

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 June 2025 (26.06.2025)



(10) International Publication Number
WO 2025/133702 A2

- (51) **International Patent Classification:**
B01D 53/047 (2006.01)
- (21) **International Application Number:**
PCT/IB2024/000750
- (22) **International Filing Date:**
19 December 2024 (19.12.2024)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
FR 2315097 22 December 2023 (22.12.2023) FR
- (71) **Applicant:** **TECHNIP ENERGIES FRANCE** [FR/FR];
2126 Boulevard de la Défense, Immeuble Origine - CS
10266, 92741 Nanterre Cedex (FR).
- (72) **Inventor:** **ELSEVIERS, Wim**; c/o TECHNIP ENERGIES
FRANCE, 2126 Boulevard de la Défense, Immeuble Origine - CS 10266, 92741 Nanterre Cedex (FR).
- (74) **Agent:** **WITHERS & ROGERS LLP** et al.; Kaulbachstr.
114, 80802 Munich (DE).

HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

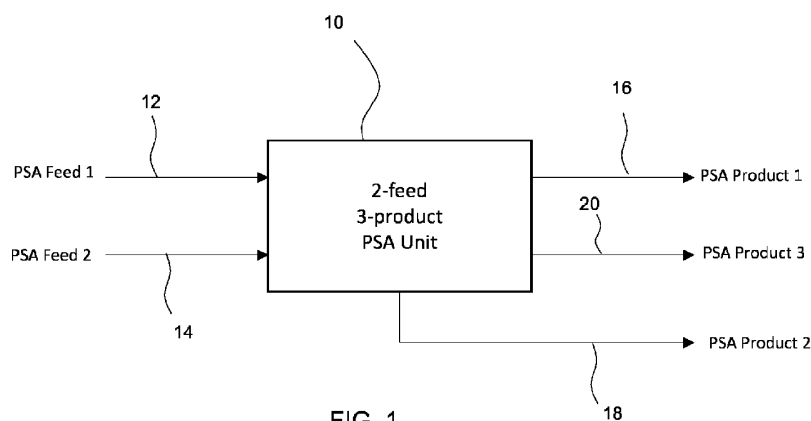
(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, 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).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

(54) **Title:** PRESSURE SWING ADSORPTION WITH DUAL-FEED, THREE PRODUCT STREAMS



(57) **Abstract:** A method for producing a plurality of product gas streams by a pressure swing adsorption (PSA) unit is described. The method comprises: receiving a first feed gas stream having a first pressure; receiving a second feed gas stream having a second pressure that is lower than the first pressure; producing at least a first product stream, a second product stream, and a third product stream without compressing the second feed gas stream to a pressure level corresponding to the first pressure.