conferenceseries.com 6th Global Experts Meeting on Nanomaterials and Nanotechnology April 21-23, 2016 Valencia, Spain

Skillful design of bifunctional titanosilicate with hierarchical nano-structure

Chunfeng Shi, Jun Long, Min Lin, and Bin Zhu Research Institute of Petroleum Processing, China

One pot process (involving *in situ* H2O2 production with simultaneous conversion to organic oxides in the same reactor without refining), is being regarded as more promising technology to the environmental benign production of organic oxides, for its good potentials for ulterior savings in capital and production costs. In this direct oxidation technology, the catalysts used are bi-functional and mostly consist of precious-metal and titanosilicate. At present, the key issue of the above process is to design new catalysts for improving the synthesis efficiency. One of our aims is to design and prepare this nano bi-functional catalyst with intra-particle voids. In this abstract, our own work on bi-functional catalysts especially for their skillful design and characterization will be summarized and introduced concisely, especially our recent advance in developing titanosilicate with intra-particle voids. In particular, recently, we have synthesized a titanosilicate with intra-particle voids being applied in one pot process, which has been prepared by semi-*Aprial 28, 2016* synthetic method, which involves the addition of precious metal sources and organic-alkaline to reaction mixture under hydrothermal conditions. The synthetic process results in the combination of nano precious metal particles with titanosilicate framework, and redistribution of active Ti species throughout the crystals, thereby enriching the surface of hollow crystals with catalytic species. Besides easily separated and recycled, the bifunctional catalyst may be a feasible application in industries in the near future. At this meeting, we will briefly summarize our own work on this new type of nano titanium silicalite with precious-metal being combined and hollow structure, especially for their characteristic and catalytic performance, as well as our recent advances in developing the bi-functional titanosilicate with intra-particle voids.

Biography

Chunfeng Shi completed his PhD in 2008 at Research Institute of Petroleum Processing (RIPP), SINOPEC, and then stayed as an Engineer. Currently, he is the Professor and the Director of Nanomaterials Research Group at the long term research department in RIPP. His main research field is nanomaterials with catalytic oxidation function. He has published more than 30 papers in reputed journals and has applied for more than 100 patents in catalysis field.

shicf.ripp@sinopec.com

Notes: