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Solid oxide fuel cells with proton-conducting $La_{0.99}Ca_{0.01}NbO_4$ electrolyte

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Abstract

Several proton conductive ceramic oxides are evaluated for potential application in ceramic-NiO composite anodes for proton-conducting $La_{0.99}Ca_{0.01}NbO_4$ (LNO) electrolyte-based fuel cells. Chemical compatibility tests show that most of the existing proton-conducting oxides are unfavorable for application in LNO electrolyte-based fuel cells because of undesirable reactions at high temperatures. Further considering the chemical compatibility with NiO and the ability to promote the densification of the deposited LNO electrolyte, LNO-NiO composite anode proves

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