

22/09/04

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number
WO 03/089444 A1

- (51) International Patent Classification⁷: C07F 17/00, C08F 10/00
- (74) Agent: **DELINE, Douglas, N.**; The Dow Chemical Company, Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).
- (21) International Application Number: PCT/US03/10547
- (22) International Filing Date: 8 April 2003 (08.04.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/373,298 16 April 2002 (16.04.2002) US
- (71) Applicant (for all designated States except US): **DOW GLOBAL TECHNOLOGIES INC.** [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **FENG, Shaoguang, S.** [US/US]; 2812 Walden Woods Drive, Midland, MI 48640 (US). **SHANKAR, Ravi, B.** [US/US]; 408 Scenic Drive, Midland, MI 48642 (US). **TIMMERS, Francis, J.** [US/US]; 4605 Lund Drive, Midland, MI 48642 (US). **KLOSIN, Jerzy** [PL/US]; 2209 Parkwood Drive, Midland, MI 48642 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, 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, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



ACTION



162162

WO 03/089444 A1

(54) Title: SUBSTITUTED POLYCLIC, FUSED RING METAL COMPLEXES AND POLYMERIZATION PROCESS

(57) Abstract: Metal complexes comprising a polycyclic, fused ring ligand comprising at least: (1) a cyclopentadienyl ring, (2) a =J* substituted 7 membered polyatomic ring, where =J* is =(C)c=CR*2, =NR*, or =O, where R* is hydrogen, C₁₋₁₀ hydrocarbyl, N,N-di(C₁₋₄ alkyl)amino, or halogen, and c is 0, 1 or 2; and (3) one or more aromatic ring systems, with the proviso that said substituted 7 membered ring (2), is fused to both the cyclopentadienyl ring (1), and said one or more aromatic ring systems (3), polymerization catalysts, and olefin polymerization processes using the same are disclosed.