

Title (en)  
FUEL SUPPLY APPARATUS

Title (de)  
KRAFTSTOFFZUFUHRVORRICHTUNG

Title (fr)  
APPAREIL D'ALIMENTATION DE CARBURANT

Publication  
**EP 1904738 A1 20080402 (EN)**

Application  
**EP 06780773 A 20060628**

Priority  
• JP 2006313346 W 20060628  
• JP 2005211792 A 20050721

Abstract (en)  
[origin: WO2007010745A1] A fuel supply apparatus (1) that supplies fuel to an internal combustion engine (100) by injecting liquid fuel from a fuel injection valve (6) into a suction port (101) is configured by a microbubble generator (4) that generates microbubbles and an ultrasonic wave generator (5) that generates an ultrasonic wave depending on a gas in the microbubbles generated by the microbubble generator (4). In the fuel supply apparatus (1), the generated microbubbles are mixed into the liquid fuel that is supplied to the fuel injection valve (6), and the liquid fuel in which the microbubbles are mixed is irradiated with the ultrasonic wave depending on the driving state of the internal combustion engine (100). When the liquid fuel in which the microbubbles are mixed is irradiated with the ultrasonic wave, a temperature of the liquid fuel is raised instantaneously due to contraction of the microbubbles.

IPC 8 full level  
**F02M 55/02** (2006.01); **B01F 25/70** (2022.01); **F02D 19/08** (2006.01); **F02M 17/22** (2006.01); **F02M 27/08** (2006.01); **F02M 57/00** (2006.01)

CPC (source: EP)  
**F02M 27/08** (2013.01); **F02M 53/02** (2013.01); **F02M 69/041** (2013.01); **F02M 69/042** (2013.01); **F02M 69/08** (2013.01);  
**F02D 2200/0606** (2013.01)

Citation (search report)  
See references of WO 2007010745A1

Designated contracting state (EPC)  
DE FR

DOCDB simple family (publication)  
**WO 2007010745 A1 20070125**; CN 101228348 A 20080723; CN 101228348 B 20100908; DE 602006010391 D1 20091224;  
EP 1904738 A1 20080402; EP 1904738 B1 20091111; JP 2007024012 A 20070201; JP 4581884 B2 20101117

DOCDB simple family (application)  
**JP 2006313346 W 20060628**; CN 200680026735 A 20060628; DE 602006010391 T 20060628; EP 06780773 A 20060628;  
JP 2005211792 A 20050721