

Application of the BZCY for preventing the Nickle penetration from the electrolyte of proton conductor

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Oxide proton conductor is promising electrolytes for low-temperature SOFCs because of their high ionic conductivitys and low activation energy for proton conduction at low-temperature. Ceramic proton conductors are good candidate materials for fuel cell operation at relatively low temperature. Recently, Zuo et al. reported a new composite materials of proton conductor, $\text{Ba}(\text{Zr}_{0.1}\text{Ce}_{0.7}\text{Y}_{0.2})\text{O}_{3-\delta}$ (BZCY) which shown good conductivity as well as enough chemical and thermal stability over wide range of operating condition. We report that BZCY powder is synthesized by Pechini and co-precipitation method for fabrication of anode-supported BZCY electrolyte. The electrolyte of the single cell using the BZCY fabricated by co-precipitation prevented the Nickle penetration, while the single cell made using the BZCY powder by Pechini method easily detected the Nickle.