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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 June 2011 (23.06.2011)

WIPO | PCT

(10) International Publication Number
WO 2011/075463 A3

(51) International Patent Classification:
B01J 23/85 (2006.01) *B01J 27/049* (2006.01)
B01J 23/883 (2006.01) *C10G 49/04* (2006.01)
B01J 23/888 (2006.01) *C10G 49/06* (2006.01)
B01J 27/043 (2006.01) *C10G 45/08* (2006.01)

(21) International Application Number:
PCT/US2010/060211

(22) International Filing Date:
14 December 2010 (14.12.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/284,524 18 December 2009 (18.12.2009) US

(71) Applicant *(for all designated States except US)*: **EXXONMOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **KLIEWER, Christine, E.** [US/US]; 5 Austin Hill Road, Clinton, NJ 08809 (US). **SOLED, Stuart, L.** [US/US]; 21 Cooks Cross Road, Pittstown, NJ 08867 (US). **MISEO, Sabato** [US/US]; 770 County Road 579, Pittstown, NJ 08867 (US). **BECK, Jeffrey, S.** [US/US]; 2010 Flower Garden Lane, Houston, TX 77077 (US).

(74) Agents: **BAKUN, Estelle, C.** et al.; Exxonmobil Research And Engineering Company, 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(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, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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.

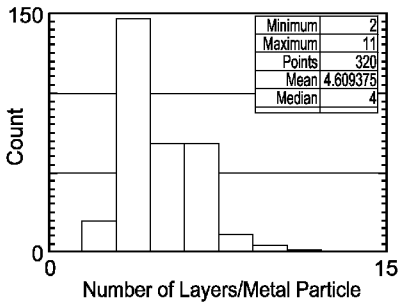
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, 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).

Published:
— *with international search report (Art. 21(3))*

(88) Date of publication of the international search report:
7 September 2012

(54) Title: HYDROPROCESSING CATALYSTS AND THEIR PRODUCTION

FIG. 2



(57) Abstract: In a process for producing a hydroprocessing catalyst, a particulate metal oxide composition comprising an oxide of at least one first metal selected from Group 6 of the Periodic Table of the Elements, preferably molybdenum and tungsten, can be mixed with particles of a sulfide of at least one second metal selected from Groups 8 to 10 of the Periodic Table of the Elements, preferably nickel and cobalt, to produce a particulate catalyst precursor. The particulate catalyst precursor can then be sulfided under conditions sufficient to at least partially convert the particulate catalyst precursor into a layered metal sulfide having defect sites associated with the second metal sulfide.

WO 2011/075463 A3