Title (en)

Control method of the purging of nitrogen oxides in a catalytic converter for exhaust gases of an internal combustion engine

Title (de)

Steuerverfahren zum entfernen von Stickstoffoxide von einem Abgaskataslysator eines Verbrennungsmotors

Title (fr)

Procédé de commande de purge en oxydes d'azote d'un pot catalytique de traitement des gaz d'échappement d'un moteur à combustion interne

Publication

EP 1006270 B1 20030312 (FR)

Application

EP 99402945 A 19991126

Priority

FR 9815226 A 19981202

Abstract (en)

[origin: EP1006270A1] While the purge is being stopped in a process to purge nitrogen oxides from an engine exhaust, the air/fuel richness ratio is brought to a level (R2) between initial value R0 and purge value R1 and the angle is changed to a third set value (alpha 3) before being increased to a fourth value (alpha 4) as the air flow increases. The three variables are returned to their initial values (R0, D0, alpha 0) In a process to purge nitrogen oxides (NOx) from an internal combustion engine exhaust, a catalytic pot adsorbs the nitrous oxides when the motor operates with a fuel/air mixture poor in fuel. The purge is controlled by the temporary increase in richness of the fuel/air mixture by progressively reducing the air flow (D) into the engine so as to optimize the fuel consumption at the set richness. The angle of spark (alpha) is abruptly reduced to a set value (alpha 1) to maintain the torque generated by the engine. The angle is then increased to a second value (alpha 2) optimizing the fuel consumption of the engine as a function of the richness (R1) and the air flow (D1) fixed during the purge. The purge is stopped by returning the values of the richness (R), the air flow and the angle to their initial values. The intermediate value R1 matches a stoichiometric air/fuel ratio. While the purge is being stopped, the air/fuel richness ratio is brought to a level (R2) between initial value R0 and purge value R1 and the angle is changed to a third set value (alpha 3) before being increased to a fourth value (alpha 4) as the air flow increases. The three variables are returned to their initial values (R0, D0, alpha 0). The purge is started and stopped under the control of a system which measures the NOx load in the catalytic pot.

IPC 1-7

F02D 41/02; F02D 37/02

IPC 8 full level

F02D 37/02 (2006.01); **F02D 41/02** (2006.01); F01N 3/08 (2006.01)

CPC (source: EP)

F01N 3/0842 (2013.01); **F02D 37/02** (2013.01); **F02D 41/0275** (2013.01); F02D 2250/21 (2013.01)

Cited by

US8589054B2; FR2883042A1; FR2883041A1; EP1167711A3; WO2006095114A1; WO2006095113A1

Designated contracting state (EPC)

DE ES GB IT

DOCDB simple family (publication)

EP 1006270 A1 20000607; **EP 1006270 B1 20030312**; DE 69905841 D1 20030417; DE 69905841 T2 20031120; FR 2786814 A1 20000609; FR 2786814 B1 20010209

DOCDB simple family (application)

EP 99402945 A 19991126; DE 69905841 T 19991126; FR 9815226 A 19981202