

### Analysis of the Sulfur Poisoning in Solid Oxide Fuel Cells

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Solid oxide fuel cells has strong points for their high efficiency and especially flexibility in their fuels. As nickel are used for the SOFC's catalyst in anode side, the hydrogen sulfide (H<sub>2</sub>S) gives sulfur poisoning effect on triple phase boundary(TPB) and cause the performance drop of the cell. In this study, the SOFC degradation mechanisms were evaluated, and the sulfur coverage were calculated by temkin isotherm. The computational fluid dynamics (CFDs) electrochemical model for 2D sulfur damage model was presented to described the performance of SOFCs due to sulfur poisoning in the SOFC electrodes by the commercial CFD code FLUENT.

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