

Title (en)
COMBUSTION CONTROL VIA HOMOGENEOUS COMBUSTION RADICAL IGNITION (HCRI) OR PARTIAL HCRI IN CYCLIC IC ENGINES

Title (de)
VERBRENNUNGSSTEUERUNG MITTELS HOMOGENER VERBRENNUNGSRADIKALER ZÜNDUNG ODER TEILWEISER HOMOGENER VERBRENNUNGSRADIKALER ZÜNDUNG IN ZYKLISCHEN MOTOREN

Title (fr)
CONTRÔLE DE LA COMBUSTION AU MOYEN D'UN ALLUMAGE RADICAL DE COMBUSTION HOMOGENÈE (HCRI) OU D'UN HCRI PARTIEL DANS LES MOTEURS À COMBUSTION INTERNE CYCLIQUES

Publication
EP 2577035 A4 20170125 (EN)

Application
EP 11790475 A 20110603

Priority

- US 201161484179 P 20110509
- US 94530610 A 20101112
- US 35093910 P 20100603
- US 201061426503 P 20101222
- US 2011039090 W 20110603

Abstract (en)
[origin: WO2011153448A1] A process (800) is provided for improving combustion control and fuel efficiency in rotary and reciprocating IC engines by enabling leaner combustion at higher compression ratios using less heat for ignition. Embodiments employ secondary chambers (32) of minimal total volume within a cylinder periphery (36). These chambers (32) communicate with a main chamber (34) via conduits (42) and enable a radical ignition ("RI") species generation and supply process that starts in earlier cycles to be augmented and used in later cycles. Measures regulate the RI species generated and provided to the main chamber (34). These species alter dominant chain-initiation reactions of the combustion ignition mechanism. Also employed when preferable are fluids of higher heat of vaporization and volatility but lower ignitability than the fuel. This process improves combustion in radical ignition engines and radical augmented spark and compression ignition engines.

IPC 8 full level
F02B 1/12 (2006.01); **F02B 19/12** (2006.01); **F02D 41/30** (2006.01)

CPC (source: EP KR)
F02B 11/00 (2013.01 - EP); **F02B 19/02** (2013.01 - EP); **F02B 19/1095** (2013.01 - EP); **F02B 19/165** (2013.01 - EP); **F02B 23/06** (2013.01 - EP); **F02D 19/024** (2013.01 - EP); **F02D 41/00** (2013.01 - KR); **F02D 41/0027** (2013.01 - EP); **F02D 41/3041** (2013.01 - EP); **F02D 41/3094** (2013.01 - EP); **F02D 45/00** (2013.01 - KR); **F02M 21/0275** (2013.01 - EP); **F02M 21/0278** (2013.01 - EP); **F02M 21/0284** (2013.01 - EP); **F02M 25/00** (2013.01 - KR); **F02M 26/23** (2016.02 - EP); **F02D 37/02** (2013.01 - EP); **F02D 2041/389** (2013.01 - EP); **Y02T 10/12** (2013.01 - EP); **Y02T 10/30** (2013.01 - EP)

Citation (search report)

- [X] US 2007235002 A1 20071011 - BLANK DAVID ALAN [US]
- [I] JP 2001248445 A 20010914 - NISSAN MOTOR
- [I] US 4898135 A 19900206 - FAILLA CHARLES C [US], et al
- [I] WO 2009064028 A1 20090522 - NISSAN MOTOR [JP], et al
- See references of WO 2011153448A1

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 RS SE SI SK SM TR

DOCDB simple family (publication)
WO 2011153448 A1 20111208; EP 2577035 A1 20130410; EP 2577035 A4 20170125; KR 101794536 B1 20171201; KR 20130039326 A 20130419; KR 20150086562 A 20150728

DOCDB simple family (application)
US 2011039090 W 20110603; EP 11790475 A 20110603; KR 20137000154 A 20110603; KR 20157018670 A 20110603