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(81) 指定国(除另有指明, 要求每一种可提供的国家保护): 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, 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。

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(54) Title: CONDENSATE WATER SEPARATION DEVICE AND SEMICONDUCTOR PROCESS DEVICE

(54) 发明名称: 冷凝水分离装置及半导体工艺设备

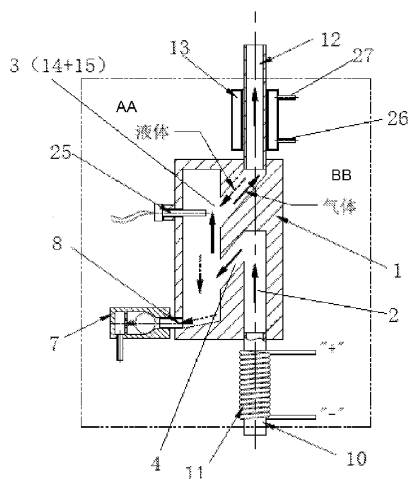


图 2

AA Liquid
BB Gas

(57) Abstract: A condensate water separation device, which is used for a gas emission system of a semiconductor process device. The gas emission system comprises an exhaust pipeline; a pressure control valve group (5) is provided on the exhaust pipeline. The condensate water separation device comprises: a device body (1), internally provided with a broken line-shaped gas channel, the gas channel comprising a plurality of channels which are sequentially communicated in a gas flowing direction, a gas inlet end (A1) of the most upstream channel (1a) serving as a gas inlet and being adapted to be connected to an outlet end of the pressure control valve group (5), a gas outlet end (A4) of the most downstream channel (1d) serving as a gas outlet and being higher than the gas inlet end of the channel, and the gas outlet end of at least one of the remaining channels being lower than the gas inlet end; and an one-way liquid discharge structure (7), connected at a joint between the channel having the gas outlet end lower than the gas inlet end and a downstream channel, and used for discharging condensate water which flows through. The semiconductor process device comprises a reaction chamber (34) and the gas emission system. The gas emission system comprises: the exhaust pipeline connected to the reaction chamber (34); the pressure control valve group (5) arranged on the exhaust pipeline; and the condensate water separation device, a gas inlet of the condensate water separation device being connected to an outlet end of the pressure control valve group (5).

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(84) 指定国(除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (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)。

本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 一种冷凝水分离装置, 用于半导体工艺设备的气体排放系统, 气体排放系统包括排气管线, 排气管线上设置有控压阀组(5), 冷凝水分离装置包括: 装置本体(1), 装置本体(1)的内部设置有折线形的气体通道, 气体通道包括沿气体流动方向依次连通的多个通道, 最上游的通道(1a)的进气端(A1)用作进气口, 用于与控压阀组(5)的出口端连接; 最下游的通道(1d)的出气端(A4)用作出气口, 且高于该通道的进气端; 其余的通道中有至少一者的出气端低于进气端; 单向积液结构(7), 单向积液结构(7)与出气端低于进气端的通道和下游的通道(1d)的连接处连接, 用于排出流经的冷凝水。一种半导体工艺设备, 包括反应腔室(34)和气体排放系统, 气体排放系统包括: 排气管线, 与反应腔室(34)连接; 控压阀组(5), 设置在排气管线上; 冷凝水分离装置, 冷凝水分离装置的进气口与控压阀组(5)的出口端连接。