



(51) International Patent Classification:

C07C 29/149 (2006.01) *C07C 31/08* (2006.01)
C07C 29/80 (2006.01) *C07C 29/76* (2006.01)

(21) International Application Number:

PCT/US2011/035564

(22) International Filing Date:

6 May 2011 (06.05.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/332,696 7 May 2010 (07.05.2010) US
 13/078,727 1 April 2011 (01.04.2011) US

(71) Applicants (for all designated States except US):

CELANESE INTERNATIONAL CORPORATION
 [US/US]; 1601 West LBJ Freeway, Dallas, Texas 75234
 (US). **KERLEGON, Stephen** [US/US]; 124 Harwood
 Drive, League City, Texas 77573 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JEVTIC, Radmila**

[RS/US]; 7022 Red Coral Drive, Pasadena, Texas 77505
 (US). **JOHNSTON, Victor J.** [US/US]; 3234 Pleasant
 Cove Court, Houston, Texas 77059 (US). **WARNER, R.**

Jay [US/US]; 3507 East Pine Brook Way, Houston,
 Texas 77059 (US). **POTTS, John** [US/US]; 1088 Red
 Elm Lane, Angleton, Texas 77515 (US).

(74) Agents: **FREDLAKE, Keith DS** et al.; 7918 Jones
 Branch, Suite 500, McLean, Virginia 22102 (US).

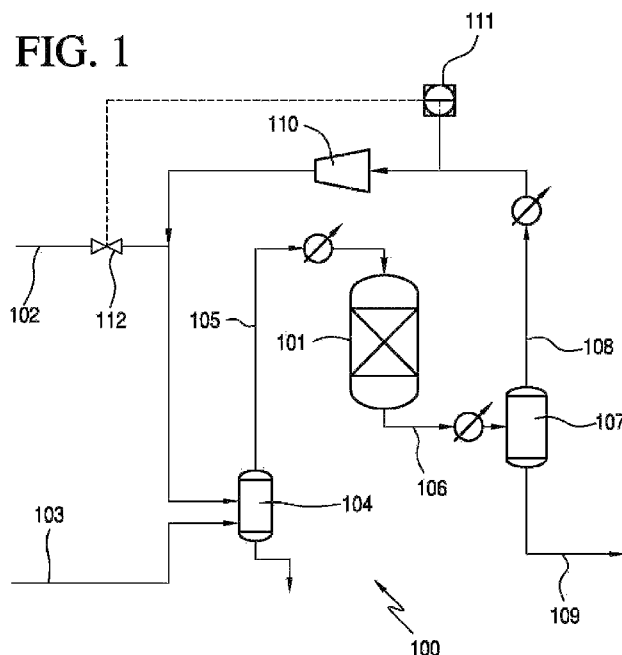
(81) Designated States (unless otherwise indicated, for every
 kind of national protection available): AE, AG, AL, AM,
 AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
 CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
 DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
 HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
 KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
 ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
 NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
 SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
 kind of regional protection available): ARIPO (BW, GH,
 GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
 ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
 TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
 LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
 SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
 GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: PROCESS FOR PRODUCING ETHANOL BY HYDROGENATION OF ACETIC ACID

FIG. 1



(57) Abstract: Monitoring and recycling gases from acetic acid hydrogenation reaction to maintain a constant pressure in the hydrogenation reaction system. Purging of the vapor stream comprising hydrogen may be limited or reduced. Further purging of the by-product may be from the dissolved by-product gases.

WO 2011/140468 A3



Published:

(88) Date of publication of the international search report:

— *with international search report (Art. 21(3))*

19 April 2012