Highly Efficient Bimetallic Nanoparticles Supported Catalysts for Selective Synthesis of Higher Alcohols from Syngas

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Higher alcohols production from syngas is one of the major processes in industry; however, low yield and poor selectivity still remain the major hurdles associated with the use of existing catalysts. Therefore, developing catalysts for synthesizing higher alcohols efficiently and selectively has been one of the major challenges in catalysis. Fe based nano particle with suitable support are desirable catalysts for selective synthesis of higher alcohols.

Bimetallic nanoparticles supported catalysts were prepared and well characterized by various physico chemical methods such as BET surface area, XRD, TPR,TPD (NH3), TG/DTA, SEM and TEM. The catalytic activity was studied for CO hydrogenation reactions under fixed bed down flow reactor. The effects of different parameters, temperature, pressure, GHSV and catalyst support on the catalytic activity were studied in order to get the best catalyst recipe with optimum reaction conditions.