

Title (en)

SEPARATION OF RARE EARTH ELEMENTS USING SUPPORTED MEMBRANE SOLVENT EXTRACTION

Title (de)

ABTRENNUNG VON SELTENERDELEMENTEN UNTER VERWENDUNG VON TRÄGERMEMBRAN-LÖSUNGSMITTELEXTRAKTION

Title (fr)

SÉPARATION D'ÉLÉMENTS TERRES RARES AU MOYEN D'UNE EXTRACTION PAR SOLVANT SUR MEMBRANE SUR SUPPORT

Publication

EP 4093527 A1 20221130 (EN)

Application

EP 20705861 A 20200121

Priority

US 2020014363 W 20200121

Abstract (en)

[origin: WO2021150208A1] A system and method for the recovery and separation of rare earth elements (REEs) are provided. The system and method include the supported membrane solvent extraction of REEs and the separation of light and heavy REEs that have been recovered from scrap permanent magnets and other electronic waste. In supported membrane solvent extraction, an organic phase consisting of an extractant and an organic solvent is immobilized in the pores of hollow fibers. An aqueous feed solution and a strip solution flow along the shell side and lumen side of the hollow fibers, respectively. The extractant functions as a carrier to selectively transport certain rare earth metal ions from the feed side to the strip side. The rare earth metals are concurrently back extracted in the strip solution, allowing processing to proceed continuously without equilibrium limitations.

IPC 8 full level

B01D 11/04 (2006.01); **B01D 69/08** (2006.01); **C22B 3/26** (2006.01); **C22B 59/00** (2006.01)

CPC (source: EP KR US)

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Designated contracting state (EPC)

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BA ME

Designated validation state (EPC)

KH MA MD TN

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DOCDB simple family (application)

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