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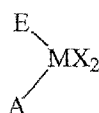
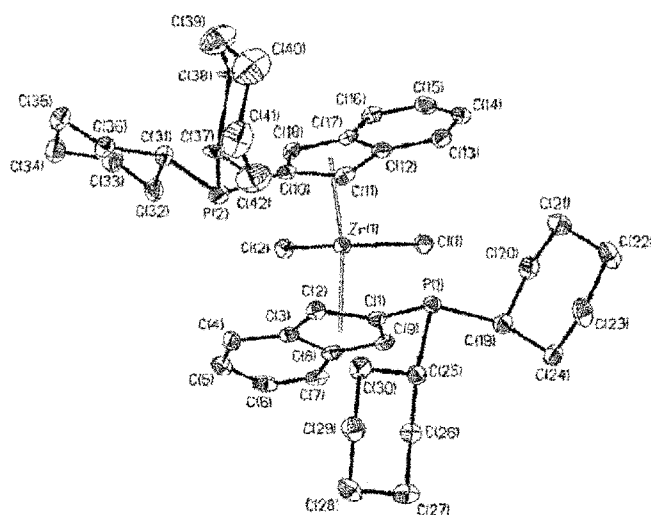
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(54) Title: PHOSPHORUS SUBSTITUTED METALLOCENE COMPOUNDS FOR OLEFIN POLYMERIZATION



(I)

(57) Abstract: This invention relates to a metallocene compounds represented by formula: wherein M is a group 3, 4, 5 or 6 transition metal atom, or a lanthanide metal atom, or actinide metal atom; E is an indenyl ligand that is substituted with a PR<sub>2</sub> group in the two position of the indenyl ligand, where each R is, independently a hydrocarbyl, substituted hydrocarbyl, halocarbyl, or substituted halocarbyl substituent, and additionally, E may be substituted with 0, 1, 2, 3, 4, 5 or 6 R<sup>o</sup> where each R<sup>o</sup> is, independently, a hydrocarbyl, substituted hydrocarbyl, halocarbyl, substituted halocarbyl, silylcarbyl, substituted silylcarbyl, germylcarbyl, or substituted germylcarbyl substituent, and optionally, two or more adjacent R<sup>o</sup> substituents may join together to form a substituted or unsubstituted, saturated, partially unsaturated, or aromatic cyclic or polycyclic substituent; A is a substituted or unsubstituted cyclopentadienyl ligand, a substituted or unsubstituted heterocyclopentadienyl ligand, a substituted or unsubstituted indenyl ligand, a substituted or unsubstituted heteroindenyl ligand, a substituted or unsubstituted fluorenyl ligand, a substituted or unsubstituted heterofluorenyl ligand, or other mono-anionic ligand, or A may, independently, be defined as E or as X; each X is, independently, an univalent anionic ligand, or both X are joined and bound to the metal atom to, form a metallocycle ring, or, both X join to form a chelating ligand, a diene ligand, or an

alkylidene ligand.



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**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
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