PERFORMANCE OF Ni-La/SiO_2 CATALYST PRODUCED FROM IN-SITU GLYCINE-NITRATE PROCESS

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Extended Abstract

In-situ glycine-nitrate process is a synthesis process in which metal-supported catalyst is produced through a combination of impregnation and self-combustion approaches. Combustion reaction occurs exothermically after the self-ignition of glycine and metal nitrates in the presence inert support. A rapid high temperature reaction resulted in metal particles deposited onto a support [1]. Highly dispersed metal particles as a result of a chemical reaction propagates through the support due to rapidly moving combustion wave [1]. The activity of metal-supported catalysts are significantly affected by their dispersion on catalyst support [2]. Metal-supported catalysts derived from common catalyst preparation such as impregnation method has shown formation of large agglomerates of small metal particles on the catalyst support. This has led to catalyst thermal sintering during methane cracking process caused by the collapse of pore structure and loss of internal surface area [3, 4].

Keywords: In-situ glycine-nitrate process; catalyst dispersion; Ni-La supported on SiO_2, methane cracking

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