

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 February 2003 (13.02.2003)

PCT

(10) International Publication Number
WO 03/011820 A1

(51) International Patent Classification⁷: **C07C 409/10**,
B01J 19/24

(21) International Application Number: PCT/US02/22083

(22) International Filing Date: 9 June 2002 (09.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/916,775 27 July 2001 (27.07.2001) US

(71) Applicant: **GENERAL ELECTRIC COMPANY**
[US/US]; One River Road, Schenectady, NY 12345 (US).

(72) Inventors: **FULMER, John, William**; 78 Park Ridge Drive, Mt. Vernon, IN 47620 (US). **SCOTT, Eugene, Edward**; 8135 Waltz Road, Mount Vernon, IN 46720 (US). **KIGHT, William, Dale**; 86 South Sharp Street, Poseyville, IN 47633 (US).

(74) Agents: **WINTER, Catherine, J.** et al.; General Electric Company, 3135 Easton Turnpike W3C, Fairfield, CT 06828 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, 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, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, 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, TR), OAPI patent (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 "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR MANUFACTURING CUMENE HYDROPEROXIDE

(57) Abstract: A method for manufacturing cumene hydroperoxide comprises reacting cumene and oxygen in the presence of a water phase comprising aqueous ammonia, and in the absence of an additive comprising an alkali or alkaline earth metal, to form cumene hydroperoxide. A system for producing cumene hydroperoxide comprises a cumene feed (10) in fluid communication with a reactor (30, 32, 34, 36, 38, 40) having a cumene hydroperoxide oxidate outlet; an oxygen feed (42) in fluid communication with the reactor (30, 32, 34, 36, 38, 40); and an ammonia feed (26) in fluid communication with the cumene feed (10) and/or the reactor (30, 32, 34, 36, 38, 40), wherein the cumene feed (10), the oxygen feed (42), the ammonia feed (26), and the reactor (30, 32, 34, 36, 38, 40) are free of an additive comprising an alkali or alkaline earth metal.



WO 03/011820 A1