

Cobalt and Iron complexes of {1- [6-(2-Naphthyl)-2-Pyridinyl] -5-Hexenylidene} - {2,6-Diisopropyl-phenyl}-Amine combined with dinuclear CCG catalyst to generate ethylene copolymer by the addition of ethylene

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Catalysis which involves the cooperative action of two or more catalytic cycles in a single reactor has been developed to produce linear low density polyethylene (LLDPE). In this approach, one catalyst produce α -olefin oligomers, another catalyst incorporate appeared α -olefin into high molecular weight polyethylene. LLDPE has produced by the only addition ethylene.

Thus, a cobalt and iron diimine Complexes of {1- [6-(2-naphthyl)-2-pyridinyl] -5-hexenylidene} - {2, 6-diisopropyl-phenyl}-amine which potentially produce 1-butene exclusively and combine with our dinuclear constrained geometry catalyst to polymerize LLDPE were synthesized.

IR, $^1\text{H-NMR}$ spectra and EA of the synthesized complexes provide firm evidence for the anticipated cobalt diimine structure. LLDPE with a molecular weight in the range of 120000 – 300000 (g/mol) and melting point around 120 was successfully produced by using the new catalysts system which was activated by Modified Methylaluminoxane (MMAO). The ability to produce LLDPE of those systems has been investigated at two temperatures: 40 and 70. The results show that LLDPE obtained at both temperature with 1-butene content from 5 to 22%.

Biography

Yanyan Fei has completed her bachelor's degree from School of Chemical Engineering and Technology, Shanghai University, China and continues her graduate studies in School of Display and Chemical Engineering, Yeungnam University, Daegu, South Korea.

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