

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
16 January 2025 (16.01.2025)



(10) International Publication Number
WO 2025/012711 A1

(51) International Patent Classification:

C01B 25/45 (2006.01) H01M 10/54 (2006.01)
H01M 4/58 (2010.01) B02C 23/00 (2006.01)
H01M 10/0525 (2010.01)

(21) International Application Number:

PCT/IB2024/054305

(22) International Filing Date:

03 May 2024 (03.05.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

202311045805 07 July 2023 (07.07.2023) IN

(71) Applicant: **ATTERO RECYCLING PVT. LTD.** [IN/IN];
173, Raipur Industrial Area, Bhagwanpur, Roorkee, Haridwar
Uttarakhand - 247661 (IN).

(72) Inventors: **BARIK, Smruti Prakash**; Attero Recycling
Pvt. Ltd., 173, Raipur Industrial Area, Bhagwanpur, Roor-
kee, Haridwar Uttarakhand - 247661 (IN). **PRABHA-**
RAN, G; Attero Recycling Pvt. Ltd., 173, Raipur Indus-
trial Area, Bhagwanpur, Roorkee, Haridwar Uttarakhand -
247661 (IN). **KUMAR, Bhuvnesh**; Attero Recycling Pvt.
Ltd., 173, Raipur Industrial Area, Bhagwanpur, Roorkee,

Haridwar Uttarakhand - 247661 (IN). **KUMAR, Nitin**;
Attero Recycling Pvt. Ltd., 173, Raipur Industrial Area,
Bhagwanpur, Roorkee, Haridwar Uttarakhand - 247661
(IN). **KULKARNI, Amit**; Attero Recycling Pvt. Ltd., 173,
Raipur Industrial Area, Bhagwanpur, Roorkee, Haridwar
Uttarakhand - 247661 (IN). **GUPTA, Nitin**; Attero Recy-
cling Pvt. Ltd., 173, Raipur Industrial Area, Bhagwanpur,
Roorkee, Haridwar Uttarakhand - 247661 (IN).

(74) Agent: **AMBASTHA, Lalit** et al.; PATENTWIRE, B-54A,
Second Floor, Block B, Greater Kailash I, New Delhi-
110048 (IN).

(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,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(54) Title: A METHOD FOR PROCESSING SPENT LITHIUM IRON PHOSPHATE BATTERIES

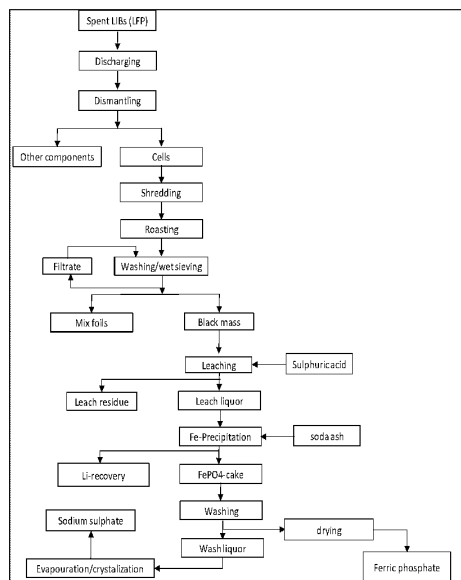


Figure 1

(57) Abstract: The present invention relates to a method for process-
ing spent lithium iron phosphate batteries. The present invention pro-
vides an environment-friendly, industrially applicable and an economi-
cal method for processing spent lithium iron phosphate batteries that fol-
lows simple physical and chemical processes to recover valuable metal
for reuse or reutilisation. The method for processing spent lithium iron
phosphate batteries of the present invention exhibits percentage recovery
rate greater than 95% and the recovered material is having purity in a
range of 98-99%.

[Continued on next page]

(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).

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*