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(54) **A process and device for removing soot particles from the exhaust gas from a diesel engine**

(57) The invention provides a process for removing soot particles from exhaust gas from produced by a diesel engine. The process uses a particle filter (1) that collects soot particles with the aid of nitrogen dioxide which is generated by catalytic oxidation of nitrogen monoxide contained in the exhaust gas. The process is characterized in that the particle filter (1) is a deep-bed particle filter, having a filtration efficiency for the soot particles.

The particle filter is coated with a catalytic coating (2) for oxidizing nitrogen monoxide to nitrogen dioxide and the exhaust gas leaving the particle filter subsequently filtered through a particle filter serving as a soot barrier (3). The filter can have a filtration efficiency of over 95 %.

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EUROPEAN SEARCH REPORT

Application Number
EP 02 00 8253

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 1 055 805 A (DEGUSSA) 29 November 2000 (2000-11-29)	1-3,15	F01N3/023
Y	* paragraph '0037! - paragraph '0041!; figures *	4,5,7-12	F01N3/022
	---		F01N3/035
Y	US 5 426 936 A (ABRAMS RICHARD F ET AL) 27 June 1995 (1995-06-27) * column 4, line 14 - line 42; figures *	4,5,7-12	

A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 07, 31 July 1997 (1997-07-31) & JP 09 079024 A (TOYOTA MOTOR CORP), 25 March 1997 (1997-03-25) * abstract *	1,5,13	

A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 20, 10 July 2001 (2001-07-10) & JP 2001 082133 A (NISSAN MOTOR CO LTD), 27 March 2001 (2001-03-27) * abstract *		

The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		2 October 2003	Sideris, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if taken with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 00 8253

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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02-10-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1055805	A	29-11-2000	DE 19923781 A1	07-12-2000
			EP 1055805 A1	29-11-2000
			JP 2001003728 A	09-01-2001
			US 6516611 B1	11-02-2003
US 5426936	A	27-06-1995	US 5253476 A	19-10-1993
			EG 20293 A	31-10-1998
			US 5390492 A	21-02-1995
JP 09079024	A	25-03-1997	NONE	
JP 2001082133	A	27-03-2001	NONE	