

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number
WO 00/74847 A1

- (51) International Patent Classification⁷: **B01J 29/40**,
37/08, C07C 2/86, 15/08 Zhong Guan Yuan, Building 46, No. 103, Beijing 100871 (CN).
- (21) International Application Number: PCT/US00/13003 (74) Agents: **LOO, Blossom, E.** et al.; Exxon Chemical Company, P.O. Box 2149, Baytown, TX 77522-2149 (US).
- (22) International Filing Date: 11 May 2000 (11.05.2000) (81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/327,241 7 June 1999 (07.06.1999) US
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- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

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: CATALYST SELECTIVATION

(57) Abstract: It has been discovered that catalysts may be modified by depositing an agent derivative from an agent such as an organometallic compound upon them. Such a modification gives a catalyst useful in increased selectivity to para-substituted alkyl benzenes, such as para-xylene (PX), through reacting an aromatic compound such as toluene and/or benzene with a methylating agent from hydrogen and carbon monoxide and/or carbon dioxide and/or methanol. Using these selectivated catalysts, para-substituted alkyl benzenes can be recovered in a selectivity of 80 % or greater, significantly better than the equilibrium concentration of 24 %.



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