

## Sinter-, Coke-resistant Ni Catalyst for Dry Reforming of Methane Reaction

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Recently, a demand for alternative energy resource is increased because of lack of fossil energy resource and greenhouse effect caused by greenhouse gases such as CO<sub>2</sub> and CH<sub>4</sub>. To not only reduce greenhouse gases but also generate energy source or syngas, dry reforming of methane (DRM) reaction has studied actively. Among various metal catalysts, Ni catalysts show high activity for this reaction with very cheap cost, but have poorer stability than precious metal catalyst because of its catalytic deactivation via particle sintering and coke formation.

Here, we have synthesized Silica-coated Ni/SiO<sub>2</sub> catalyst with 5.2 nm Ni nanoparticle in size, showed high stability for DRM reaction performed at 800°C. The catalyst retained its initial high activity for 170 hrs, whereas Ni/SiO<sub>2</sub> catalyst without coating presented severe degradation in activity caused by Ni sintering and coke formation.