

Title (en)  
METHOD FOR CONTROLLING OPERATING CONDITIONS OF A PARTICULATE FILTER COATED WITH A CATALYTIC PHASE FOR COMBUSTION ENGINE

Title (de)  
REGELUNGSVERFAHREN EINES KATALYTISCH BESCHICHTETEN PARTIKELFILTERS FÜR EINE BRENNKRAFTMASCHINE

Title (fr)  
PROCEDE DE GESTION DU FONCTIONNEMENT D'UN FILTRE A PARTICULES REVETU D'UNE PHASE CATALYTIQUE POUR MOTEUR A COMBUSTION

Publication  
**EP 1425498 A1 20040609 (FR)**

Application  
**EP 02779634 A 20020913**

Priority

- FR 0203128 W 20020913
- FR 0111915 A 20010914

Abstract (en)  
[origin: FR2829798A1] The loaded state of a filter is determined either by estimating the amount of soot trapped in the filter from a model or by measuring the amount of soot trapped by measuring the pressure differential. Selecting estimation or measurement depends on the running conditions of the engine. Progress of the regeneration is continuously monitored. Managing an engine exhaust system containing a particle filter (6) coated with a catalyst, comprises starting the regeneration according to predetermined criteria. The function parameters are adjusted as a function of the progress of filter regeneration. The continuous monitoring of regeneration involves detecting the start of regeneration by measuring the temperature downstream of the particle filter and comparing this temperature to a set threshold greater than the combustion temperature of the soot. Alternatively, the start of regeneration is detected by determining the ratio between the mass of soot at the moment of the regeneration starting and the mass of soot measured continuously or at intervals after regeneration starts. This ratio is compared to a threshold value representing a large reduction in the mass of soot. The mass of soot is measured using the same method as determining the loaded state of the filter. Alternatively, the start of regeneration is detected by measuring and monitoring the richness upstream and downstream of the filter and comparison of the two values. The end of regeneration is detected by comparing the pressure differential to a corresponding reference value for the empty filter, or by estimating the time taken to burn off the soot as a function of the amount of soot at the start of regeneration and at least one operating parameter of the engine. The process also includes detecting spontaneous regenerations without activating the means of assisting regeneration and starting a supplementary stage of initializing the level of loading in the filter in the stage of determining the loaded state of the filter. In particular this is done by measuring the temperature of the exhaust gases downstream of the filter: a spontaneous regeneration is detected when this temperature is greater than the combustion temperature of the particles for a set time.

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