



(43) International Publication Date
20 March 2014 (20.03.2014)

- (51) **International Patent Classification:**
E21B 43/34 (2006.01) *E21B 17/01* (2006.01)
- (21) **International Application Number:**
PCT/US2013/058855
- (22) **International Filing Date:**
10 September 2013 (10.09.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/618,662 14 September 2012 (14.09.2012) US
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- (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, 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, SA,
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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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

(54) Title: SYSTEMS AND METHODS FOR MONITORING OIL/GAS SEPARATION PROCESSES

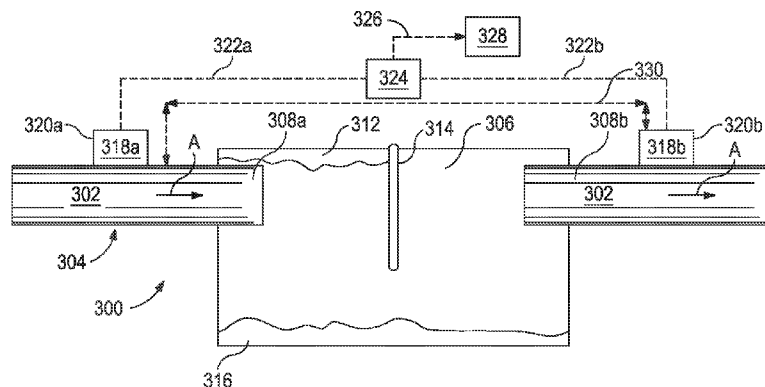


FIG. 3

- (57) Abstract:** Disclosed are systems and methods for analyzing an oil/gas separation process. One disclosed system includes a flow path containing a fluid, a fluid separator coupled to the flow path and having an inlet for receiving the fluid and a discharge conduit for discharging the fluid after having undergone a separation process in the fluid separator, an optical computing device having an integrated computational element configured to optically interact with the fluid before the fluid enters the fluid separator and after the fluid exits the fluid separator and thereby generate optically interacted light, and at least one detector arranged to receive the optically interacted light and generate an output signal corresponding to a characteristic of the fluid.