



## Development MPr-SO<sub>3</sub>H-KIT-6 catalyst for furfural production

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Methyl propyl sulfonic KIT-6 catalyst (MPr-SO<sub>3</sub>H-KIT-6) was successfully synthesized by sequential co-condensation and oxidation. The catalyst was characterized the physical and chemical properties by X-ray diffraction (XRD), Transmission electron microscope (TEM), N<sub>2</sub> sorption, Fourier transform infrared spectroscopy (FT-IR), NH<sub>3</sub> temperature programmed desorption (NH<sub>3</sub>-TPD) and Thermogravimetric analysis (TGA). This catalyst was applied for furfural production through dehydrogenation of xylose. The dehydration of xylose was studied at various temperature of 140, 155 and 170°C, and reaction times of 2 h, respectively. The best condition was reaction temperature 170°C at 2 h to obtain furfural selectivity and xylose conversion at 57.1 %, 96.0%, respectively. From this study, the order and 3 dimension structure of KIT-6 and the surface polarity played the important effects on the production rate of furfural.

**Keywords:** MPr-SO<sub>3</sub>H-KIT-6, Xylose dehydration, Furfural, Acid catalyst.