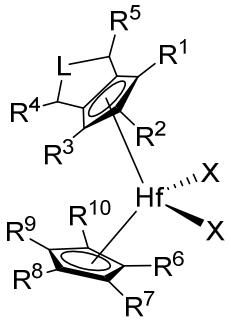
What is claimed is:

1. A bicyclic hafnium metallocene having nonidentical ligands represented by formula (I): $ABMX_2$, where: A is a bicyclic structure; and B is a cyclopentadienyl; M is hafnium; and X is a leaving group, wherein the bicyclic structure comprises a $((C_1\text{-}C_6)alkyl)_n$-substituted cyclopentadienyl ring and a non-aromatic cyclic structure fused with the $((C_1\text{-}C_6)alkyl)_n$-substituted cyclopentadienyl ring such that the bicyclic structure includes 7 to 9 ring carbon atoms and wherein subscript n is 1, 2, or 3.

2. The bicyclic hafnium metallocene having nonidentical ligands of claim 1, represented by structure (I):



where: R^1, R^2, and R^3 are each independently selected from hydrogen or a $((C_1\text{-}C_6)alkyl)$ with the proviso that at least one of R^1, R^2, and R^3 is a $((C_1\text{-}C_6)alkyl)$; R^4 and R^5 are each independently selected from hydrogen or a $((C_1\text{-}C_6)alkyl)$; L is $(C(R^{11})_2)_m$ wherein R^{11} is selected from a substituted or unsubstituted $(C_1\text{-}C_{20})$hydrocarbyl group, a substituted or unsubstituted $(C_1\text{-}C_{20})$heterohydrocarbyl group, a substituted or unsubstituted $(C_1\text{-}C_{20})$aryl group, a substituted or unsubstituted $(C_1\text{-}C_{20})$heteroaryl group, or hydrogen, and subscript m is 0, 1, or 2; R^6, R^7, R^8, R^9, and R^{10} are each independently selected from hydrogen or a $((C_1\text{-}C_6)alkyl)$.

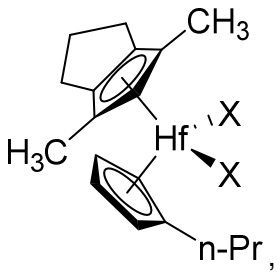
3. The bicyclic hafnium metallocene having nonidentical ligands of ~~any one of claims 1-2~~claim 1, wherein the non-aromatic cyclic structure is unsubstituted.

4. The bicyclic hafnium metallocene having nonidentical ligands of ~~any one of claims 1-3~~claim 1, wherein the cyclopentadienyl ring of the bicyclic structure is

substituted with two alkyls each having from 1 to 6 carbons and wherein the two alklys are respectively located at the 1 and 3 positions of the bicyclic structure.

5. The bicyclic hafnium metallocene having nonidentical ligands of ~~any one of claims 1-4~~claim 1, wherein the cyclopentadienyl of B is substituted with one alkyl having from 1 to 6 carbons.

6. The bicyclic hafnium metallocene having nonidentical ligands of ~~any one of claims 1-5~~claim 1, wherein the bicyclic hafnium metallocene having nonidentical ligands is represented by structure (II):



wherein X is Cl or Me.

7. A bicyclic hafnium metallocene catalyst composition comprising:

a bicyclic hafnium metallocene having nonidentical ligands represented by formula (I): $ABMX_2$, where: A is a bicyclic structure; and B is a cyclopentadienyl; M is hafnium; and X is a leaving group, wherein the bicyclic structure comprises a $((C_1\text{-}C_6)alkyl)_n$-substituted cyclopentadienyl ring and a non-aromatic cyclic structure fused with the $((C_1\text{-}C_6)alkyl)_n$-substituted cyclopentadienyl ring such that the bicyclic structure includes 7 to 9 ring carbon atoms and wherein subscript n is 1, 2, or 3; and

an activator.

8. The bicyclic hafnium metallocene catalyst composition of claim 7 further comprising a support.

9. The bicyclic hafnium metallocene catalyst composition of ~~any one of claims 7-8~~claim 7, wherein a molar ratio of metal in the activator to hafnium in the bicyclic hafnium metallocene having nonidentical ligands is be 1500: 1 to 0.5: 1.

10. The bicyclic hafnium metallocene catalyst composition of ~~any one of claims 7-9~~claim 7, wherein the composition is spray-dried.

11. A method of making a polymer, the method comprising:

contacting the bicyclic hafnium metallocene catalyst composition comprising:

a bicyclic hafnium metallocene having nonidentical ligands represented by formula (I): $ABMX_2$, where: A is a bicyclic structure; and B is a cyclopentadienyl; M is hafnium; and X is a leaving group, wherein the bicyclic structure comprises a $((C_1\text{-}C_6)alkyl)_n$-substituted cyclopentadienyl ring and a non-aromatic cyclic structure fused with the $((C_1\text{-}C_6)alkyl)_n$-substituted cyclopentadienyl ring such that the bicyclic structure includes 7 to 9 ring carbon atoms and wherein subscript n is 1, 2, or 3; and

an activator,

with an olefin under polymerization conditions to make the polymer.

12. The method of claim 11, wherein the polymer has a molecular weight comonomer distribution index (MWCDI) from 0.08 to 2.50.

13. The method of ~~any one of claims 11-12~~claim 11, wherein the bicyclic hafnium metallocene catalyst composition is supported.

14. The method of ~~any one of claims 11-13~~claim11, wherein the bicyclic hafnium metallocene catalyst composition is spray-dried.

15. The method of ~~any one of claims 11-14~~claim 11, wherein contacting the bicyclic hafnium metallocene catalyst composition and the olefin under polymerization conditions to make the polymer occurs in a polymerization reactor.

16. The method of claim 15, wherein the polymerization reactor is a gas-phase polymerization reactor.