

## **The State of Studies of the Fischer-Tropsch Process in Russia**

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Literature on the Fischer-Tropsch (FT) process in Russia goes back to the middle 20s of the last century. About 400 scientific publications and 140 patents related to this process are currently available. Prof. Ya. T. Eidus, who created a strong scientific school in the Institute of Organic Chemistry of the USSR Academy of Sciences, was the leader of the early studies on the FT process. Since 1978 his colleague (and former student) Prof. A. L. Lapidus has headed this research team. Another prominent scientific school is headed by Prof. Bashkirov, the dean of the Faculty of Liquid Fuel at the Moscow Institute of Fine Chemical Technology (named after M.V. Lomonosov).

The main emphases have been on the design of new catalysts for FT processes and modification of existing catalysts based on cobalt, iron, copper, manganese, etc. The effect of various promoters on the reaction rate and mechanism has been studied. Much attention was focused on the effect of support, catalyst preparation and regeneration procedures. The process was targeted for the production of both methane and light, middle and heavy fuel fractions. Kinetic and process studies of FT synthesis, on the other hand, have received minimum attention in Russia..

The FT process was practiced on a pilot-scale at the Novochoerkassk Chemical Plant many years ago. Profs. Eidus, Lapidus and Bashkirov worked in close contact with the Plant, but no information on the results obtained during this operation is currently available.

For the last 78 year, two groups in the Boreskov Institute of Catalysis have focused considerable attention on applied aspects of practical realization of FT synthesis. The main activities of these groups concern the analysis of the process in various reactor types and at different stages using mathematical modeling and applied thermodynamic methods. We have developed a model based upon published experimental data. Further development in this direction requires additional experimental kinetic data for the derivation of expanded kinetic models of the reaction on different catalysts. Because of the lack of sufficient material resources for this research work, cooperation with additional foreign scientific teams is highly desirable.