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Steam Reforming of Methanol on Ni/Al₂O₃ Catalyst in a Pd-membrane Reactor

[Eiichi KIKUCHI](#)¹⁾, [Shou KAWABE](#)¹⁾ and [Masahiko MATSUKATA](#)¹⁾

1) Dept. of Applied Chemistry, School of Science and Engineering, Waseda University

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The application of the membrane reactor to steam reforming of methanol was studied as a hydrogen producing reaction. The activities, stabilities and selectivities of Cu/ZnO, Ni/Al₂O₃ and Ru/Al₂O₃ catalysts were tested using a conventional fixed-bed flow reactor. Ni/Al₂O₃ catalyst showed the most stable activity at 723 K but relatively low hydrogen yield because of methanation. However, the hydrogen-permeable membrane reactor suppressed methanation and hydrogen yield was enhanced compared with the conventional reactor. The membrane reactor was more effective at higher temperatures and higher W/F.

Keywords: [Membrane reactor](#), [Palladium membrane](#), [Steam reforming](#), [Methanol](#), [Hydrogen production](#)

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