Optimal Design and Operation of Methanol-to-Propylene Process

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As the price of crude oil is increasing, various methods for supplying olefins are getting more important. Among olefins, the demanding rate of propylene rises more steeply than that of others. In a point of this view, methanol-to-propylene (MTP) process developed by Lurgi can be a good alternative for supplying propylene. This process uses series of fixed bed reactors over modified ZSM-5 catalysts for conversion to propylene. Because it is recently developed process, the optimizing is required to save energy cost by heat integration and reducing recycle flow by process control. In this work, optimal design and operating condition are proposed with the simulation result of Lurgi MTP process.