

### Development of new cathode material for molten carbonate fuel cell

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Fuel cell is one of the most promising devices for power generation because of high efficiency and low emission. Among many type of fuel cell, molten carbonate fuel cell (MCFC) is considered as the type of fuel cell suitable for large capacity power generation. For commercialization of MCFC, there are many problems which have to be solved. On the many problems, the slow kinetics about oxygen reduction reaction in cathode side is one of the most limiting factors in the energy conversion efficiency of MCFC. Alternative cathode materials for leading fast ORR kinetics are therefore highly sought for MCFC applications. Improved cathodic reaction polarization would have a dramatic impact on the fuel cell efficiency. To improve cell performance, the perovskite materials is coated on a porous Ni plate by a vacuum suction method. The performance and EIS results of perovskite material coated cathode were compared with those of uncoated cathode. The cell voltage of the single cell using the perovskite material coated cathode, measured at 650 °C with current density of 150mA/cm<sup>2</sup> is 0.837V and it is higher than that of the cell with uncoated conventional cathode, 0.805V.