

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
24 October 2024 (24.10.2024)



(10) International Publication Number
WO 2024/218498 A1

(51) International Patent Classification:

C01B 3/04 (2006.01) C22C 19/05 (2006.01)
B01J 19/02 (2006.01) C22C 19/07 (2006.01)
C22C 19/03 (2006.01) C22C 30/00 (2006.01)

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.

(21) International Application Number:

PCT/GB2024/051014

(22) International Filing Date:

19 April 2024 (19.04.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2305785.4 20 April 2023 (20.04.2023) GB

(71) Applicant: JOHNSON MATTHEY PUBLIC LIMITED

COMPANY [GB/GB]; 5th Floor, 25 Farringdon Street,
London EC4A 4AB (GB).

(72) Inventor: SHAPCOTT, Stephen John; c/o Johnson

Matthey, 10 Eastbourne Terrace, London W2 6LG (GB).

(74) Agent: WELLS, John; c/o Johnson Matthey, PO Box 1,

Belasis Avenue, Billingham, Cleveland TS23 1LB (GB).

(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,

(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 applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- 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

(54) Title: PROCESS FOR CRACKING AMMONIA

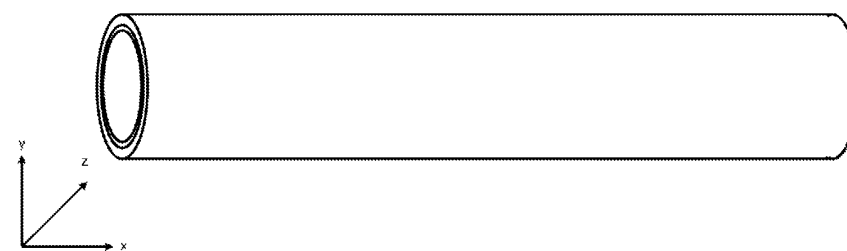


Fig. 1

(57) Abstract: A process for the catalytic cracking of ammonia, the process comprising: supplying an ammonia feed gas to one or more heated catalyst containing reaction vessels disposed within an ammonia cracking reactor; and cracking the ammonia in the ammonia feed gas in the one or more catalyst containing reaction vessels to produce a hydrogen containing stream, wherein the or each of the reaction vessels has a wall which is composed of at least a first alloy and a second alloy, wherein the first alloy is more resistant to nitriding than the second alloy and the second alloy provides mechanical support to the first alloy, and wherein at least a portion of the wall adjacent the catalyst is composed of the first alloy.



WO 2024/218498 A1