

Title (en)
METHOD AND APPARATUS FOR USING FREE RADICALS TO REDUCE POLLUTANTS IN THE EXHAUST GASES FROM THE COMBUSTION OF A FUEL

Title (de)
VERFAHREN UND VORRICHTUNG ZUR VERMINDERUNG DER SCHADSTOFFE IM AUSPUFFGAS DER BRENNSTOFFVERBRENNUNG MITTELS FREIER RADIKALE

Title (fr)
PROCEDE ET APPAREIL UTILISANT DES RADICAUX LIBRES AFIN DE REDUIRE LES POLLUANTS DANS LES GAZ D'ECHAPPEMENT DE COMBUSTION D'UN CARBURANT

Publication
EP 1157196 A4 20030122 (EN)

Application
EP 00913608 A 20000225

Priority
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• US 14231899 P 19990702

Abstract (en)
[origin: WO0050743A1] An apparatus and a method for the reduction of pollutants in a gas stream containing gas formed from the oxidation of fuel, such as, in the exhaust stream of a combustion engine (11). Radicals are produced using a corona discharge (e.g. 30, 40) in the combustion gas stream (18) of the engine, either in the precombustion gas stream or from water in the exhaust gas. When the radicals are produced from the exhaust gas stream, the radicals may be produced using a corona discharge (e.g. 30, 40) placed directly in the exhaust stream (18) leading to or within the catalytic converter (13), or a portion of the exhaust stream may be diverted to a remote corona discharge radical generator (23). The corona discharge (e.g. 30, 40) in the generator (23) produces radicals in the diverted exhaust gas, and the exhaust gas containing radicals is then conveyed to the exhaust gas stream (18) at a point upstream of the outlet of the catalytic converter (13).

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Citation (search report)
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• [X] WO 9852679 A1 19981126 - SIEMENS AG [DE], et al
• [X] US 5863413 A 19990126 - CAREN ROBERT P [US], et al
• [PX] DE 19828904 A1 19991223 - INST UMWELTTECHNOLOGIEN GMBH [DE]
• [X] PATENT ABSTRACTS OF JAPAN vol. 018, no. 212 (M - 1593) 15 April 1994 (1994-04-15)
• [X] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 11 30 September 1998 (1998-09-30)
• [A] PATENT ABSTRACTS OF JAPAN vol. 018, no. 164 (M - 1579) 18 March 1994 (1994-03-18)
• [A] NOMURA T ET AL: "Effect of applied voltage frequency on NOx removal rate for a superimposing discharge reactor", JOURNAL OF ELECTROSTATICS, ELSEVIER SCIENCE PUBLISHERS B.V. AMSTERDAM, NL, vol. 49, no. 1-2, May 2000 (2000-05-01), pages 83 - 93, XP004199354, ISSN: 0304-3886
• See references of WO 0050743A1

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