Enhanced catalyst life of CeO_2 coated SUZ-4 on MTO reaction

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The framework of SUZ-4 has 10-ring and 8-ring which is similar to that of FER. It has 3-dimensional connected channels in which 10-ring straight channels interconnected by two zigzag 8-ring channels. In this work, SUZ-4 was synthesized at 150 ℃ for 4 days using tetraethylammoniumhydroxide as a structure directing agent. The gel composition was $33.3SiO_2$: $1Al_2O_3$: 14.7KOH : 6.2TEAOH : $781H_2O$. The catalytic activity of SUZ-4 in MTO reaction decreased rapidly within 30 min at 400 ℃ with 1.2 h^{-1} WHSV. Coating of 30 wt% of CeO_2 onto the catalyst resulted in the increase of the end of life up to 250min.