

## Synthesis of Ni/Mesopore Silica-Alumina Catalyst for Hydrocracking of Pyrolyzed $\alpha$ -Cellulose

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**Abstract :** Synthesis of Ni supported on mesopore silica-alumina (MSA) for hydrocracking of pyrolyzed  $\alpha$ -cellulose had been carried out. The silica and alumina were extracted from Sidoarjo mud. Gelatin from catfish bone was used as a template for the mesopore design. The MSA was synthesized by using hydrothermal method at 100 °C for 24 h and calcined at 550 °C for 4 h then characterized by using X-Ray Diffraction Spectrometer (XRD) and Nitrogen Gas Sorption Analyzer (GAS). The Ni metal was loaded to the MSA by wet impregnation method. The catalytic activity in the hydrocracking reaction of pyrolyzed  $\alpha$ -cellulose was carried out at 450 °C for 2 h. The MSA synthesized in this work is an amorphous material with specific surface area, total pore volume, and average pore diameter of 212.29 m<sup>2</sup>/g, 1.29 cm<sup>3</sup>/g, and 20.05 nm, respectively. The Ni/MSA catalyst produced 73.02 wt.% of liquid product in hydrocracking of pyrolyzed  $\alpha$ -cellulose.

**Keywords :** catalyst, gelatin, hydrocracking, mesopore silica-alumina,  $\alpha$ -cellulose

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