

Effect of various weight Sb over Ni-Mo/ γ -Al₂O₃ for syngas production by combined steam and carbon dioxide reforming

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This study was conducted to figure out to convert to useful syngas(H₂/CO) and the resistance coke in combined steam and carbon dioxide reforming(CSCRM) of methane. Alumina was supported 1 wt% Mo and 12 wt% Ni by the impregnation method. The catalyst was modified with various weight percent of antimony oxide(0-5 wt%) over Ni-Mo/ γ -Al₂O₃ in the same method.

In conclusion, Ni-Mo-Sb/ γ - Al₂O₃ showed the strong resistance toward carbon formation and improved the catalytic activity compared with Ni/ γ - Al₂O₃. Among them, Ni-Mo-Sb(3)/ γ - Al₂O₃ obtained the long-term stability and highest catalytic activity.