



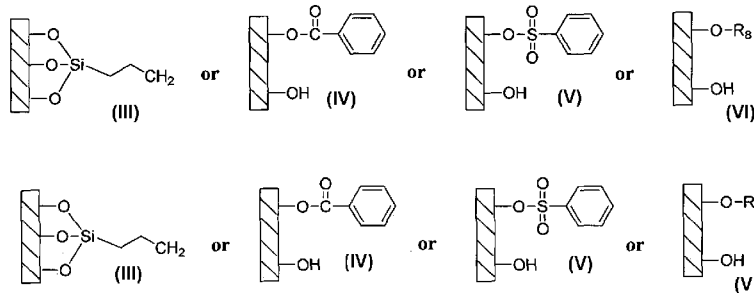
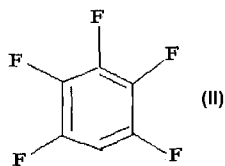
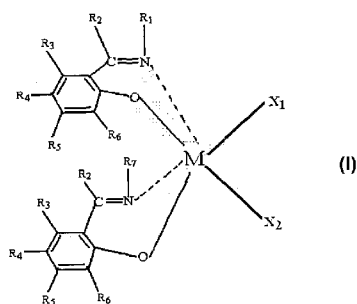
- (51) **International Patent Classification:**
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- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) **Title:** IMMOBILIZATION OF SINGLE SITE CATALYST ON INORGANIC OXIDE SUPPORT FOR PREPARATION OF UHMWPE



(57) **Abstract:** There is provided a chemically immobilized heterogeneous single site polymerization catalyst represented by Formula (I). Wherein, M is a Group IV transition metal; R₁ is Formula (II) or a functionalized inorganic oxide support selected from the group consisting of Formula (III) or Formula (IV) or Formula (V) or Formula (VI) such that R₈ is a molecule having a carboxylic or sulphonic acid group. R₂ - R₅, are independently, H or a hydrocarbon; R₆ is t-butyl; R₇ is a functionalized inorganic oxide support selected from the group consisting of Formula (III) or Formula (IV) or Formula (V) or Formula (VI) such that R₈ is a molecule having a carboxylic or sulphonic acid group. and X₁ and X₂ are independently F, Cl, Br or I. There is also provided a method for the preparation of the chemically immobilized heterogeneous single site polymerization catalyst as represented by Formula (I).



Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*

- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

International application No
PCT/IN2013/000016

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C08F4/64 C08F10/00
 ADD.
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 C08F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2010/139720 A1 (TEIJIN ARAMID BV [NL]; RASTOGI SANJAY [NL]; RONCA SARA [GB]; FORTE GIU) 9 December 2010 (2010-12-09) the whole document -----	1-15

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

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- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search 6 August 2013	Date of mailing of the international search report 14/08/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Thomas, Dominik
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IN2013/000016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2010139720 A1	09-12-2010	EP 2438092 A1	11-04-2012
		WO 2010139720 A1	09-12-2010
