SPARE COPY

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : B01J 8/02 — A1

(11) International Publication Number: **WO 96/16729**

(43) International Publication Date: 6 June 1996 (06.06.96)

(21) International Application Number: PCT/US95/15430

(22) International Filing Date: 29 November 1995 (29.11.95)

(30) Priority Data:
08/347,870 1 December 1994 (01.12.94) US

(71) Applicant: THERMATRIX INC. [US/US]; Suite 248, 101 Metro Drive, San Jose, CA 95110 (US).

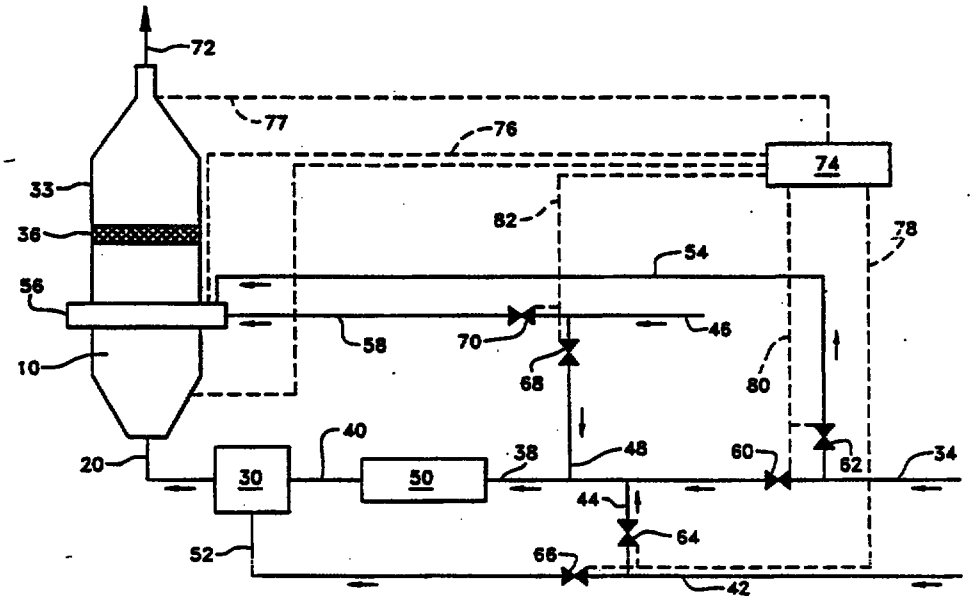
(72) Inventors: HOLST, Mark, R.; 124 Homewood Drive, Concord, CA 94518 (US). MARTIN, Richard, J.; 1377 Poe Lane, San Jose, CA 95130 (US).

(74) Agents: PARKER, Henrik, D. et al.; Woodcock Washburn Kurtz Mackiewicz & Norris, 46th floor, One Liberty Place, Philadelphia, PA 19103 (US).

(81) Designated States: AL, AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, LS, MW, SD, SZ, UG).

Published
With international search report.
With amended claims and statement.

(54) Title: METHOD AND APPARATUS FOR DESTRUCTION OF VOLATILE ORGANIC COMPOUND FLOWS OF VARYING CONCENTRATION



(57) Abstract

Apparatuses and methods for treating gas streams containing variations in VOC concentration whereby the VOC's are destroyed in a combination non-catalytic/catalytic oxidation system (33) are disclosed. A non-catalytic destruction matrix (12) composed of inert ceramic materials (14) that enhance process mixing and provide thermal inertia for process stability is used when VOC concentrations are high and a catalytic oxidizer (36) is principally used when VOC concentrations are low. The exhaust from the non-catalytic destruction matrix (12) is passed through the catalytic oxidizer (36) to maintain proper catalytic oxidizer temperatures. Supplemental fuel and air are added as appropriate upstream or downstream of the non-catalytic oxidizer (10) to maintain proper heat values in each portion of the system.