



- (51) **International Patent Classification:**
C10G 47/06 (2006.01) *C10G 65/12* (2006.01)
- (21) **International Application Number:**
PCT/US2014/065712
- (22) **International Filing Date:**
14 November 2014 (14.11.2014)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/904,730 15 November 2013 (15.11.2013) US
- (71) **Applicant:** **CHEVRON U.S.A. INC.** [US/US]; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US).
- (72) **Inventors:** **ZHAN, Bi-Zeng**; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). **TREVINO, Horacio**; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). **MAESEN, Theodorus Ludovicus Michael**; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US). **LEI, Guan-Dao**; 6001 Bollinger Canyon Road, San Ramon, California 94583 (US).
- (74) **Agents:** **ROSS, Michael, D.** et al.; Chevron Services Company, Post Office Box 6006, San Ramon, CA 94583-0806 (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, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, 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, SA, 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, ST, 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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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

(54) **Title:** LUBRICATING BASE OIL PRODUCTION

(57) **Abstract:** A process is provided for producing a heavy lubricating base oil by hydrocracking a lubricating oil feedstock at high yield. The lubricating oil feedstock contains a hydroprocessed stream that is difficult to process using a conventional catalyst system. The catalyst used in the process includes a mixed metal sulfide catalyst that comprises at least one Group VIB metal and at least one Group VIII metal. The process also provides for hydroisomerization and hydrofinishing process steps to prepare the lubricating base oil.

