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# Sonochemically Preparation and Characterization of Bimetallic Ni-Co/$Al_2O_3$-$ZrO_2$ Nanocatalyst: Effects of Ultrasound Irradiation Time and Power on Catalytic Properties and Activity in Dry Reforming of $CH_4$

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## Abstract

The catalytic performance of nanostructured Ni-Co/$Al_2O_3$-$ZrO_2$ catalysts, prepared by ultrasound-assisted impregnation method was examined in dry reforming of methane. The effect of irradiation power and irradiation time have been studied by changing time (0, 20, 80 min) and power of the sonication (30, 60, 90 W) during the synthesis which resulted in different physiochemical properties of the nanocatalyst. The nanocatalysts were characterized by XRD, FESEM, PSD, EDX, TEM, TPR-$H_2$, BET, FTIR and TGA analyses. Based on the

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