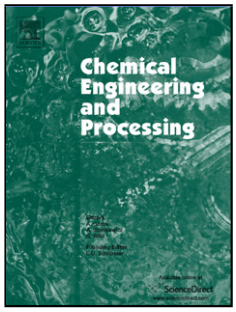

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Zeolite Minilith: A Unique Structured Catalyst for the Methanol to Gasoline Process

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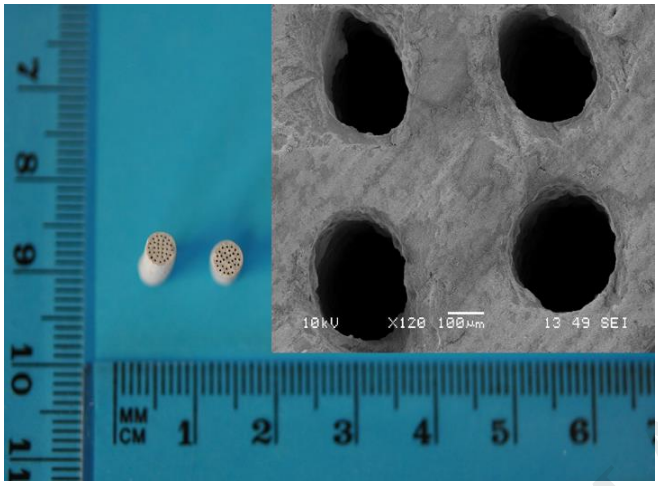
Graphical Abstract



Highlights

- Structured microchannel reactors called ZSM-5 miniliths were fabricated and characterised
- The ZSM-5 miniliths have a high catalyst loading and good transport properties
- ZSM-5 miniliths gave a similar gasoline yield at lower conversion than ZSM-5 powder
- Pressure drop through ZSM-5 miniliths were significantly lower than with powder

Abstract

Structured microchannel H-ZSM-5 catalysts containing up to 80 wt% zeolite (balance bentonite) were fabricated by unit operations of paste preparation, extrusion, drying and firing. The structured catalysts, called miniliths due to their micrometre-range dimensions, were composed of parallel cylindrical channels with a wall thickness of 200 – 300 μm, density of 2.1 channels/mm^2 and a channel diameter