

Direct catalytic methane conversion into ethylene

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In 2014, the group of Xinhe Bao in Dalian Institute of Chemical Physics reported that isolated iron sites on a silica support can catalyze the high-temperature nonoxidative conversion of methane to mainly ethylene with the coproduction of some aromatics (Science, 2014, 344, 616). After this pioneering work, several groups have tried to reproduce this work, but intensive debates on its reproducibility is currently going on. In this presentation, we will share the results that we obtained during the reproduction of this work and the results with our own catalysts. The results showed that most of catalysts are located in a similar, inverse conversion-vs-selectivity trend. The major products were always a coke at high conversion level.