

Effect of Ni doped  $\text{Sr}_{0.92}\text{Y}_{0.08}\text{TiO}_{3-d}$  Anode in running on Wet methane fuel for solid oxide fuel cells

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In order to get a high and stable performance, Solid oxide fuel cell's anode materials must stable chemically and physically at high temperature and reducing environment. They are not compatible with electrolyte and other components of cell. So far, we use Ni/YSZ as a anode material of solid oxide fuel cells. But Ni/YSZ is poisoned by carbon and sulfur when we apply hydrocarbon and LPG, others as a fuel. Many researchers study in perovskite materials as a anode of solid oxide fuel cells in order to get a high and stable performance for long time at operating condition that apply  $\text{CH}_4$  or common fuels. Topics of study are doped perovskite (a-site, b-site) that have structure defect or coating a MIEC materials on anode surface that enlarge the active site to oxidate a carbon and sulfur deposited on a anode surface. This experiment purpose is doping Nickel on a-site of SYT ( $\text{Sr}_{0.92}\text{Y}_{0.08}\text{TiO}_{3-d}$ , Ytria doped  $\text{SrTiO}_3$ ) perovskite material and getting a structure defect (oxygen vacancy), operating in hydrocarbon fuel for long time. Nickel doped SYT is prepared by Pechini's method and material phase is analysed via XRD and TEM We use mapping method to investigate a Nickel's agglomeration in Nickel doped SYT.