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(54) Title: SELF-ASSEMBLED MULTI-NUCLEAR CATALYST FOR OLEFIN POLYMERIZATION

(57) Abstract: A self-assembled olefin polymerization catalyst comprising a transition metal complex according to formula (I) A- $[(L^2(MX_n)_p(MX_n-L^1(MX_n)_q-MX_n-B))_r-MX_n]_y-(L^1(MX_n)_t(MX_n-L^2(MX_n)_u-MX_n-A'))_vMX_n]_z-B$ (I) wherein each M is independently a transition metal selected from the group consisting of Group 3-11 of the periodic table; each X is independently selected from the group consisting of H, halogen, CN, optionally substituted $N(R^a)_2$, OH, optionally substituted C_1-C_{20} alkyl, optionally substituted C_1-C_{20} alkoxy, wherein R^a is independently selected from the group consisting of optionally substituted C_1-C_{20} alkyl, optionally substituted C_6-C_{20} aryl and halogen; A is nothing, $L^1(MX_n)_gMX_n$, or $MX_nL^1(MX_n)_gMX_n$; A' is nothing, $-L^1(MX_n)_gMX_n$, or $-L^1(MX_n)_g$; B is nothing, $-L^2(MX_n)_h$ or $-L^2(MX_n)_hMX_n$; g is 0 or an integer of at least 1; h is 0 or an integer of at least 1; p is 0 or an integer of at least 1; q is 0 or an integer of at least 1; r is 0 or an integer of at least 1; t is 0 or an integer of at least 1; u is 0 or an integer of at least 1; v is 0 or an integer of at least 1; w is an integer of at least 1; y is an integer of at least 1; z is an integer of at least 1; n is an integer selected from 0-6, wherein n is selected depending on the valency of M such that the net charge of each M nucleus is zero or all ligand binding positions of M are occupied; L^1 and L^2 are independently selected ligands, wherein L^1 and L^2 are different, each of L^1 and L^2 having at least two linked coordination units, wherein each coordination unit binds to a different transition metal atom.



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