

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 August 2003 (07.08.2003)

PCT

(10) International Publication Number
WO 03/064364 A1

- (51) International Patent Classification⁷: C07C 51/12, 53/08
- (21) International Application Number: PCT/US03/00503
- (22) International Filing Date: 9 January 2003 (09.01.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/058,547 28 January 2002 (28.01.2002) US
- (71) Applicant: CELANESE INTERNATIONAL CORPORATION [US/US]; 1601 West LBJ Freeway, Dallas, TX 75234 (US).
- (72) Inventors: HUCKMAN, Michael, E.; 3021 Lawnview, Corpus Christi, TX 78404 (US). TORRENCE, G., Paull; 4206 Masters Drive, League City, TX 77573 (US). CHEUNG, Hosea; 6813 Whitewing Avenue, Corpus Christi, TX 78413 (US).
- (74) Agents: SPIERING, M., Susan et al.; c/o Celanese Ltd., IP Legal Dept., IZIP 701, P.O. Box 428, Highway 77 South, Bishop, TX 78343 (US).
- (81) Designated States (*national*): BR, CA, CN, ID, IN, JP, KR, MX, SG.
- (84) Designated States (*regional*): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR).
- Declaration under Rule 4.17:**
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
- 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.*



WO 03/064364 A1

(54) Title: PROCESS CONTROL IN PRODUCTION OF ACETIC ACID VIA USE OF HEAVY PHASE DENSITY MEASUREMENT

(57) Abstract: A process for monitoring and controlling reactor conditions during the production of acetic acid by catalyzed carbonylation of methanol is provided. The process of the present invention comprises measuring the density of the heavy phase of the light ends distillation column in the purification system of the carbonylation process. The density measurement is used to adjust the feed of methanol and/or regulate the temperature in the reaction zone to optimize reactor conditions. The density measurement may also be used to adjust other parameters in the reactor system. The invention is also directed to the system for manufacturing acetic acid based on the process control procedure described.