S2-002

CO2 reforming of methane based on TiO2/Ni-based catalysts

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CO2 reforming of methane (CRM) based on Ni catalysts was studied using temperature programmed reaction (TPR). The onset temperature of the CRM reaction was increased in a repeated TPR experiments. X-ray photoelectron spectroscopy (XPS) and Raman spectroscopy showed formation of graphite structures on Ni during CRM reaction, which deactivate Ni-surfaces. Attempts were made for inhibiting deactivation of Ni surfaces and reducing onset-temperature of the CRM reaction by various surface modification techniques, which will be presented in this poster.