What is claimed is:

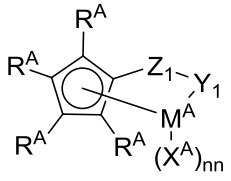
1. An olefin polymerization catalyst system comprising:

(A) a first olefin polymerization procatalyst,

(B) a second olefin polymerization procatalyst, and

(C) a chain shuttling agent,

wherein the second olefin polymerization procatalyst comprises a metal-ligand complex of Formula (I):



(I),

wherein M^A is a Group III or Lanthanide metal that is in a +3 formal oxidation state;

R^A, independent in each occurrence, is selected from the group consisting of (C_1-C_{40})hydrocarbyl,; (C_1-C_{40})heterohydrocarbyl; $Si(R^{B1})_3$; $Ge(R^{B1})_3$; $P(R^{B1})_2$; $N(R^{B1})^2$; OR^{B1}; SR^{B1}; NO_2; CN; CF_3; $R^{B1}S(O)$-; $R^{B1}S(O)_2$-; $(R^{B1})_2C$=N-; $R^{B1}C(O)O$-; $R^{B1}OC(O)$-; $R^{B1}C(O)N(R)$-; $(R^{B1})_2NC(O)$-; halogen atom; hydrogen atom; and any combination thereof;

optionally two or more R^A groups can combine together into one or more ring structures, with such ring structures having from 3 to 50 atoms in each ring structure excluding any hydrogen atoms;

nn is an integer of 1 or 2;

Z1 is $[(R^{D1})_nG1]_m$, wherein m = 1, 2 ,3, or 4, and G1 is independently selected from carbon, silicon, germanium or boron; and when G1 is carbon, silicon, or germanium, n=2; when G1 is boron, n=1;

Y1 is bonded to M^A and Z1 and is selected from the group consisting of -O-, -S-, $-NR^{E1}$-, and $–PR^{E1}$-;

each R^{B1}, R^{D1}, or R^{E1} independently is (C_1-C_{30})hydrocarbyl or (C_1-C_{30})heterohydrocarbyl;

each X^A is independently monoanionic or neutral wherein n > 0, and each X^A is independently (C_1-C_{40})hydrocarbon, (C_1-C_{40})heterohydrocarbon, (C_1-C_{40})hydrocarbyl; (C_1-C_{40})heterohydrocarbyl; $Si(R^{C1})_3$; $Ge(R^{C1})_3$; $P(R^{C1})_2$; $N(R^{C1})_2$; OR^{C1}; SR^{C1}; CN; CF_3; $R^{C1}S(O)$-; $R^{C1}S(O)_2$-; $(R^{C1})_2C$=N-; $R^{C1}C(O)O$-; $R^{C1}OC(O)$-; $R^{C1}C(O)N(R)$-; $(R^{C1})_2NC(O)$-; halogen atom; or hydrogen atom;

each R^{C1} independently is (C_1-C_{30})hydrocarbyl or (C_1-C_{30})heterohydrocarbyl;

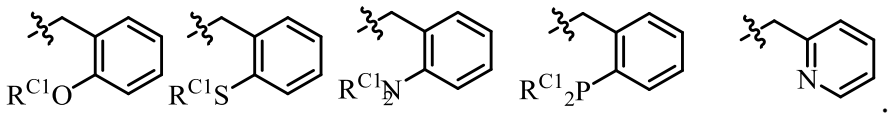
each of the hydrocarbyl, heterohydrocarbyl, $Si(R^{C1})_3$, $Ge(R^{C1})_3$, $P(R^{C1})_2$, $N(R^{C1})_2$, OR^{C1}, SR^{C1}, $R^{C1}S(O)$-, $R^{C1}S(O)2$-, $(R^{C1})2C$=N-, $R^{C1}C(O)O$-, $R^{C1}OC(O)$-, $R^{C1}C(O)N(R)$-, $(R^{C1})_2NC(O)$-, hydrocarbylene, and heterohydrocarbylene groups independently is unsubstituted or substituted with one or more R^S substituents;

each R^S independently is a halogen atom; polyfluoro substitution; perfluoro substitution; unsubstituted (C_1-C_{18})alkyl; F_3C-; FCH_2O-; F_2HCO-; F_3CO-; R_3Si-; R_3Ge-; RO-; RS-; RS(O)-; RS(O)$_2$-; R_2P-; R_2N-; R_2C=N-; NC-; RC(O)O-; ROC(O)-; RC(O)N(R)-; or $R_2NC(O)$-; or two of the R^S are taken together to form an unsubstituted (C_1-C_{18})alkylene, wherein each R independently is an unsubstituted (C_1-C_{18})alkyl; and

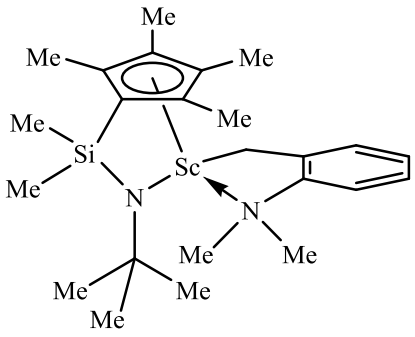
optionally, R^{c1} or R^S may have an additional interaction with M^A.

2. The catalyst system of claim 1, further comprising (D) an activator.

3. The catalyst system of any of the preceding claims, wherein X^A is selected from the group consisting of:



4. The catalyst system of any of the preceding claims, wherein the structure of formula (I) comprises one or more of the following:



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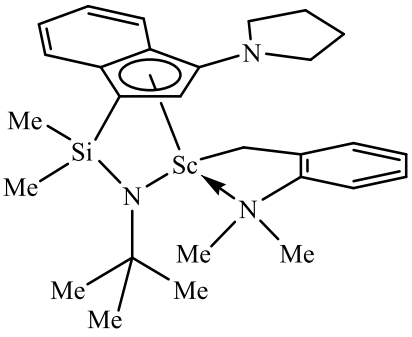
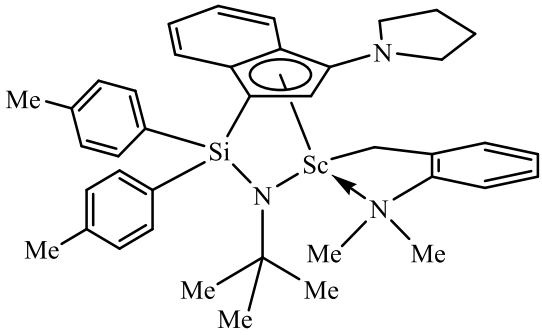


; and



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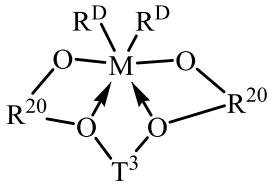
5. The catalyst system of any of the preceding claims, wherein the first olefin polymerization procatalyst (A) and the second olefin polymerization procatalyst (B) have respective reactivity ratios r_{1A} and r_{1B}, such that the ratio (r_{1A}/r_{1B}) under polymerization conditions is 0.5 or less.

6. The catalyst system of any of the preceding claims, wherein the first olefin polymerization procatalyst (A) comprises a metal-ligand complex of Formula (III):



(III), wherein:

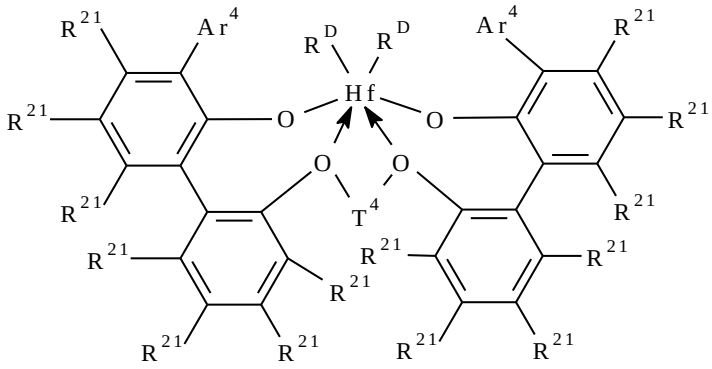
M is zirconium or hafnium;

R^{20} independently at each occurrence is a divalent aromatic or inertly substituted aromatic group containing from 5 to 20 atoms not counting hydrogen;

T^3 is a divalent hydrocarbon or silane group having from 3 to 20 atoms not counting hydrogen, or an inertly substituted derivative thereof; and

R^D independently at each occurrence is a monovalent ligand group of from 1 to 20 atoms, not counting hydrogen, or two R^D groups together are a divalent ligand group of from 1 to 20 atoms, not counting hydrogen.

7. The catalyst system of claim 6, wherein said metal-ligand complex of Formula (III) has the following structure:



, wherein:

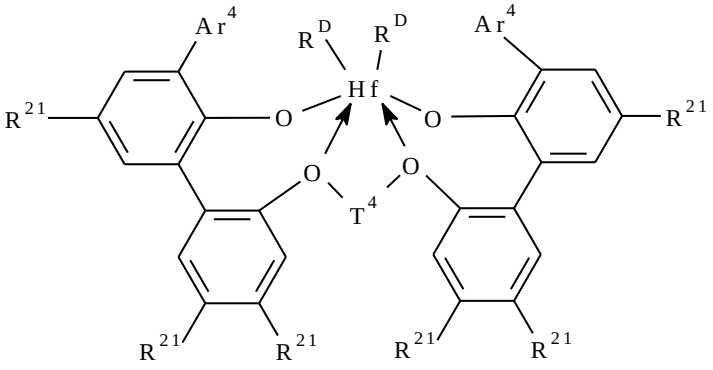
Ar^4 independently at each occurrence is C_{6-20} aryl or inertly substituted derivatives thereof, especially 3,5-di(isopropyl)phenyl, 3,5-di(isobutyl)phenyl, dibenzo-1H-pyrrole-1-yl, naphthyl, anthracen-5-yl, 1,2,3,4,6,7,8,9-octahydroanthracen-5-yl;

T^4 independently at each occurrence is a propylene-1,3-diyl group, a bis(alkylene)cyclohexan-1,2-diyl group, or an inertly substituted derivative thereof substituted with from 1 to 5 alkyl, aryl or aralkyl substituents having up to 20 carbons each;

R^{21} independently at each occurrence is hydrogen, halo, hydrocarbyl, trihydrocarbylsilyl, trihydrocarbylsilylhydrocarbyl, alkoxy or amino of up to 50 atoms not counting hydrogen; and

R^D, independently at each occurrence is halo or a hydrocarbyl or trihydrocarbylsilyl group of up to 20 atoms not counting hydrogen, or 2 R^D groups together are a divalent hydrocarbylene, hydrocarbadiyl or trihydrocarbylsilyl group of up to 40 atoms not counting hydrogen.

8. The catalyst system of claim 6 or 7, wherein said metal-ligand complex of Formula (III) has the following structure:



, wherein,

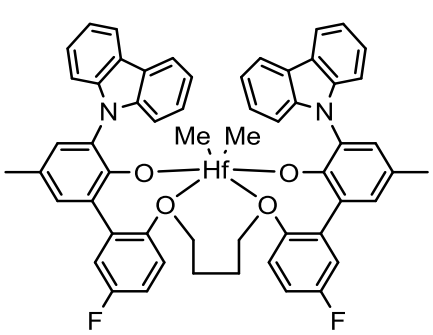
Ar^4 independently at each occurrence, is 3,5-di(isopropyl)phenyl, 3,5-di(isobutyl)phenyl, dibenzo-1H-pyrrole-1-yl, or anthracen-5-yl,

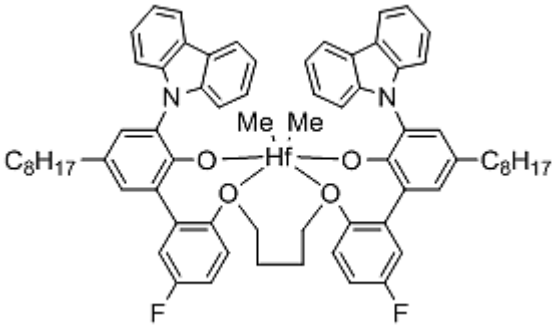
R^{21} independently at each occurrence is hydrogen, halo, hydrocarbyl, trihydrocarbylsilyl, trihydrocarbylsilylhydrocarbyl, alkoxy or amino of up to 50 atoms not counting hydrogen;

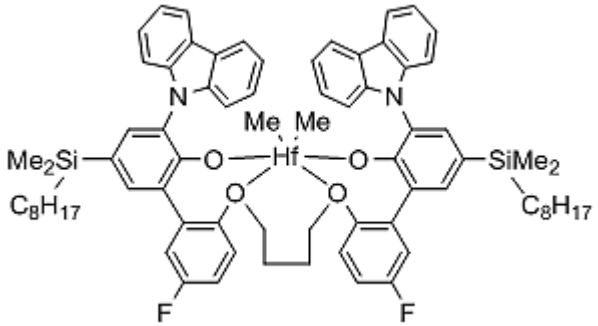
T^4 is propan-1,3-diyl or bis(methylene)cyclohexan-1,2-diyl; and

R^D, independently at each occurrence is halo or a hydrocarbyl or trihydrocarbylsilyl group of up to 20 atoms not counting hydrogen, or 2 R^D groups together are a hydrocarbylene, hydrocarbadiyl or hydrocarbylsilanediyl group of up to 40 atoms not counting hydrogen.

9. The catalyst system of any of claims 6-8, wherein said metal-ligand complex of Formula (III) is selected from the group consisting of:







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10. The catalyst system of any of the preceding claims, wherein the chain shuttling agent is an aluminum, zinc, or gallium compound containing at least one hydrocarbyl substituent having from 1 to 12 carbons.