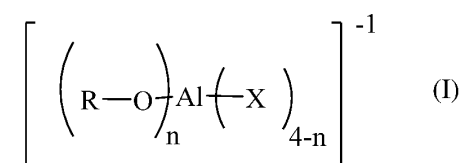


CLAIMS

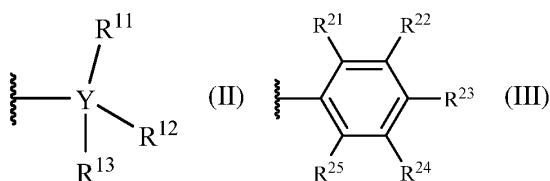
1. A process for polymerizing olefins, the process comprising contacting ethylene and a (C₃–C₄₀)alpha-olefin comonomer in the presence of a catalyst system, the catalyst system comprising a procatalyst and a metallic activator ionic complex, the metallic activator comprising an anion and a counteranion, the anion having a structure according to formula (I):



where:

n is 0 or 1;

each R is independently selected from the group consisting of radicals having formula (II) and radicals having formula (III):



each Y is independently carbon or silicon;

each R¹¹, R¹², R¹³, R²¹, R²², R²³, R²⁴, and R²⁵ is independently chosen from (C₁–C₄₀)alkyl, halogen-substituted (C₁–C₄₀)alkyl, (C₆–C₄₀)aryl, halogen-substituted (C₆–C₄₀)aryl, –OR^C, –SR^C, –H, –F or Cl, wherein at least one of R¹¹⁻¹³ and one of R²¹⁻²⁵ is a halogen-substituted (C₁–C₄₀)alkyl, a halogen-substituted (C₆–C₄₀)aryl, or –F; and

each X is a monodentate ligand independently chosen from halogen-substituted (C₁–C₂₀)alkyl or halogen-substituted (C₆–C₄₀)aryl;

optionally, two X groups in formula (I) are covalently connected;

each R^C is independently halogen-substituted (C₁–C₃₀)hydrocarbyl;

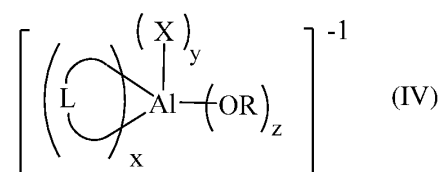
provided that

when the counteranion is Me₂PhN(H)⁺, and the anion is Al(C₆F₅)₄, the procatalyst is not Ph₂C(Cp)(Flu)ZrCl₂ or Et(1-Ind)₂ZrCl₂; and

when the counteranion is $(\text{Ph})_3\text{C}^+$, and the anion is $\text{Al}(\text{C}_6\text{F}_5)_4$, the procatalyst is not $\text{Et}(\text{1-Ind})_2\text{ZrCl}_2$.

2. The process for polymerizing olefins according to claim 1, wherein the procatalyst is a bis-biphenylphenoxy Group IV metal–ligand complex.
3. The process for polymerizing olefins according to claim 1 or claim 2, wherein n is 0 and each X group is independently $-\text{C}(\text{H})(\text{CF}_3)_2$, $-\text{C}_6\text{F}_5$, or $-\text{C}(\text{CF}_3)_3$.
4. The process for polymerizing olefins according to claim 1 or claim 2, wherein n is 1, and R is $-\text{C}(\text{CF}_3)_3$ and each X is $-\text{C}_6\text{F}_5$.
5. The process for polymerizing olefins according to claim 1 or claim 2, wherein n is 0, and three of the four X groups are $-\text{C}_6\text{F}_5$.
6. The process for polymerizing olefins according to claim 1 or claim 2, wherein n is 0, and all four X groups are $-\text{C}_6\text{F}_5$.
7. The process for polymerizing olefins according to any one of claims 1–6, wherein the counteranion is chosen from substituted ammonium, substituted and unsubstituted triarylcarbonium or substituted and unsubstituted ferrocenium.
8. The process for polymerizing olefins according to any one of claims 1–6, wherein the counteranion is $^+\text{N}(\text{H})\text{R}^{\text{N}}_3$, where each R^{N} is independently chosen from $(\text{C}_1\text{--}\text{C}_{30})$ alkyl or $(\text{C}_6\text{--}\text{C}_{20})$ aryl.
9. The process for polymerizing olefins according to claim 6, wherein the counteranion is $^+\text{N}(\text{H})\text{R}^{\text{N}}_3$, where at least two R^{N} are independently chosen from $(\text{C}_{10}\text{--}\text{C}_{30})$ alkyl.
10. The process for polymerizing olefins according to any one of claims 1–6, wherein the counteranion is $^+\text{C}(\text{C}_6\text{H}_5)_3$.
11. The process for polymerizing olefins according to any one of claims 1–6, wherein the counteranion is $^+\text{C}(\text{C}_6\text{H}_4\text{R}^{\text{S}})_3$, wherein R^{S} is $(\text{C}_1\text{--}\text{C}_{20})$ alkyl.

12. The process for polymerizing olefins according to any one of claims 1–11, wherein n is 0.
13. The process for polymerizing olefins according to claim 1, wherein two X groups are covalently connected and the anion has a structure according to formula (IV):



where:

R and each X are as defined in formula (I);

z is 0 or 1; y is 0, 1, or 2; x is 1 or 2; and $2x + y + z = 4$;

L represents the two X groups that are covalently connected;

L is independently chosen from halogen-substituted ($\text{C}_2\text{--C}_{40}$)alkylene, halogen substituted ($\text{C}_2\text{--C}_{40}$)heteroalkylene, or halogen substituted ($\text{C}_6\text{--C}_{40}$)arylene; when z is 1, X is chosen from halogen, halogen-substituted ($\text{C}_1\text{--C}_{20}$)alkyl, halogen-substituted ($\text{C}_6\text{--C}_{40}$)aryl.

14. The process for polymerizing olefins according to claim 13, wherein L is a halogenated diradical biphenyl or halogenated diradical naphthalene-diyl.
15. The polymerization process according to any one of the preceding claims, wherein the metallic activator ionic complex in a high boiling point fully saturated hydrocarbon solution having a concentration of 200 micromoles of metallic activator ionic complex and 20 millimoles of water per liter of the high boiling point fully saturated hydrocarbon solution has a percent dissipation factor of less than or equal to 0.1 at a as measured by the Hydrocarbon Conductivity Test.