

## Fischer-Tropsch Synthesis in a Slurry Bubble Column Reactor

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Fischer-Tropsch Synthesis (FTS) is one of the main methods of utilization natural gas, and it has gained a significant industrial attention as an alternative method to use limited crude oil resource. The activity and selectivity to C<sub>5</sub>+ hydrocarbons on Co/Al<sub>2</sub>O<sub>3</sub> (20 wt% Co) Fischer-Tropsch catalyst were investigated under various reaction temperature(220–260 °C), system pressure(1.0–3.0 MPa), GHSV(1000–6000 ml/g/hr), and solid concentration(10–30 wt%) in a slurry bubble column reactor (0.05 m diameter × 1.5 m height) to estimate the design and scale-up parameters. The CO conversion increased with increasing reaction temperature, system pressure and solid concentration. The local maximum CO conversion was exhibited at GHSV of 1500–2000 ml/g/hr and superficial gas velocity of 3.4–5.0 cm/s.