



- (51) **International Patent Classification:** Not classified
- (21) **International Application Number:**
PCT/EP2010/061509
- (22) **International Filing Date:**
6 August 2010 (06.08.2010)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
PCT/CN2009/000891 6 August 2009 (06.08.2009) CN
- (71) **Applicants (for all designated States except US):** **SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.** [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR The Hague (NL). **CHINA UNIVERSITY OF PETROLEUM** [CN/CN]; Fuxue Road 18, Changping, Beijing 102249 (CN).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **LIU, Zhichang** [CN/CN]; State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Fuxue Road 18, Changping, Beijing 102249 (CN). **XU, Chunming** [CN/CN]; State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Fuxue Road 18, Changping, Beijing 102249 (CN). **ZHANG, Rui** [CN/CN]; State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Fuxue Road 18, Changping, Beijing 102249

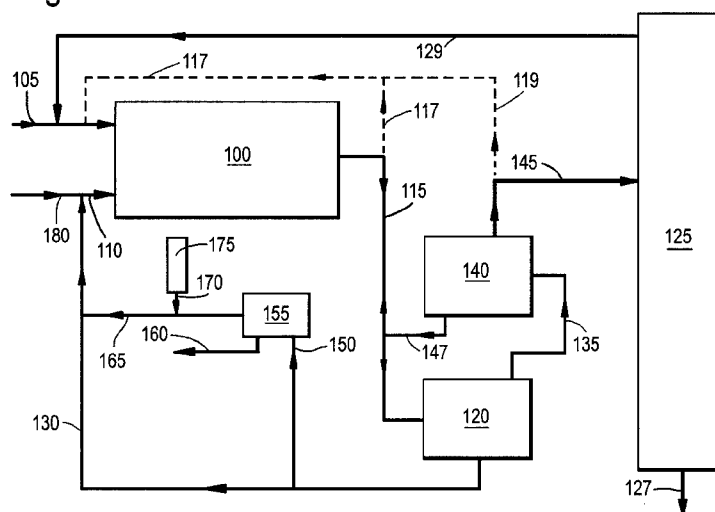
(CN). **MENG, Xianghai** [CN/CN]; State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Fuxue Road 18, Changping, Beijing 102249 (CN). **PATRONI, Ana Cecilia** [AR/NL]; Grasweg 31, NL-1031 HW Amsterdam (NL). **KLUSENER, Peter Anton August** [NL/NL]; Grasweg 31, NL-1031 HW Amsterdam (NL). **VAN DEN BOSCH, Albertus Vincentius Petrus** [NL/NL]; Grasweg 31, NL-1031 HW Amsterdam (NL).

- (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, SE, SI, SK,

[Continued on next page]

- (54) **Title:** PROCESS FOR PREPARING AN ALKYLATE

Fig.1



- (57) **Abstract:** The present invention provides process for preparing an alkylate comprising contacting in a reactor a hydrocarbon mixture comprising at least an isoparaffin and an olefin with an acidic ionic liquid catalyst under alkylation conditions to obtain an alkylate, which process further comprises: - withdrawing an alkylate-comprising reactor effluent from the reactor, wherein the reactor effluent comprises an ionic liquid phase and a hydrocarbon phase; - separating at least part the reactor effluent into an ionic liquid phase effluent and a multiple-phase effluent in a first separation unit; - separating at least part of the multiple-phase effluent into a hydrocarbon phase effluent and another effluent in a second separation unit; and recycling at least part of the ionic liquid phase effluent to the reactor.



SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG). **Published:**

— *without international search report and to be republished
upon receipt of that report (Rule 48.2(g))*