Catalytic performance of metal pillared ilerites for direct DME(dimethylether) synthesis from syngas

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The capability of metal pillared ilerites for direct synthesis of dimethylether (DME) from syngas was explored. The metal pillared ilerites were synthesized with good crystalline structures and characterized by XRD, BET and FT-IR. The X-ray patterns of the synthesized ilerites were in very good accordance with the structures proposed by earlier workers.

The reaction was carried out in a fixed bed reactor with the prepared metal pillared ilerite catalysts at different temperatures (200, 250, 300℃), 20 bar and CO/H2 ratio of 1:2. For Cu/Zn-ilerites catalyst, CO conversion was about 50-60% and selectivity to DME was about 82-90% at 250℃. This catalyst could be used several times without any change in its catalytic activity.