# Ni-Al alloy with relatively high aluminum contents for fuel cell applications

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Ni-Al intermetallic alloy is known as the promising high temperature structural material because of excellent high temperature strength and corrosion/oxidation resistance and relatively low density. Therefore, it has been variously studied focusing on electricity generation, energy conversion system, especially anode materials for molten carbonate fuel cell (MCFC) systems with sufficient creep resistance, high electricity conductivity and high electrochemical-catalytic activity for the purpose of improvement of the lifetime of the MCFC. However, high manufacturing cost due to preparation process around 1400℃ becomes the obstacle to the commercialization. In the point of reducing fabrication cost, the preparation of Ni-Al alloy at low temperature at 400 ~ 600℃ is very attractive and it was already developed that Ni-Al powder synthesis using AlCl3 activator at low temperature in vacuum atmosphere by our group. In this study, Ni-Al and Ce-modified alloy compound with relatively high aluminum contents over 15wt% were prepared and characterized with XRD and SEM. Methane reforming catalytic performance test in MCFC was also carried out.