Title (en)

SYSTEMS AND METHODS FOR RECOVERING LITHIUM FROM BRINES

Title (de)

SYSTEME UND VERFAHREN ZUR RÜCKGEWINNUNG VON LITHIUM AUS SOLEN

Title (fr)

SYSTÈMES ET PROCÉDÉS DE RÉCUPÉRATION DE LITHIUM À PARTIR DE SAUMURES

Publication

EP 3947756 A4 20220706 (EN)

Application

EP 21789600 A 20210512

Priority

- US 202063023528 P 20200512
- US 2021032027 W 20210512

Abstract (en)

[origin: WO2021231597A1] Systems and methods using solar evaporation to preconcentrate lithium containing brines to at or near lithium saturation, followed by a separation processes to separate lithium from impurities. A separated impurity stream is recycled to a point in the evaporation sequence where conditions are favorable for their precipitation and removal or disposed in a separate evaporation pond or reinjected underground, while a lower impurity stream is transferred to one or more of the removal location, to a subsequent pond in the sequence, or to a lithium plant or concentration facility. Further concentration of lithium by evaporation can then take place because impurities are removed thus eliminating lithium losses due to co-precipitation and achieving significantly higher concentrations of lithium.

IPC 8 full level

C22B 1/24 (2006.01); **C22B 3/00** (2006.01); **C22B 3/06** (2006.01); **C22B 3/22** (2006.01); **C22B 3/24** (2006.01); **C22B 3/26** (2006.01); **C22B 3/42** (2006.01); **C22B 26/12** (2006.01); C01D 3/00 (2006.01); C01D 15/00 (2006.01); C01F 5/00 (2006.01)

CPC (source: EP IL)

C01D 3/06 (2013.01 - EP IL); **C01D 5/00** (2013.01 - EP IL); **C01D 15/04** (2013.01 - EP IL); **C01D 15/06** (2013.01 - EP IL); **C01F 5/00** (2013.01 - EP IL); **C01F 5/30** (2013.01 - EP IL); **C01F 5/38** (2013.01 - EP IL); **C01F 5/40** (2013.01 - EP IL); **C22B 1/24** (2013.01 - IL); **C22B 3/00** (2013.01 - EP IL); **C22B 3/22** (2013.01 - EP IL); **C22B 3/24** (2013.01 - EP IL); **C22B 3/26** (2021.05 - EP IL); **C22B 3/42** (2013.01 - EP IL); **C22B 26/12** (2013.01 - EP IL); Y02P 10/20 (2015.11 - EP IL)

Citation (search report)

- [I] CN 109748298 A 20190514 - WENZHOU UNIV NEW MATERIAL AND INDUSTRY TECHNOLOGY RESEARCH INSTITUTE
- [A] FLEXER VICTORIA ET AL: "Lithium recovery from brines: A vital raw material for green energies with a potential environmental impact in its mining and processing", SCIENCE OF THE TOTAL ENVIRONMENT, ELSEVIER, AMSTERDAM, NL, vol. 639, 26 May 2018 (2018-05-26), pages 1188 - 1204, XP085407523, ISSN: 0048-9697, DOI: 10.1016/J.SCITOTENV.2018.05.223
- See also references of WO 2021231597A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2021231597 A1 20211118; **WO 2021231597 A9 20220120**; AU 2021254665 A1 20211202; AU 2021254665 B2 20220421; CA 3136247 A1 20211112; CA 3136247 C 20221220; CN 113924375 A 20220111; CN 113924375 B 20230404; EP 3947756 A1 20220209; EP 3947756 A4 20220706; IL 287465 A 20211201; IL 287465 B1 20231101; IL 287465 B2 20240301; JO P20210311 A1 20230130; MX 2021013733 A 20211210; PE 20220205 A1 20220201

DOCDB simple family (application)

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