

Optimal Product Selection from Gas-To-Liquid Processes under Uncertain Price Scenarios

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Considering the environmental and economic benefits of GTL products, it is meaningful to evaluate in-depth economics for GTL products (FT-diesel, DME, MeOH) under various scenarios. Next, three GTL processes (FT-diesel, DME, MeOH) were modeled using ASPEN PLUS™ that uniformly utilize the natural gas as feedstock. Then the capital cost and operating cost were calculated through constructed model by considering material and energy balances. Maximizing the economic value of natural gas could be estimated by comparing capital costs and cash flow among the three candidate products. Payout time is used to compare the profitability among them. Using sensitivity analysis, the influence of the fluctuation of the price of natural gas on the economic value of GTL products was estimated.