

Title (en)

UPGRADING OF PETROLEUM BY COMBINED ULTRASOUND AND MICROWAVE TREATMENTS

Title (de)

VEREDELUNG VON ERDÖL DURCH KOMBINIERTE BEHANDLUNG MIT ULTRASCHALL UND MIKROWELLEN

Title (fr)

AMELIORATION DU PETROLE PAR DES TRAITEMENTS COMBINES AUX ULTRASONS ET AUX MICRO-ONDES

Publication

**EP 1848788 A4 20080827 (EN)**

Application

**EP 06717486 A 20060106**

Priority

- US 2006000293 W 20060106
- US 5911505 A 20050215

Abstract (en)

[origin: US2006180500A1] The treatment of petroleum and petroleum fractions by ultrasound to reduce or eliminate the sulfur levels and to upgrade the material by lowering the boiling points of its various components is improved by the exposure of the treated emulsion to microwave energy to separate the phases.

IPC 8 full level

**C10G 32/02** (2006.01); **C10L 1/04** (2006.01)

CPC (source: EP KR US)

**C10G 32/00** (2013.01 - EP US); **C10L 1/04** (2013.01 - KR)

Citation (search report)

- [XY] US 6716358 B2 20040406 - VARADARAJ RAMESH [US]
- [Y] US 6086830 A 20000711 - KARTCHNER HENRY H [US]
- [Y] US 3616375 A 19711026 - INOUE KIYOSHI
- [A] WO 0015734 A1 20000323 - JEANBLANC JAMES K [US]
- See references of WO 2006088567A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

**US 2006180500 A1 20060817**; AR 053670 A1 20070516; CA 2601578 A1 20060824; CN 101155900 A 20080402; EP 1848788 A2 20071031; EP 1848788 A4 20080827; KR 20070107120 A 20071106; NO 20074551 L 20071113; RU 2007134398 A 20090327; RU 2361901 C2 20090720; WO 2006088567 A2 20060824; WO 2006088567 A3 20071025

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**US 5911505 A 20050215**; AR P060100399 A 20060203; CA 2601578 A 20060106; CN 200680011189 A 20060106; EP 06717486 A 20060106; KR 20077020874 A 20070912; NO 20074551 A 20070910; RU 2007134398 A 20060106; US 2006000293 W 20060106