

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 February 2023 (02.02.2023)



(10) International Publication Number
WO 2023/009074 A2

(51) International Patent Classification:
Not classified

(21) International Application Number:
PCT/SG2022/050542

(22) International Filing Date:
29 July 2022 (29.07.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10202108358Q 30 July 2021 (30.07.2021) SG

(71) Applicant: **ENGRO CORPORATION LIMITED**
[SG/SG]; 29 International Business Park, #08-05/06, Acer
Building Tower B, Singapore 609923 (SG).

(72) Inventors: **GOH, Chee Keong**; c/o Republic Polytechnic,
9 Woodlands Avenue 9, Singapore 738964 (SG). **TANG,
Lok Hing**; c/o Republic Polytechnic, 9 Woodlands Avenue
9, Singapore 738964 (SG). **-, Soorya Prakash**; c/o En-
gro Corporation Limited, 29 International Business Park,
#08-05/06, Acer Building Tower B, Singapore 609923
(SG). **LOH, Sui Shong**; c/o Engro Corporation Limited,
29 International Business Park, #08-05/06, Acer Building
Tower B, Singapore 609923 (SG). **TAN, Eik Shuan**; c/o
Engro Corporation Limited, 29 International Business Park,
#08-05/06, Acer Building Tower B, Singapore 609923
(SG).

(74) Agent: **VIERING, JENTSCHURA & PARTNER LLP**;
P.O. Box 1088, Rochor Post Office, Rochor Road, Singa-
pore 911833 (SG).

(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, ME, MG, MK, MN, 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.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, 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, 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:

— without international search report and to be republished
upon receipt of that report (Rule 48.2(g))



WO 2023/009074 A2

(54) Title: A SCALABLE AND SUSTAINABLE PROCESS FOR TRANSFORMING INCINERATION BOTTOM ASH INTO USE-
ABLE AGGREGATES

(57) Abstract: Herein disclosed is an aggregate comprising a cement comprising ordinary Portland cement, a ground granulated blast-furnace slag, and bottom ash, wherein the cement is hydrated in the presence of the ground granulated blast-furnace slag to have a calcium silicate hydrate or derivative thereof formed which encapsulate the bottom ash. A method of producing the aggregate is disclosed herein also, the method comprising mixing the cement and the ground granulated blast-furnace slag with the bottom ash in the presence of water to form pre-coated bottom ash, and granulating the pre-coated bottom ash.