

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 June 2006 (08.06.2006)

PCT

(10) International Publication Number
WO 2006/060158 A1

(51) International Patent Classification:
C07C 2/66 (2006.01) C07C 15/073 (2006.01)

(21) International Application Number:
PCT/US2005/041354

(22) International Filing Date:
16 November 2005 (16.11.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/000,859 1 December 2004 (01.12.2004) US

(71) Applicant (for all designated States except US): **ABB LUMMUS GLOBAL INC.** [US/US]; 1515 Broad Street, Bloomfield, New Jersey 07003-3096 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **YEH, Chuen, Y.** [US/US]; 15 Stratford Circle, Edison, New Jersey 08820 (US). **XU, Jinsuo** [CN/US]; 52 Campbell Rd., Hillsborough, New Jersey 08844 (US). **ANGEVINE, Philip, J.** [US/US]; 713 Maegus Drive, Woodbury, New Jersey 08096 (US).

(74) Agents: **CALDERONE, Adrian, T.** et al.; **DILWORTH & BARRESE, LLP**, 333 Earle Ovington Boulevard, Uniondale, New York 11553 (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).

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
- 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: PROCESS FOR BENZENE ALKYLATION AND TRANSALKYLATION OF POLYALKYLATED AROMATICS OVER IMPROVED ZEOLITE BETA CATALYST

(57) Abstract: An aromatic alkylation process includes contacting an aromatic compound with an alkylating agent in the presence of a zeolite beta in a reaction zone under alkylation reaction conditions, wherein said zeolite beta is a high performance zeolite beta possessing a ratio of strong acid sites/weak acid sites greater than 1. The high performance zeolite beta is superior to conventional zeolite beta in the aromatics alkylation reaction, such as benzene alkylation with ethylene for ethylbenzene production, and benzene alkylation with propylene for cumene production.



WO 2006/060158 A1