Fischer-Tropsch Process for the Synthesis of Feedstock Materials for the Fine- Chemical Industry.

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Abstract

According to current economic analysis, the oil price will be subject to substantial fluctuations, and refineries and crackers have to deal with various feed quality [1-3]. To deal with such a situation, the mode of operation of both has to change, and depending on the feed used the range of products is significantly different. Thus, a refinery plant can quickly become unprofitable for the operator and the product range has to be adjusted in terms of profit and demand. As a consequence, a shortage of base intermediates chemicals required in downstream processes is likely to evolve [4].
Fischer-Tropsch synthesis (FTS) has the potential to get independent of such market fluctuations. In the FTS, hydrocarbons are formed corresponding to the Anderson-Schulz-Flory distribution; the carbon Number can be controlled for example by skillfully adjusting the catalyst or the reaction conditions [4].
Within this project, cobalt and iron based catalysts have been studied to meet the desired hydrocarbon products. Here, current results of different FTS catalysts are presented showing improved catalyst behavior.
Based on this experimental data, the catalyst showing the best performance is currently investigated in more detail to suppress unwanted FTS products more efficiently.

Sources

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[4] A. Jess and P. Wasserscheid, Chemical Technology: An integral textbook. pp. 437–445, 604–615, 664–685, Weinheim,Germany: Wiley-VCH, 2013.