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(71) Applicant (for all designated States except US):
NANYANG TECHNOLOGICAL UNIVERSITY
[SG/SG]; 50 Nanyang Avenue, Singapore 639798 (SG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LIANG, Tee, David
[CA/SG]; Block 3, Pandan Valley, #03-314, Singapore
597629 (SG). LIM, Tuti Mariana [ID/SG]; Block 88,

Commonwealth Close, #09-13, Singapore 140088 (SG).
TAY, Joo Hwa [SG/SG]; Block F, Nanyang Drive,, Hall
of Residence 6, Nanyang Technological University, Sin-
gapore 639798 (SG). LI, Dong Fei [SG/SG]; Block 8A,
Boon Tiong Road, #20-77, Singapore 146008 (SG).

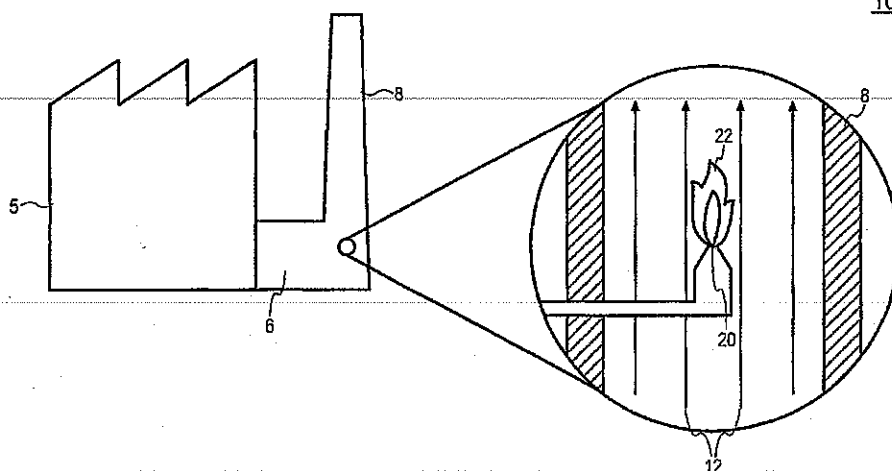
(74) Agent: ALBAN TAY MAHTANI & DE SILVA; 39
Robinson Road, #07-01 Robinson Point, Singapore
068911 (SG).

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(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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