

A New Catalyst for Durene Conversion

Scientists from the Institute of Coal Chemistry (ICC), Chinese Academy of Sciences has recently developed a new catalyst and related techniques for the conversion of durene (1,2,4,5-tetramethylbenzene). The catalyst, which has been running for more than 2,000 hours, showed high stability with a durene conversion rate of 100%.

The conversion of methanol to hydrocarbons liquid fuels and chemicals is one of the hottest research topics in coal chemical industry. Compared with the Fischer-Tropsch process, the methanol to gasoline (MTG) process shows high energy efficiency, straightforward technological process and less expenditure on the equipment. However, the MTG process will also produce plenty of durene (usually more than 8%), which is solid at room temperature (m.p. 79.24°C). The existence of durene affects gasoline quality and raises production cost of the MTG process.

To solve this problem, ICC scientists developed a set of catalysts and related techniques to convert durene and benzene to toluene, xylene, trimethylbenzen, etc., which all have low melt point and high octane rating. The technology will hopefully provide a solution to both the durene problem



A scientist from ICC is operating the durene conversion device. (Photo courtesy Dr. ZHANG Ye)

in the MTG process and the surplus benzene from the petroleum industry.