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Catalytic dry reforming on Ni-zeolite: the influence of support surface.

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Within the process for the hydrogen production method, partial oxidation, steam reforming, dry reforming or oxy-reforming, and now also tri-reforming, the dry reforming of methane is one of the most attractive way to produce syngas due to the utilization of greenhouse gas CO_2. The dry reforming present the advantage that leads to the formation of a more suitable H_2/CO ratio, very close to 1. Nickel-based catalysts have been proved to be most suitable catalysts for hydrocarbon reforming. Furthermore, in order to reduce the tendency of coke formation, various zeolites supports have been tested.

In this paper the strong influence of the support on the catalytic activity of the Ni-oxide species, both in selectivity and in conversion, is shown and even the best performance of the catalyst in less coke deposition is emphasized.