



(51) International Patent Classification:

B01D 53/00 (2006.01) **C08F 10/02** (2006.01)
C08F 6/00 (2006.01)

(21) International Application Number:

PCT/US2013/035103

(22) International Filing Date:

3 April 2013 (03.04.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

13/446,965 13 April 2012 (13.04.2012) US

(71) Applicant: **CHEVRON PHILLIPS CHEMICAL COMPANY LP** [US/US]; 10001 Six Pines Drive, The Woodlands, Texas 77380 (US).

(72) Inventors; and

(71) Applicants : **HOTTOVY, John, D** [US/US]; 2347 Summit Way Ct., Kingwood, Texas 77339 (US). **CHANG, Ai-Fu** [—/US]; 3300 Cummins Street, Apt. # 2370, Houston, Texas 77027 (US).

(74) Agent: **WALTER, Chad, E.**; Chevron Phillips Chemical Company LP, 10001 Six Pines Drive, The Woodlands, Texas 77380 (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, BN, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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).

Published:

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

(54) Title: ETHYLENE RECOVERY BY ABSORPTION

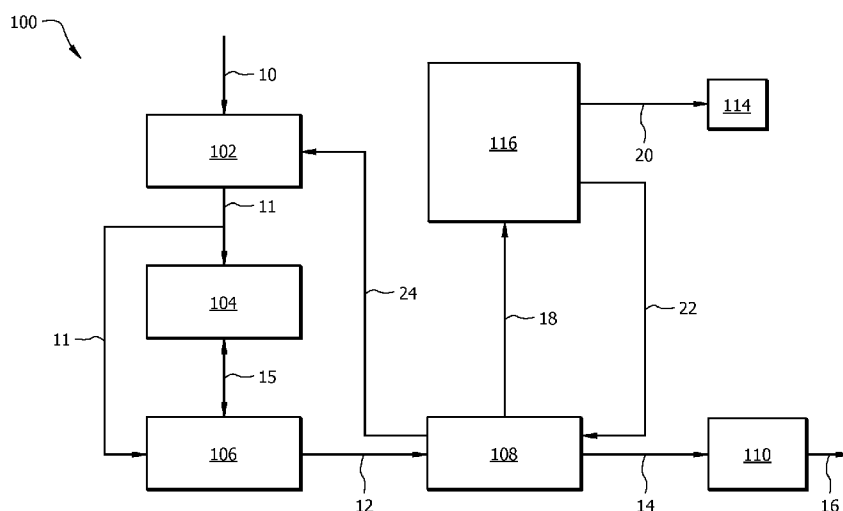


FIG. 1

(57) Abstract: A process for recovery of ethylene from a polymerization product stream of a polyethylene production system, comprising separating a light gas stream from the polymerization product stream, wherein the light gas stream comprises ethane and unreacted ethylene, contacting the light gas stream with an absorption solvent system, wherein the contacting the light gas stream with the absorption solvent system occurs at a temperature in a range of from about 40° F to about 110° F, wherein at least a portion of the unreacted ethylene from the light gas stream is absorbed by the absorption solvent system, and recovering unreacted ethylene from the absorption solvent system to yield recovered ethylene.