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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 October 2006 (19.10.2006)

PCT

(10) International Publication Number
WO 2006/110659 A3

(51) International Patent Classification:
C10G 45/00 (2006.01) *C10G 47/12* (2006.01)
C10G 45/04 (2006.01) *C10G 49/02* (2006.01)
C10G 45/08 (2006.01) *C10G 49/04* (2006.01)
C10G 47/02 (2006.01)

(21) International Application Number:
PCT/US2006/013327

(22) International Filing Date: 7 April 2006 (07.04.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/670,138 11 April 2005 (11.04.2005) US

(71) Applicant *(for all designated States except US)*: **SHELL OIL COMPANY** [US/US]; One Shell Plaza, P.O. Box 2463, Houston, Texas 77252-2463 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **BHAN, Opinder Kishan** [US/US]; 714 Cranfield Court, Katy, Texas 77450 (US).

(74) Agent: **TAYLOR, Richard B.**; SHELL OIL COMPAPNY, One Shell Plaza, P.O. Box 2463, Houston, Texas 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, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

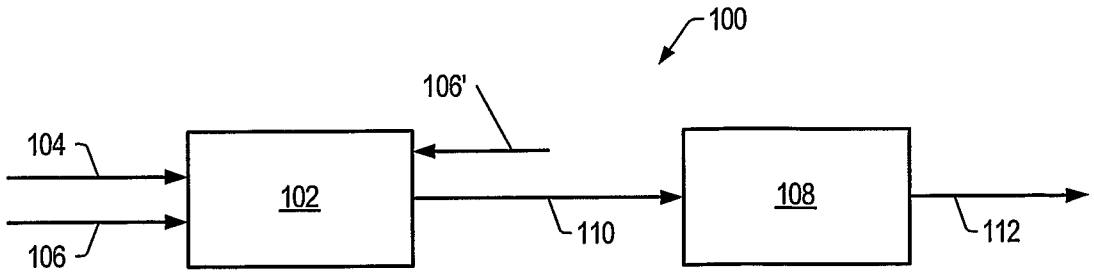
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,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

(88) Date of publication of the international search report:
15 February 2007

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: SYSTEMS, METHODS, AND CATALYSTS FOR PRODUCING A CRUDE PRODUCT



(57) Abstract: Methods for contacting of a crude feed with one or more catalysts, wherein at least one of the catalysts comprises at least 0,3g of column 6-10 metals and/or metal compounds per g of catalyst and a binder, to produce a total product that includes a crude product are described. At least one of the catalysts is a bulk metal catalyst. The crude product is a liquid mixture at 25 °C and 0.101 MPa. The crude product may have MCR content at most 90% of the MCR content of the crude feed. One or more other properties of the crude product may be changed by at least 10% relative to the respective properties of the crude feed.

WO 2006/110659 A3