Abstract Preview of 'Diimine backbone' (C9W883)

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Preferred Symposium	Reaction Engineering and Catalysis
Preferred Session	Catalytic Reaction Engineering
Allow Recording	My presentation may be recorded for viewing after the conference
Invited Speaker	-
Learning Outcomes	Steric and electronic effects of backbone structure on catalyst behavior in 1- hexene polymerization

Preview of your abstract

Polymerization of 1-hexene using binuclear LTM catalysts **M. Khoshsefat*** <*Mostafa.khoshsefat@yahoo.com*>, **A. Dechal** <*A.Dechal@ippi.ac.ir*>, **S. Ahmadjo** <*S.Ahmadjo@ippi.ac.ir*> and **M.M. Mortazavi** <*M.Mortazavi@ippi.ac.ir*>, Department of Catalyst, Iran Polymer and Petrochemical Institute (IPPI), P.O. Box 14965/115, Tehran,Iran; **G.H. Zohuri** <*Zohuri@um.ac.ir*>, Department of Chemistry, Ferdowsi University of Mashhad, P.O. Box: 91775,Mashhad, Iran

Two binuclear late transition metal (LTM) catalysts (A=2,4,6-trimetyl-C_6H_2-N=C-($C_{10}H_6$) -C=N-$C_6(CH_3)_4$-N=C-($C_{10}H_6$)-C=N-2,4,6-trimetyl-C_6H_2}($NiBr_2$)$_2$ and B=2,4,6-trimetyl-C_6H_2-N=C-(C_2H_6)-C=N-$C_6(CH_3)_4$-N=C-(C_2H_6)-C=N-2,4,6-trimetyl-C_6H_2}($NiBr_2$)$_2$) were used in 1-hexene homopolymerization. The experiments carried out using A/EASC and B/EASC catalytic systems at the optimum conditions of each catalyst.The productivity of each catalyst, viscosity average molecular weight (M_v) and polydispersity index (PDI) of obtained poly(1-hexene) were compared. The activity of A was higher than B due to presence of acenaphthene group on C-C bond through the increasing of steric hindrance, decreasing of N-Ni-N bond angel leading to block axial sites by methyl groups and high cooperative effect of metal centers in the A. Moreover, the M_v of resulted poly(1-hexene)in presence of catalyst (A) was 2.32×10^5 g. mol^{-1} and PDI=2.11 which were higher and broader than B catalyst ($M_v=1.56\times10^5$ g.mol^{-1}, PDI=1.94). These results can be attributed to steric and electronic effects of backbone which can control the rate of propagation to chain transfer reactions.

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