

**(19) World Intellectual Property Organization
International Bureau**



G00002

(43) International Publication Date
17 January 2002 (17.01.2002)

PCT

(10) International Publication Number
WO 02/04576 A3

(51) International Patent Classification⁷: C10G 11/18,
B01J 8/00, 8/26

(21) International Application Number: PCT/EP01/07939

(22) International Filing Date: 10 July 2001 (10.07.2001)

(25) **Filing Language:** English

(26) Publication Language: English

(30) Priority Data:
09/614,978 12 July 2000 (12.07.2000) US

**(71) Applicant: SHELL INTERNATIONALE RESEARCH
MAATSCHAPPIJ B.V. [NL/NL]; Carel van Bylandtlaan
30, NL-2596 HR The Hague (NL)**

(72) Inventor: CHEN, Ye-Mon; 2215 Bent River Drive, Sugar Land, TX 77479 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

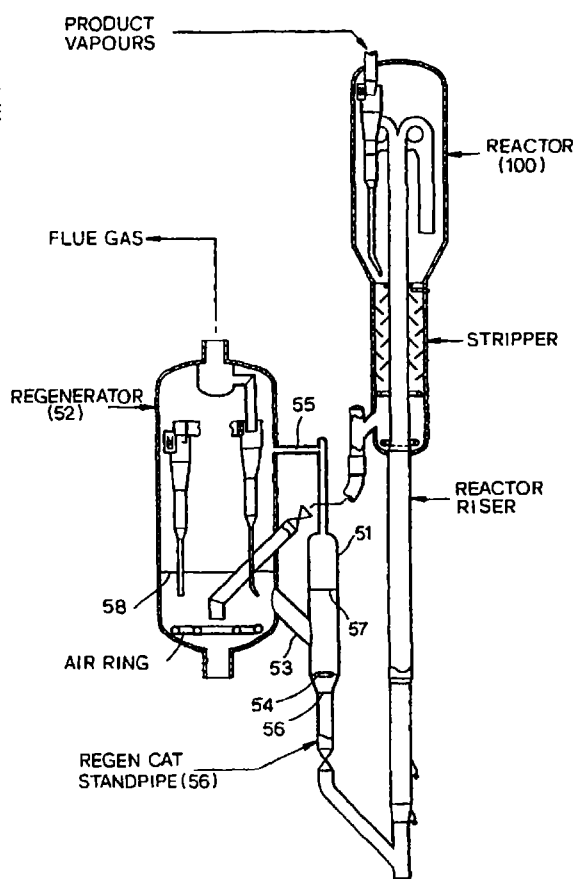
Published:

— with international search report

(88) **Date of publication of the international search report:**
10 May 2002

[Continued on next page]

(54) Title: STANDPIPE INLET FOR ENHANCING PARTICULATE SOLIDS CIRCULATION FOR PETROCHEMICAL AND OTHER PROCESSES



(57) Abstract: Fluid particulate solids process unit comprising a main fluidized bed vessel with particulate solids, a withdrawal well spaced from said main fluidized bed vessel, a downwardly inclined standpipe having its upper end fluidly connected to said fluidized bed, and its lower end fluidly connected to said particulate solids withdrawal well, a standpipe for receiving particulate solids from said particulate solids withdrawal well, said standpipe having an open upper end fluidly connected to said particulate solids withdrawal well, wherein the particulate solids withdrawal well is provided with a closed lower end (floor), through which lower end an inlet portion of said standpipe extends into said particulate solids withdrawal well from below for receiving and transporting said particulate solids from said particulate solids withdrawal well, said extended standpipe inlet portion including an open upper end and a plurality of openings cut through the wall of said extended standpipe below said open upper end and above the closed lower end (floor) of said particulate solids withdrawal well.

WO 02/04576 A3



A2

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette