



(51) International Patent Classification:

C01B 17/16 (2006.01) *B01J 19/00* (2006.01)
B01J 8/06 (2006.01) *B01J 19/24* (2006.01)
B01J 10/00 (2006.01)

(21) International Application Number:

PCT/EP2013/061244

(22) International Filing Date:

31 May 2013 (31.05.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12173167.3 22 June 2012 (22.06.2012) EP

(71) Applicant (for all designated States except US): **EVONIK INDUSTRIES AG** [DE/DE]; Rellinghauser Straße 1 - 11, 45128 Essen (DE).

(72) Inventors; and

(71) Applicants (for US only): **FINKELDEI, Caspar Heinrich** [DE/DE]; Schillerstraße 15, 63755 Alzenau (DE).

CHEUNG, Chiu Kee [GB/DE]; Beim Klostergut 3, 63755 Alzenau (DE). **MAASSEN, Ralf** [DE/DE]; Franz-Stryck-Str. 4, 50374 Erfstadt (DE). **WENNER, Stefan** [DE/SG]; 27 Jalan Merah Saga #1-02, Singapore 278106 (SG). **KÖRFER, Martin** [DE/DE]; Mainstraße 20, 63796 Kahl (DE).

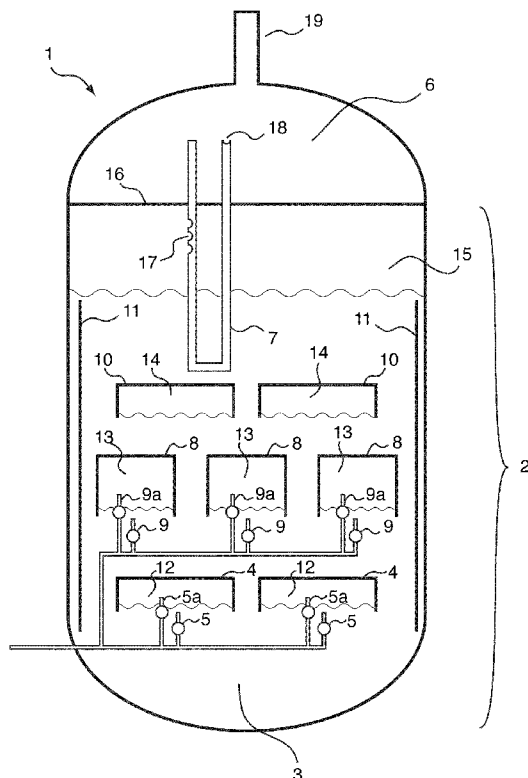
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, 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, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

[Continued on next page]

(54) Title: REACTOR AND PROCESS FOR PREPARING HYDROGEN SULPHIDE

Fig. 1



(57) Abstract: The present invention relates to a reactor and to a process for synthesis of hydrogen sulphide from elemental sulphur and hydrogen at elevated pressure and elevated temperature. The invention further relates to the use of the reactor for preparation of hydrogen sulphide in high yield and with a low H₂S_x content.



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:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*