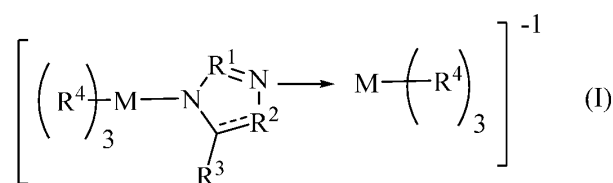


## CLAIMS

1. A process of polymerizing olefins, the process comprising contacting ethylene and a (C<sub>3</sub>–C<sub>40</sub>)alpha-olefin comonomer in the presence of a catalyst system comprising a procatalyst and a bimetallic activator complex, the bimetallic activator complex comprising an anion and a counteranion, the anion having a structure according to formula (I):



where:

each M is independently aluminum or boron;

R<sup>1</sup> is C(H);

R<sup>2</sup> is selected from C(R<sup>L</sup>) or N, wherein each R<sup>L</sup> is independently –H,

(C<sub>1</sub>–C<sub>30</sub>)hydrocarbyl, (C<sub>1</sub>–C<sub>30</sub>)heterohydrocarbyl, or halogen-substituted

(C<sub>1</sub>–C<sub>30</sub>)hydrocarbyl;

R<sup>3</sup> is chosen from –H, (C<sub>1</sub>–C<sub>30</sub>)hydrocarbyl, halogen-substituted (C<sub>1</sub>–C<sub>30</sub>)hydrocarbyl,

(C<sub>1</sub>–C<sub>30</sub>)heterohydrocarbyl, or (C<sub>2</sub>–C<sub>30</sub>)hydrocarbylene;

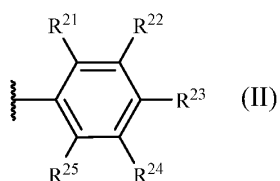
R<sup>3</sup> is optionally connected to R<sup>2</sup> to form a ring;

when R<sup>3</sup> is –H, R<sup>2</sup> is N or C(R<sup>L</sup>), where R<sup>L</sup> is (C<sub>1</sub>–C<sub>30</sub>)hydrocarbyl;

when R<sup>2</sup> is C(H), R<sup>3</sup> is (C<sub>1</sub>–C<sub>30</sub>)hydrocarbyl;

each R<sup>4</sup> is independently selected from the group consisting of a halogen-substituted

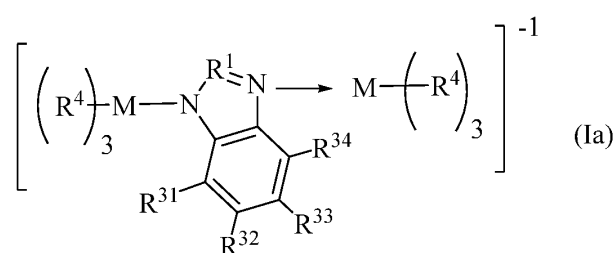
(C<sub>1</sub>–C<sub>30</sub>)alkyl substituted with at least three fluorine atoms, and radicals having formula (II):



in which R<sup>21</sup>, R<sup>22</sup>, R<sup>23</sup>, R<sup>24</sup>, and R<sup>25</sup> are independently chosen from halogen-substituted (C<sub>1</sub>–C<sub>40</sub>)alkyl, halogen-substituted (C<sub>6</sub>–C<sub>40</sub>)aryl, –H, –NR<sup>N</sup><sub>2</sub>, –OR<sup>C</sup>, –SR<sup>C</sup>, or halogen, provided that at least three of R<sup>21–25</sup> are selected from the group consisting of halogen-substituted (C<sub>1</sub>–C<sub>40</sub>)alkyl, halogen-substituted (C<sub>6</sub>–C<sub>40</sub>)aryl, and –F; and

each  $R^N$  and each  $R^C$  is independently  $(C_1-C_{30})$ hydrocarbyl or  $-H$ .

2. The catalyst system according to claim 1, wherein each  $R^4$  is  $-C_6F_5$ .
3. The catalyst system according to claim 1 or claim 2, wherein each M is boron.
4. The catalyst system according to any one of claims 1 to 3, wherein  $R^1$  is  $C(H)$ ;  $R^2$  is  $C(H)$ ; and  $R^3$  is  $(C_1-C_{30})$ hydrocarbyl or  $(C_1-C_{30})$ heterohydrocarbyl.
5. The catalyst system according to any one of claims 1 to 3, wherein  $R^2$  is  $C(H)$ ; and  $R^3$  is  $(C_1-C_{20})$ alkyl or  $(C_1-C_{10})$ alkyl.
6. The catalyst system according to any one of claims 1 to 3, wherein  $R^2$  is  $C(H)$ ; and  $R^3$  is  $(C_1-C_{10})$ alkyl.
7. The catalyst system according to any one of claims 1 to 3, wherein  $R^2$  is  $C(H)$ ; and  $R^3$  is methyl, ethyl, propyl, 2-propyl, *n*-butyl, *tert*-butyl, 2-methylpropyl, pentyl, hexyl, heptyl, *n*-octyl, or *tert*-octyl.
8. The catalyst system according to any one of claims 1 to 3, wherein  $R^2$  is  $C(H)$ ; and  $R^3$  is *n*-octyl or *tert*-octyl.
9. The catalyst system according to claim 1 or claim 2, wherein  $R^3$  is connected to  $R^2$  to form a ring, and the anion of the bimetallic activator complex has a structure according to formula (Ia):



where  $R^{31}$ ,  $R^{32}$ ,  $R^{33}$ , and  $R^{34}$  are independently a  $(C_1-C_{30})$ hydrocarbyl,  $(C_1-C_{30})$ heterohydrocarbyl, or  $-H$ ; and  $R^1$ ,  $R^4$ , and M are as defined in formula (I).

10. The catalyst system according to claim 9, wherein each  $R^4$  is  $-C_6F_5$ .
11. The catalyst system according to claim 9, wherein at least one of  $R^{32}$  and  $R^{33}$  is  $-CH_2Si(R^C)_3$ , where each  $R^C$  is independently  $(C_1-C_{10})$ alkyl.

12. The catalyst system according to claim 9, wherein at least one of  $R^{32}$  and  $R^{33}$  is  $-\text{CH}_2\text{Si}(\text{CH}_3)_2(\text{R}^{\text{C}})$ , where  $\text{R}^{\text{C}}$  is independently  $(\text{C}_1\text{--}\text{C}_{10})$ alkyl.
13. The catalyst system according to claim 9, wherein at least one of  $R^{32}$  and  $R^{33}$  is  $-\text{CH}_2\text{Si}(\text{CH}_3)_2(\text{C}_8\text{H}_{17})$ .