Oxide Fuel Cells. The role of computation in supporting SOFC system development was clearly recognised and summarized. | Format: Paperback | Language/Sprache: english | 107 gr | 220x150x3 mm | 68...

Reviews

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