

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

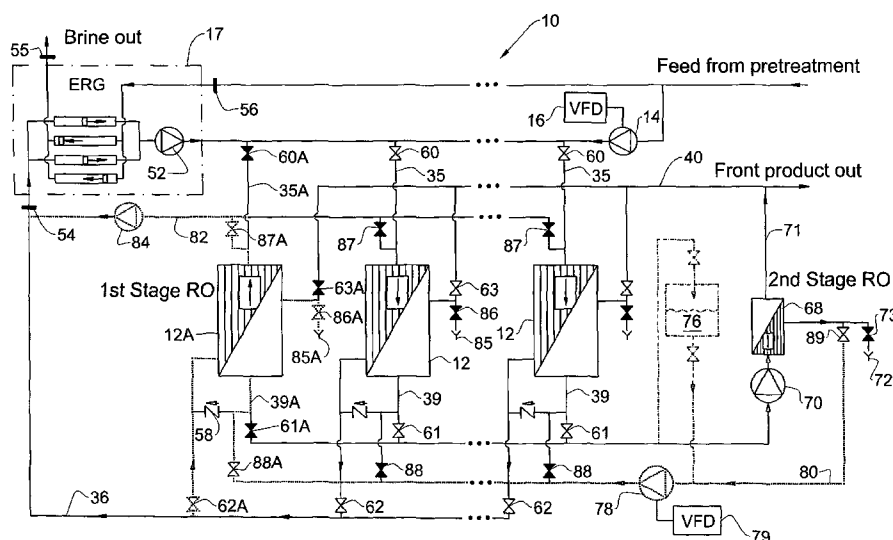
PCT

(10) International Publication Number
WO 2004/062774 A3

- (51) International Patent Classification⁷: **B01D 65/02**, 61/02
- (21) International Application Number: PCT/IL2003/000984
- (22) International Filing Date: 20 November 2003 (20.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
153870 9 January 2003 (09.01.2003) IL
157581 26 August 2003 (26.08.2003) IL
- (71) Applicant (for all designated States except US): **L.D.E. TECHNOLOGIES LTD.** [IL/IL]; Hamatechet Street, P.O. Box 5016, Hasharon Industrial Park, Kadima 60920 (IL).
- (72) Inventor; and
(75) Inventor/Applicant (for US only): **LIBERMAN, Boris** [IL/IL]; 102 Derech Lod, 67654 Tel Aviv (IL).
- (74) Agent: **REINHOLD COHN AND PARTNERS**; P.O.B. 4060, 61040 Tel Aviv (IL).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: DIRECT OSMOSIS CLEANING



(57) Abstract: A method of cleaning a fouled RO membrane in a module for RO separation, the membrane having feed side and permeate side, the foulant accumulating at the feed side. The cleaning method comprises: feeding concentrated saline solution to the feed side of the RO membrane under the high gauge pressure of the normal RO separation process; feeding dilute saline solution to the permeate side of the RO membrane under higher pressure that the permeate pressure of the normal RO process, so that a net driving differential ΔP_N is directed to the feed side, whereby the solvent is being sucked from the permeate side to the feed side, penetrates into the interface between the membrane and the accumulated foulant, and separates the foulant from the membrane surface; and withdrawing the concentrated saline solution together with the separated foulant and the penetrated solvent from the feed side of the RO membrane.

WO 2004/062774 A3



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

30 September 2004

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.