

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 July 2005 (14.07.2005)

PCT

(10) International Publication Number
WO 2005/064237 A1

(51) International Patent Classification⁷: **F23G 7/06**, 7/08

(21) International Application Number:
PCT/SG2004/000408

(22) International Filing Date:
13 December 2004 (13.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
200307735-1 29 December 2003 (29.12.2003) SG

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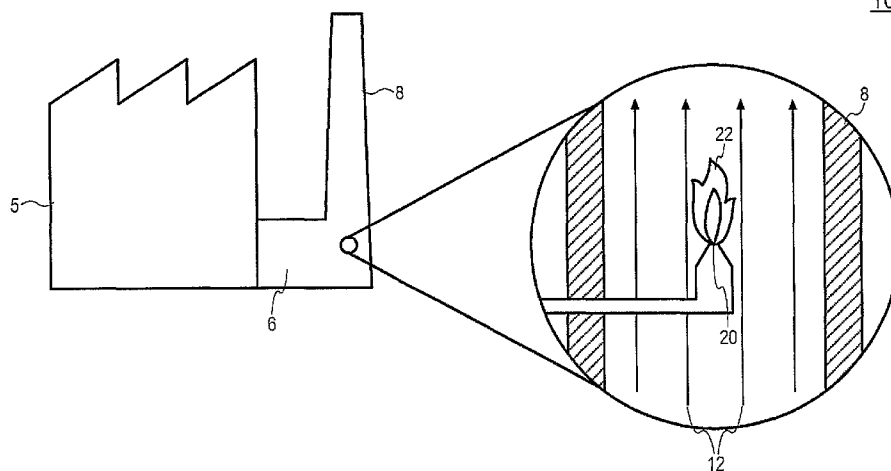
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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, 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, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: SYSTEM AND METHOD USING COOL HYDROGEN FLAME FOR DESTRUCTION OF VOCs AND ODOROUS COMPOUNDS



(57) Abstract: A system for using cool hydrogen flame for destruction of VOCs and odorous compounds comprises an existing exhaust system for an industrial process or a factory. The existing exhaust system comprises at least an exhaust duct or a chimney for exhaust gases. The exhaust gases may comprise of odorous compounds such as DMS, MDSO and other VOCs. The system further comprises at least one burner nozzle for generating a configurable hydrogen surface-mixed diffusion flame. The main by-product from this hydrogen flame is water and free radicals. These free radicals produced during hydrogen combustion are extremely reactive and highly oxidative in nature especially hydroxyl radicals. As such, odorous compounds such as VOCs, DMS and DMSO would easily be destroyed by these free radicals produced during hydrogen combustion.

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ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

— *with international search report*