

## عنوان مقاله:

A Study of a substitution of Fe-Ni alloy catalysts instead of commercially used nickel catalysts in the production of methane from hydrogen

## محل انتشار:

چهارمین کنفرانس هیدروژن و پیل سوختی (سال: 1396)

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## خلاصه مقاله:

In order to achieve an efficient catalyst in the process of formation methane from hydrogen, under similar conditions, a series of the catalysts in the range of (0-100 wt. %) nickel, with respective addition of iron, were prepared by a coprecipitation method with  $\text{NH}_4\text{OH}$  as precipitation agent. The catalytic activity of these catalysts in the range of temperatures between 200-500°C compared with pure nickel. The results indicated that addition of 20% iron to nickel significantly improves the stability and activity of pure nickel catalyst in the Sabatier reaction. It means that the bimetallic Fe-Ni alloy catalysts are much better than the monometallic nickel catalyst for this reaction. Since such alloy catalyst should be both more active and cheaper than the Ni catalyst, we can suggest that it has potential for usage in the industrial sector

## کلمات کلیدی:

Hydrogen; Iron-nickel bimetallic catalysts;  $\text{CO}_2$  methanation; Catalytic activity

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/642069>

