

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 August 2024 (08.08.2024)



(10) International Publication Number
WO 2024/162842 A1

- (51) **International Patent Classification:**
C25B 1/04 (2006.01) C25B 15/08 (2006.01)
C25B 15/02 (2006.01)
- (21) **International Application Number:**
PCT/MY2024/050006
- (22) **International Filing Date:**
31 January 2024 (31.01.2024)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
PI2023000576 03 February 2023 (03.02.2023) MY

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:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))

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

- (54) **Title:** A METHOD OF GENERATING HYDROGEN AND OXYGEN FROM A LIQUID FEED STREAM

- (57) **Abstract:** A method of generating hydrogen and oxygen from a liquid feed stream through an integrated system of forward osmosis and electrolysis, wherein the method comprising the steps of feeding water into an electrolyte solution by means of forward osmosis and applying a voltage across the electrolyte solution to generate hydrogen and oxygen, characterized in that the electrolyte solution comprising an electrolyte, an ionic liquid and a solvent, wherein the electrolyte is used in an amount ranging between 1 wt% to 10 wt % of the electrolyte solution, wherein the ionic liquid is used in an amount ranging between 1 wt% to 5 wt% of the electrolyte solution and wherein the solvent is used in an amount ranging between 75 wt% to 99 wt% of the electrolyte solution.



WO 2024/162842 A1