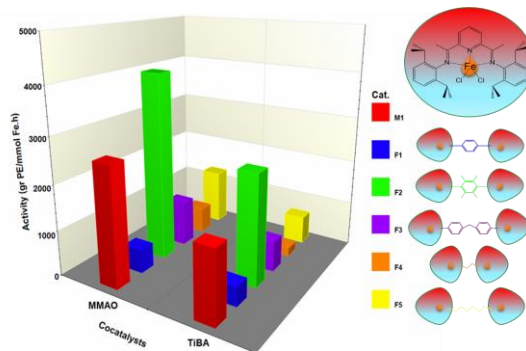


Dinuclear Fe-based catalysts for polymerization of ethylene; Effect of Spacer

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Multinuclear LTM catalysts are also interesting due to the unusual and unique pattern in the polymerization. Among the LTM catalysts, imino pyridine Fe-based catalysts with the high activity competitively to metallocene are one of the fascinating structures that produce HDPE or α -olefins. The effect of spacer between the active site is very crucial. These effect depends on some structural paramteres of spacer such as length, nature (flexible/rigid) and substituents. Based on this, each parameter can control the catalyst behaviour and polymer properties, respectively. In this work, we prepared a series of dinuclear Fe-based catalysts which were used in polymerization of ethylene and MMAO and TiBA employed as cocatalysts. The results showed that the higher electronic and steric effects provided by spacer lead to higher stability and activity of catalysts. Ortho-aryl effect exhibited a key role in performance of the catalyst that sterically bulky groups can shield the axial sites and promote the propagation rate. Longer distance between the centers through the higher electron density delivered by the spacer improves the catalyst activity and reduces interaction between the centers.



Biography

Mostafa Khoshsefat is PhD student at University of Alberta (U of A) and Iran Polymer and Petrochemical Institute (IPPI). He has completed his BSc and MSc from University of Tehran (UT) and Ferdowsi University of Mashhad (FUM). His accomplishments are including National Elite (Iran) Award Recipient (2016), Graduated state (Iran) with honors at Master's degree in Polymer Engineering (First position) (2017), Research Award Recipient at University of Alberta (2017). He has published 5 full papers and more than 25 conference papers.

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