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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 December 2007 (27.12.2007)

PCT

(10) International Publication Number
WO 2007/149799 A1

(51) International Patent Classification:
B01J 21/08 (2006.01) ***C10G 45/52*** (2006.01)
B01J 21/12 (2006.01) *B01J 21/06* (2006.01)
B01J 23/42 (2006.01) *B01J 35/00* (2006.01)
B01J 23/44 (2006.01) *B01J 35/10* (2006.01)
B01J 37/00 (2006.01) *B01J 37/02* (2006.01)
C07C 5/10 (2006.01)

(21) International Application Number:
PCT/US2007/071429

(22) International Filing Date: 18 June 2007 (18.06.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/805,272 20 June 2006 (20.06.2006) US

(71) Applicant *(for SM only)*: **SHELL OIL COMPANY** [US/US]; One Shell Plaza, P.O. Box 2463, Houston, TX 77252-2463 (US).

(71) Applicant *(for all designated States except US)*: **SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.** [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR The Hague (NL).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SMEGAL, John, Anthony** [US/US]; 1632 Beaconshire Road, Houston, TX 77077 (US). **VAN VEEN, Johannes, Anthonius, Robert** [NL/NL]; Badhuisweg 3, NL-1031 Amsterdam (NL).

(74) Agent: **STEWART, Charles, W.**; Shell Oil Company, One Shell Plaza, P.O. Box 2463, Houston, TX 77252-2463 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.

(54) **Title:** A SULFUR TOLERANT NOBLE METAL CONTAINING AROMATICS HYDROGENATION CATALYST AND A METHOD OF MAKING AND USING SUCH CATALYST

(57) **Abstract:** An aromatics hydrogenation catalyst composition which comprises a noble metal component and a support comprising zirconia, silica, and, optionally, alumina. The catalyst composition is manufactured by co-mulling silica, a zirconium compound, and, optionally, alumina to form a mixture that is formed into a shape, such as by extrusion to form an extrudate, with the shape being calcined and noble metal being incorporated into the shape. The catalyst composition may be used in the saturation of aromatic compounds.

WO 2007/149799 A1