

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 April 2023 (06.04.2023)



(10) International Publication Number
WO 2023/052738 A1

(51) International Patent Classification:
G01N 23/02 (2006.01)

(21) International Application Number:
PCT/GB2022/051851

(22) International Filing Date:
18 July 2022 (18.07.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2114070.2 01 October 2021 (01.10.2021) GB

(71) Applicant: **JOHNSON MATTHEY PUBLIC LIMITED
COMPANY** [GB/GB]; 5th Floor, 25 Farringdon Street,
London EC4A 4AB (GB).

(72) Inventors: **EVANS, Thomas**; Tracerco Ltd, Measurement
Technology Centre, The Moat, Belasis Hall Technology
Park, Billingham Cleveland TS23 4EA (GB). **UMPLEBY,
Peter James**; Tracerco Ltd, Measurement Technology Centre,
The Moat, Belasis Hall Technology Park, Billingham
Cleveland TS23 4EA (GB).

(74) Agent: **ATKINSON, Ian Anthony**; Johnson Matthey
Technology Centre, Blount's Court Road, Sonning Common,
Reading Berkshire RG4 9NH (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, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA,

(54) Title: SCANNING SYSTEM AND METHOD FOR SCANNING VESSELS

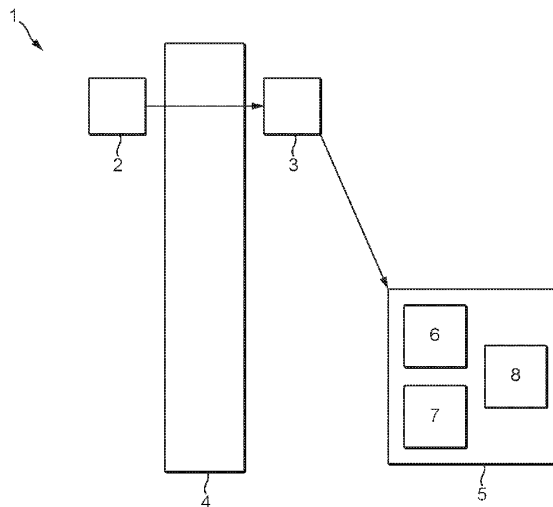


FIG. 1

(57) Abstract: A method of scanning a chemical processing vessel and diagnosing a problem within the chemical processing vessel and/or a problem with a process occurring within the chemical processing vessel, the method comprising: scanning the chemical processing vessel with at least one radiation source and at least one detector to generate density profile data for the chemical processing vessel; saving the density profile data; generating a representation of the chemical processing vessel; associating the density profile data with the representation of the chemical processing vessel whereby each data point of the density profile data is associated with a corresponding location along the representation of the chemical processing vessel indicating the location from which the data point was obtained; displaying the representation of the chemical processing vessel alongside the associated density profile data on a user interface, wherein the user interface is configured to enable a user to select a portion of the representation of the chemical processing vessel on the user

[Continued on next page]

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).

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))*

interface and to automatically display a corresponding portion of the density profile data in expanded form, whereby said portion of the density profile data can be analysed by the user in greater detail.