

Title (en)
METHOD AND APPARATUS FOR CONTROLLING AN INTERNAL COMBUSTION ENGINE

Title (de)
VERFAHREN UND VORRICHTUNG ZUM BETREIBEN EINER BRENNKRAFTMASCHINE

Title (fr)
APPAREIL ET PROCÉDÉ DE COMMANDE D'UN MOTEUR À COMBUSTION INTERNE

Publication
EP 2449238 A1 20120509 (DE)

Application
EP 10720183 A 20100601

Priority
• EP 2010057647 W 20100601
• DE 102009027311 A 20090630

Abstract (en)
[origin: WO2011000650A1] The present invention relates to a method for operating an internal combustion engine (10), wherein fuel reaches at least one combustion chamber (20) by means of at least one injection valve (18) comprising an electro-magnetic actuating device (24). By varying the control period of the injection valve (18) and analyzing a course of an electric operating variable of the injection valve (18) characterizing a movement of a valve element (28) of the injection valve (18), the opening delay time of the injection valve (18) is determined.

IPC 8 full level
F02D 41/20 (2006.01); **F02D 41/38** (2006.01)

CPC (source: EP US)
F02D 41/20 (2013.01 - EP US); **F02D 41/38** (2013.01 - EP US)

Citation (search report)
See references of WO 2011000650A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)
DE 102009027311 A1 20110105; CN 102472187 A 20120523; CN 102472187 B 20141112; EP 2449238 A1 20120509; EP 2449238 B1 20170426; JP 2012531561 A 20121210; JP 5784013 B2 20150924; US 2012166069 A1 20120628; US 9026342 B2 20150505; WO 2011000650 A1 20110106

DOCDB simple family (application)
DE 102009027311 A 20090630; CN 201080029730 A 20100601; EP 10720183 A 20100601; EP 2010057647 W 20100601; JP 2012518846 A 20100601; US 201013381303 A 20100601