Title (en)

STEADY-STATE METHOD FOR DETERMINING RICH AIR/FUEL RATIOS.

Title (de)

METHODE ZUR BESTIMMUNG DES LUFT-BRENNSTOFFVERHÄLTNISSES IM STATIONÄREN BETRIEBSZUSTAND.

Title (fr)

PROCEDE A REGIME STABLE POUR DETERMINER DES RAPPORTS RICHES D'AIR/CARBURANT.

Publication

EP 0148829 A4 19851211 (EN)

Application

EP 83902708 A 19830718

Priority

US 8301105 W 19830718

Abstract (en)

[origin: WO8500660A1] A steady-state method for determining air to fuel ratios rich of stoichiometry includes generation of a signal proportional to the concentrations of unreacted and partially reacted hydrocarbons. Two electrochemical cells (111, 121) are spaced from one another and define between them a partially enclosed volume. The volume is in communication with the exhaust gases through an opening. A first side of each of the two electrochemical cells is exposed to the volume. A second side of one of the electrochemical cells is exposed to the exhaust gases. A second side of the other of the electrochemical cells is exposed to a reference atmosphere usually air. External circuitry attached to the electrodes of both cells causes one electrochemical cell to pump oxygen into the partially enclosed volume from the reference atmosphere. This oxygen reacts with unreacted and partially reacted hydrocarbons within the volume which in turn causes an EMF to be generated across the other electrochemical cell. This EMF functions as the input to the external circuitry. The circuitry pumps oxygen into the volume at rate which will keep the induced EMF fixed at an arbitrary value. The magnitude of the steady-state current required to accomplish this task is proportional to the concentrations of unreacted and partially reacted hydrocarbons in the exhaust gas and hence is inversely proportional to rich A/F ratio.

IPC 1-7

G01N 27/58

IPC 8 full level

G01N 27/409 (2006.01); **G01N 27/27** (2006.01); **G01N 27/406** (2006.01); **G01N 27/407** (2006.01); **G01N 27/417** (2006.01)

CPC (source: EP)

G01N 27/4065 (2013.01); **G01N 27/417** (2013.01)

Citation (search report)

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- [X] ANALYTICAL CHEMISTRY, vol. 49, no. 12, October 1977, pages 1813-1817; D.M. HAALAND: "Internal-reference solid-electrolyte oxygen sensor"
- See references of WO 8500660A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

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