

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number
WO 2005/097714 A1

(51) International Patent Classification⁷: **C07C 4/24**
(21) International Application Number:
PCT/US2005/009367

(74) Common Representative: **UOP LLC**; John G. Tolomei,
Assistant Secretary-Patent Matters, 25 East Algonquin
Road, P.O. Box 5017, Des Plaines, Illinois 60017-5017
(US).

(22) International Filing Date: 22 March 2005 (22.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/807,626 24 March 2004 (24.03.2004) 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, 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.

(71) Applicant (*for all designated States except US*): **UOP
LLC** [US/US]; 25 East Algonquin Road, P.O. Box 5017,
Des Plaines, Illinois 60017-5017 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **NEGIZ, Antoine**
[US/US]; UOP LLC, 25 East Algonquin Road, P.O. Box
5017, Des Plaines, Illinois 60017-5017 (US). **BOLD-
INGH, Edwin, P.** [NL/US]; UOP LLC, 25 East Algonquin
Road, P.O. Box 5017, Des Plaines, Illinois 60017-5017
(US). **MODICA, Frank, S.** [US/US]; UOP LLC, 25 East
Algonquin Road, P.O. Box 5017, Des Plaines, Illinois
60017-5017 (US). **MAHER, Gregory, F.** [US/US]; UOP
LLC, 25 East Algonquin Road, P.O. Box 5017, Des
Plaines, Illinois 60017-5017 (US).

(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, 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*

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: CATALYTIC CONVERSION OF POLYCYCLIC AROMATICS INTO XYLENES

(57) Abstract: A catalyst, and a process for using the catalyst, that effectively converts and transalkylates indane and C₁₀ and heavier polycyclic aromatics into C₈ aromatics is herein disclosed. The catalyst comprises a solid-acid support such as mordenite plus a metal component such as rhenium. The catalyst provides excellent conversion of such heavy aromatic species as naphthalene, which is also observed by a decrease in the ending-boiling-point of a hydrocarbon stream passed over the catalyst. The same catalyst is also effective for transalkylation of lighter aromatics, thus yielding a valuable xylenes product stream out of the process.

WO 2005/097714 A1