

APMS Supported Polymerization Catalysts

Plastics made through ethylene polymerization are useful as materials that are able to be recycled. These polymerization techniques often utilize an early-metal catalyst, such as the Ziegler-Natta zirconium catalyst. However, iron has recently become more popular due to its abundance and low cost. Additionally, the ability to attach a catalyst to a solid support is desirable for easy purification and separation of products. The research goal here is to develop a pincer based single-site heterogeneous polymerization catalyst, where the metal can be covalently attached to a silica-based backbone, in this case acid prepared mesoporous silica (APMS). This allows for only one site on the metal to perform the catalysis. The synthesis of the metal complex as well as immobilization onto APMS will be discussed.