

## Catalyst Deactivation in Ethanol Steam Reforming at Low Temperature

노현석\*  
연세대학교  
(hsroh@yonsei.ac.kr\*)

To produce H<sub>2</sub> from ethanol steam reforming at low temperatures, Rh/CeO<sub>2</sub>-ZrO<sub>2</sub> catalysts with various CeO<sub>2</sub>/ZrO<sub>2</sub> ratios have been prepared and applied for the target reaction at low temperatures. All the catalysts deactivated with time on stream due to carbonaceous deposition at low temperatures. The addition of 0.5% K has a beneficial effect on catalyst stability, while 5% K has a negative effect on catalytic activity. The catalyst could be regenerated considerably even at ambient temperature and could recover its initial activity after regeneration above 200°C with 1% O<sub>2</sub>. The results are most consistent with catalyst deactivation due to carbonaceous deposition on the catalyst.