

Instytut Inżynierii Chemicznej

Adres artykułu: <https://iich.gliwice.pl/pl/artykul/investigation-on-binary-copper-based-catalysts-used-in-the-ethanol-steam-reforming-process>

Investigation on binary copper-based catalysts used in the ethanol steam reforming process

Data publikacji:	15.07.2020
Tytuł publikacji:	Investigation on binary copper-based catalysts used in the ethanol steam reforming process
Autorzy:	Maria Kulawska , Łukasz Hamryszak , et al.
Informacje o czasopiśmie:	Reaction Kinetics, Mechanisms and Catalysis

The use of copper-based binary catalysts, Cu/Zr oxides and Cu/Al oxides, has been examined to produce hydrogen from ethanol in the ethanol steam reforming process. The examined catalysts were compared with non-noble bicomponent catalysts consisting of oxides of nickel and cobalt: Ni/Zr Co/Zr, Ni/Al and Co/Al, prepared and tested in the identical way. Catalytic tests were carried out in the fixed-bed reactor in the temperature range 433–873 K for initial molar ratio of ethanol to water equal to 1:3. Ethanol conversion approached near 100%. Catalysts were characterized by XRD, TPR. Cu/Zr oxides. The catalyst showed very good selectivity. It is significant that carbon monoxide appeared only above 600 K and its selectivity has not exceeded 3% in the higher temperature range. No methane has been detected. Hydrogen yield was relatively stable in the temperature range from 513 to 873 K. Similarly, in the presence of Cu/Al oxides neither CO nor CH₄ were found in the products. The correlation between activity of examined catalysts and textural properties was not found.

Metryczka

Opublikował w BIP:	Marek Tańczyk
Data opublikowania:	11.05.2026 10:34
Liczba wyświetleń:	18