

Search query (2): [SP]: 1. a method to enhance the recovery of oil from an oil field, comprising: applying heat to a colloidal hydrocarbon medium that comprises hydrocarbon chains applying pressure waves having a predetermined frequency and intensity to hydrocarbon chains and cracking hydrocarbon chains into relatively shorter hydrocarbon chains by application of the pressure waves. 2. the method of claim 1, wherein applying heat comprises applying steam. 3. the method of claim 1, wherein the pressure waves are applied directly to hydrocarbon chains to be cracked. 4. the method of claim 1, wherein the pressure waves are applied indirectly to hydrocarbon chains to be cracked. 5. the method of claim 1, wherein applying pressure waves comprises applying pressure waves to a first plurality of hydrocarbon chains, in order to produce an activated colloidal hydrocarbon medium and introducing the activated colloidal hydrocarbon medium to a second plurality of hydrocarbon chains in order to produce a radical chain reaction. 6. the method of claim 1, wherein applying pressure waves is performed within the oil field, by use of an activator within the oil field. 7. the method of claim 1, wherein applying pressure waves is performed outside of the oil field, by use of an activator outside of the oil field. 8. the method of claim 1, wherein applying pressure waves is performed by use of a rotor situated in a housing pervaded by the colloidal hydrocarbon medium. 9. a system to enhance the recovery of oil from an oil field, comprising: a heat applicator configured to apply heat to a colloidal hydrocarbon medium that comprises hydrocarbon chains and a pressure wave generator configured to apply pressure waves having a predetermined frequency and intensity to hydrocarbon chains, in order to crack hydrocarbon chains into relatively shorter hydrocarbon chains. 10. the system of claim 9, wherein the heat applicator comprises a steam injector. 11. the system of claim 9, wherein the pressure wave generator is configured to apply pressure waves directly to hydrocarbon chains to be cracked. 12. the system of claim 9, wherein the pressure wave generator is configured to apply pressure waves indirectly to hydrocarbon chains to be cracked. 13. the system of claim 9, wherein the pressure wave generator configured to apply pressure waves to a first plurality of hydrocarbon chains, in order to produce an activated colloidal hydrocarbon medium, the system further comprises: an interface from the pressure wave generator to a second plurality of hydrocarbon chains. 14. the system of claim 9, wherein the pressure wave generator comprises an activator within the oil field, the activator being configured to apply pressure waves within the oil field. 15. the system of claim 9, wherein the pressure wave generator comprises an activator outside of the oil field, the activator being configured to apply pressure waves outside of the oil field. 16. the system of claim 9, wherein the pressure wave generator comprises a rotor situated in a housing pervaded by the colloidal hydrocarbon medium.

Results: 11

Search history

Search PN=(WO2013032698) (Results 1)

1:

Search [SP]: 1. a method to enhance the recovery of oil from an oil field, comprising: applying heat to a colloidal hydrocarbon medium that comprises hydrocarbon chains applying pressure waves having a predetermined frequency and intensity to hydrocarbon chains and cracking hydrocarbon chains into relatively shorter hydrocarbon chains by application of the pressure waves. 2. the method of claim 1, wherein applying heat comprises applying steam. 3. the method of claim 1, wherein the pressure waves are applied directly to hydrocarbon chains to be cracked. 4. the method of claim 1, wherein the pressure waves are applied indirectly to hydrocarbon chains to be cracked. 5. the method of claim 1, wherein applying pressure waves comprises applying pressure waves to a first plurality of hydrocarbon chains, in order to produce an activated colloidal hydrocarbon medium and introducing the activated colloidal hydrocarbon medium to a second plurality of hydrocarbon chains in order to produce a radical chain reaction. 6. the method of claim 1, wherein applying pressure waves is performed within the oil field, by use of an activator within the oil field. 7. the method of claim 1, wherein applying pressure waves is performed outside of the oil field, by use of an activator outside of the oil field. 8. the method of claim 1, wherein applying pressure waves is performed by use of a rotor situated in a housing pervaded by the colloidal hydrocarbon medium. 9. a system to enhance the recovery of oil from an oil field, comprising: a heat applicator configured to apply heat to a colloidal hydrocarbon medium that comprises hydrocarbon chains and a pressure wave generator configured to apply pressure waves having a predetermined frequency and intensity to hydrocarbon chains, in order to crack hydrocarbon chains into relatively shorter hydrocarbon chains. 10. the system of claim 9, wherein the heat applicator comprises a steam injector. 11. the system of claim 9, wherein the pressure wave generator is configured to apply pressure waves directly to hydrocarbon chains to be cracked. 12. the system of claim 9, wherein the pressure wave generator is configured to apply pressure waves indirectly to hydrocarbon chains to be cracked. 13. the system of claim 9, wherein the pressure wave generator configured to apply pressure waves to a first plurality of hydrocarbon chains, in order to produce an activated colloidal hydrocarbon medium, the system further comprises: an interface from the pressure wave generator to a second plurality of hydrocarbon chains. 14. the system of claim 9, wherein the pressure wave generator comprises an activator within the oil field, the activator being configured to apply pressure waves within the oil field. 15. the system of claim 9, wherein the pressure wave generator comprises an activator outside of the oil field, the activator being configured to apply pressure waves outside of the oil field. 16. the system of claim 9, wherein the pressure wave generator comprises a rotor situated in a housing pervaded by the colloidal hydrocarbon medium. (Results 11)

1) Family number: 53122821 (US2013048538A)

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Title: SYSTEM AND METHOD FOR COLD CRACKING WITH STEAM

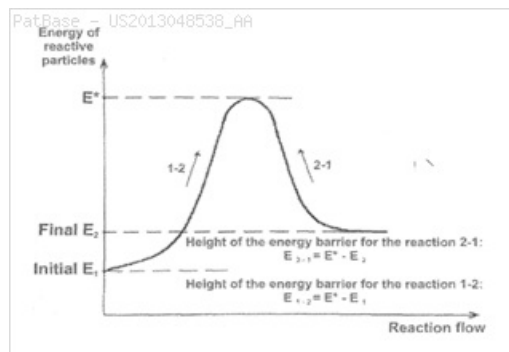
Abstract: Method to enhance the recovery of oil from an oil field, comprising: applying heat to a colloidal hydrocarbon medium that comprises hydrocarbon chains; and applying pressure waves having a predetermined frequency and intensity to hydrocarbon chains, in order to crack hydrocarbon chains into relatively shorter hydrocarbon chains. Optionally: applying heat may comprise applying steam; the pressure waves may be applied directly or indirectly to hydrocarbon chains to be cracked; applying pressure waves may be performed within the oil field, by use of an Activator within or outside of the oil field; applying pressure waves may be performed by use of a rotor situated in a housing pervaded by the colloidal hydrocarbon medium.

Classifications:

International (IPC 8-9): B01J19/08 B06B1/00 C09K8/592 C10G1/02 C10G33/02 C10G9/00 C10G99/00 E21B1/00 E21B36/00 E21B43/00 E21B43/24 (Advanced/Invention); C10G99/00 (Core/Invention)

CPC: C10G1/02 E21B43/003 C09K8/592 E21B36/00 E21B43/24

US: 166/302 166/303 166/57 208/106 422/127



Family:

Publication number	Publication date	Application number	Application date
AP201407528 A0	20140331	AP20140007528	20120815
AR087703 AA	20140409	AR2012P103175	20120828
AU2012301471 AA	20130307	AU20120301471	20120815
AU2012301471 BB	20170803	AU20120301471	20120815
AU2017258865 AA	20171221	AU20170258865	20171103
BR112014004769 A2	20170613	BR20141104769	20120815
CA2846157 AA	20140221	CA20122846157	20120815
CA2846157 AA	20130307	CA20122846157	20120815
CN103930526 A	20140716	CN201280053646	20120815
CO6980653 A2	20140627	CO20140061933	20140321
EA201270700 A2	20130329	EA20120070700	20120827
EA201270700 A3	20130930	EA20120070700	20120827
ECSP14013261 A	20140930	EC2014SP13261	20140321
EP2751226 A2	20140709	EP20120826752	20120815
EP2751226 A4	20170920	EP20120826752	20120815
GC5323 A	20170406	GC2012P022102	20120828
IN02134DN2014 A	20150313	IN2014DN02134	20140321
MX2014002136 A1	20140826	MX20140002136	20120815
PE20372014 A1	20150110	PE20140000273	20120815
US2013048538 AA	20130228	US20110220280	20110829
US2015136401 AA	20150521	US20140587285	20141231
UY34294 A1	20130405	UY20120034294	20120828
WO13032698 A2	20130307	WO2012US50850	20120815
WO13032698 A3	20130425	WO2012US50850	20120815

Priority:

US20110220280 20110829 AU20120301471 20120815 WO2012US50850 20120815
US20140587285 20141231 AU20170258865 20171103

Probable Assignee: INNOVATIVE CRUDE TECHNOLOGIES INC D B A ICT

Assignee(s): (std): INNOVATIVE CRUDE TECH INC D B A ICT ; INNOVATIVE CRUDE TECHNOLOGIES INC D B A ICT ; LAURA JOSEPH ; NUERK RUEDIGER UWE

Assignee(s): INNOVATIVE CRUDE TECHNOLOGIES INC D B A ICT ; INNOVATIVE CRUDE TECHNOLOGIES INC

Inventor(s): (std): LAURA JOSEPH ; LAURA JOSEPH M ; NUERK RUEDIGER UWE ; RUEDIGER UWE NUERK ; JOSEPH LAURA

Agent(s): WRAYS; INNOFY PTY LTD; GOWLING LAFLEUR HENDERSON LLP; JAIME EDUARDO DELGADO VILLEGAS; SAMPSON EIMEAR; HASSAN AL MULLA; MALDJIAN JOHN P

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

2) Family number: 12003157 (CN1252486A)

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Title: Petroleum recovering method and equipment through microwave cracking into light hydrocarbon

Abstract: Heated crude oil is cracked inside the microwave cracking furnace disclosed by this invention in the presence of catalyst into light hydrocarbon which is then pressed by a pressurizing pump into oil layer to dilute condensed oil and to increase petroleum recovering amount. The miniturized microwave cracking furnace of the present invention consists of microwave source, microwave guide, coupler, furnace cavity, heat insulating layer, etc. The technological equipment of the present invention is simple and can result in high recovery rate.

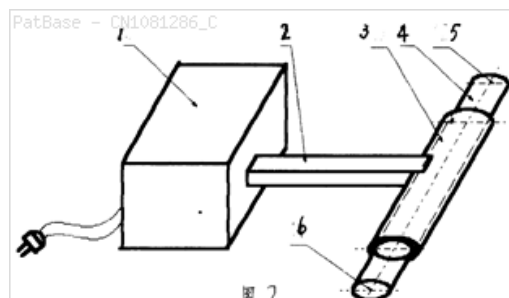
Classifications:

International (IPC 8-9): C10G15/10 E21B43/16

E21B43/22 (Advanced/Invention);

C10G15/00 E21B43/16 (Core/Invention)

International (IPC 1-7): C10G15/10 E21B43/16 E21B43/22



Family:

Publication number	Publication date	Application number	Application date
CN1081286 C	20020320	CN19991020068	19991122
CN1252486 A	20000510	CN19991020068	19991122

Priority:

CN19991020068 19991122

Probable Assignee: DING YAN

Assignee(s): (std): DING YAN

Inventor(s): (std): DING QIZHU ; DING YAN

NO309930 B1	20010423	NO19950001409	19950410
NO900693 A	19900815	NO19900000693	19900213
NO900693 A0	19900213	NO19900000693	19900213
NO951409 A	19900815	NO19950001409	19950410
NO951409 A0	19950410	NO19950001409	19950410
RU2073064 C1	19970210	SU19904743181	19900213
US5059404 A	19911022	US19890310202	19890214
US5306481 A	19940426	US19910724156	19910701
US5536488 A	19960716	US19950385082	19950207
US5637192 A	19970610	US19950439456	19950511
US6149765 A	20001121	US19960747581	19961112

Priority:

US19890310202 19890214	IN1989DE00702 19890807	CA19890608345 19890815
NO19900000693 19900213	EP19900301554 19900214	US19910724156 19910701
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US19960747581 19961112		

Probable Assignee: MFG AND TECHNOLOGY CONVERSION IN

Assignee(s): (std): MANSOUR MONTAZ NOSSHI ; MANUF AND TECHNOLOGY CONVERS ; MANUF AND TECHNOLOGY CONVERSION ; MFG AND TECH CONVERSION INT INC ; MFG AND TECHNOLOGY ; MANUFACTURING AND TECHNOLOGY ; DURAI SWAMY KANDA SWAMY ; MFG AND TECHNOLOGY C ; MFG AND TECHNOLOGY CONVERSION ; MFG AND TECHNOLOGY CONVERSION IN ; WAREEN DAVID WALTER

Assignee(s): THERMOCHEM RECOVERY INT INC ; THERMOCHEM RECOVERY INT INC A OF MARYLAND CORP ; MFG AND TECHNOLOGY CONVERSION INT INC A CORP OF MD ; MFG AND TECHNOLOGY CONVERSION INT INC ; WARREN DAVID WALTER ; MFG AND TECHNOLOGY CONVERSION INT ; THERMOCHEM INC ; THERMOCHEM RECOVERY INT ; MANIYUFUAKUCHIYUARINGU AND TECHNOL KONBUAAJOHN INT ; MANIYUFUAKUCHIYUARINGU AND TECHNOL KONBUAAJOHN INTERNATL INC ; ABELL FOUNDATION INC ; ABELL FOUNDATION INC A CORP OF MARYLAND ; CONVERSION MFG AND TECH INT INC ; MANUF AND TECHNOLOGY CONVERSION INT INC ; MANUFACHURING END TEKNOLODZHI KONVERSHN INTERNESH ; MANUFACTURING AND TECHNOLOGY CONVERSION INTERNATIONAL INC ; MANUFACTURING AND TECHNOLOGY CONVERSION INTERNATIONAL INC COLUMBIA MD ; MANUFACTURING AND TECHNOLOGY CONVERSION INTERNATIONAL INC COLUMBIA MD US ; MANUFACHURING END TEKNOLODZHI KONVERSHN INTERNESHNL INK ; MANUFACTURING AND TECHNOLOGY CONVERSION INTERNATIONAL ; MANUFACHURING EHND TEKNOLODZHI KONVERSHN INTERNEHSHNL, INK. ; MERCANTILE FE DEPOSIT AND TRUST CO SA ; MERCANTILE SAFE DEPOSIT AND TRUST CO ; MANUFACTURING AND TECHNOLOGY CONVERSION ; MANUFACTURING AND TECHNOLOGY CONVERSION INTERNATIO

Inventor(s): (std): DURAI SWAMY KANDA SWAMY ; MANSOUR MONTAZ NOSSHI ; WARREN DAVID WALTER ; WARREN DAVID W ; WAREEN DAVID WALTER ; KANDA SWAMY DURAI SWAMY ; MANSOUR MONTAZ N

Inventor(s): KANDA-SVAMI DURAJ-SVAMI[US] ; KANDAASUUOMII DOURAIISUUOMII ; WARREN DAVID WALTER SHERMAN OAKS CALIFORNIA ; WARREN DAVID WALTER SHERMAN OAKS CALIFORNIA 91423 US ; DAVID WALTER WARREN ; KANDA SVAMI DURAJ SVAMI ; DURAI SWAMY KANDA SWAMY TORRENCE CALIFORNIA 90503 US ; DEVID VOLTER UORREN ; DEHVID VOLTER UORREN[US] ; DEBUITSUDO UORUTAA UOREN ; WARREN DAVID WALTER SHERMAN OAKS CALIFORNIA 91423 ; MANSOUR MONTAZ NOSSHI COLUMBIA MARYLAND 21045 ; DURAI SWAMY KANDA SWAMY TORRENCE CALIFORNIA 90503 ; MANSOUR MONTAZ NOSSHI COLUMBIA MARYLAND 21045 US ; MOMUTAZU NOTSUSHI MANSOORU ; MONTAZ NOSSHI MANSUR[US] ; MONTAZ NOSSHI MANSUR ; MONTAZ NOSSHI MANSOUR ; DURAI SWAMY KANDA SWAMY TORRENCE CALIFORNIA

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AT BE CH DE DK ES FR GB GR IT LI NL SE

4) Family number: 3877144 (US4417621A)

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Title: Method for recovery of oil by means of a gas drive combined with low amplitude seismic excitation

Abstract: The present invention relates to a method for recovering oil from a subterranean, viscous oil-containing formation by injecting a gaseous driving fluid such as carbon dioxide into the formation and recovering oil therefrom while simultaneously transmitting vibrations in the seismic frequency range having an amplitude not exceeding 100 Angstrom units through the formation which enhances the flow of the carbon dioxide and thereby increases the efficiency of recovering the oil. The frequency of the vibrations is within the range of 0.1 the 500 Hz and preferably 1 to 100 Hz.

Classifications:

International (IPC 8-9): E21B43/00 E21B43/16 (Advanced/Invention);

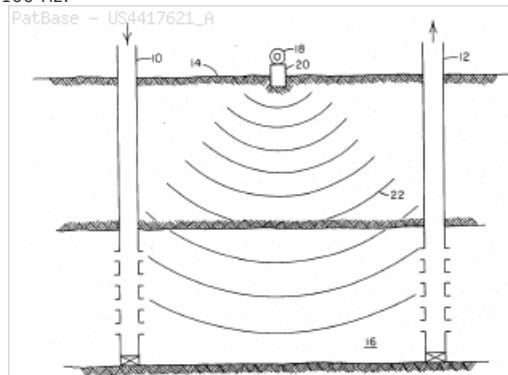
E21B43/00 E21B43/16 (Core/Invention)

International (IPC 1-7): E21B43/16

CPC: E21B43/003 E21B43/168

European: E21B43/00C E21B43/16G2

US: 166/249 166/268



Family:

Publication number	Publication date	Application number	Application date
US4417621 A	19831129	US19810315781	19811028

Priority:

US19810315781 19811028

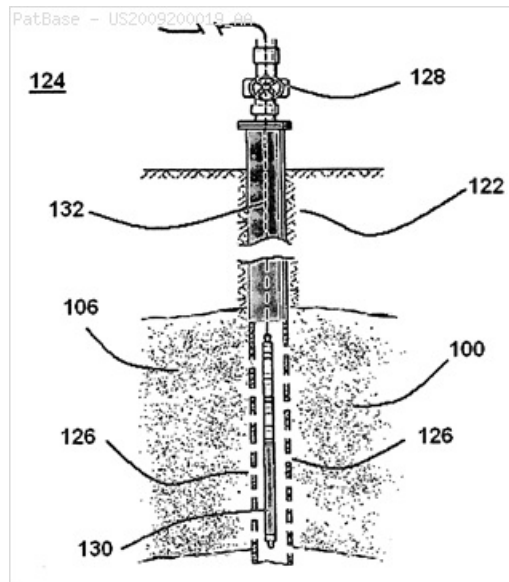
Probable Assignee: MOBIL OIL A CORP OF CORP**Assignee(s):** (std): MASSE LUCIEN ; MEDLIN WILLIAM L ; ZUMWALT GARY L**Assignee(s):** MOBIL OIL A CORP OF CORP ; MOBIL OIL CORP**Inventor(s):** (std): MASSE LUCIEN ; MEDLIN WILLIAM L ; ZUMWALT GARY L**5) Family number: 43623977 (US2009200019A)**

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Title: SYSTEM AND METHOD FOR ENHANCED OIL RECOVERY USING AN IN-SITU SEISMIC ENERGY GENERATOR**Abstract:** Disclosed are systems and methods for generating seismic acoustic waves, and more particularly a downhole electro-hydraulic seismic pressure wave source to enhance oil recovery.**Classifications:****International (IPC 8-9):** E21B28/00 E21B43/00

E21B43/25 (Advanced/Invention);

E21B28/00 E21B43/00 E21B43/25 (Core/Invention)

CPC: E21B28/00 E21B43/003**European:** E21B28/00 E21B43/00C**US:** 166/177.1 166/177.2 166/177.200S 166/249**Family:**

Publication number	Publication date	Application number	Application date
■ US2009200019 AA	20090813	US20090368779	20090210
■ US8113278 BB	20120214	US20090368779	20090210

Priority:

US20080027573P 20080211 US20090368779 20090210

Probable Assignee: HYDROACOUSTICS INC**Assignee(s):** (std): COURTRIGHT DENNIS R ; DELACROIX ROBERT F ; HYDROACOUSTIC INC**Assignee(s):** HYDROACOUSTICS INC**Inventor(s):** (std): DELACROIX ROBERT F ; COURTRIGHT DENNIS R**Agent(s):** BASCH AND NICKERSON LLP; DUANE C**6) Family number: 44357842 (US2003051988A)**

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Title: Treatment of crude oil fractions, fossil fuels, and products thereof with ultrasound**Abstract:** Crude oil fractions, fossil fuels, and organic liquids in general in which it is desirable to reduce the levels of fused-ring compounds, aromatics, and olefins are combined with an aqueous phase to form an emulsion and treated with ultrasound with the effect of opening rings in the fused-ring compounds, saturating aromatics, and converting the olefins to paraffins. In fossil fuels and crude oil fractions, the process raises the API gravity, and in diesel fuels, the process raises the cetane index and thereby improves performance. In fuels and fractions with sulfur-containing and nitrogen-containing components, the process reduces the level of these compounds. The process can be performed both with and without the added presence of hydrogen peroxide. The invention is performed either as a continuous process or a batch process.**Classifications:****International (IPC 8-9):** B01D B01D1/00 B01D53/60 B01J19/10 C07C1/00 C10G C10G15/08 C10G27/00 C10G27/12 C10G31/00 C10G32/02 C10G45/02 C10G45/04 C10G45/58 (Advanced/Invention);

B01D1/00 C10G15/00 C10G31/00 C10G32/00 C10G45/00 (Core/Invention);

B01D (Subclass/Invention);

C10G (Subclass/Non-invention)

International (IPC 1-7): B01D1/00 C01G45/00 C07C1/00 C07C2/00 C07C4/00 C07C5/00 C10G31/00**CPC:** Y10S44/904 C10G2300/1033 C10G2300/104 C10G2300/1044 C10G2300/1051 C10G2300/1055 C10G2300/1059

C10G2300/202 C10G2300/207 B01J19/10 C10G15/08 C10G27/12 C10G31/00 C10G32/00 C10G32/02 C10G45/02 C10G45/58

European: B01J19/10 C10G15/08 C10G27/12 C10G31/00 C10G32/00 C10G32/02 C10G45/02 C10G45/58**US:** 204/157.15 204/157.6 204/157.62 204/157.78 208/192 208/196 208/208 208/208R 208/211 208/213 208/222 208/227

208/229 208/254 208/254.00R 208/254R 44/628 44/904 585/700 585/940

Family:

Publication number	Publication date	Application number	Application date
AT381962 E	20080115	AT20040751584T	20040506
AU2004238288 AA	20041125	AU20040238288	20040506
AU2004238288 BB	20101104	AU20040238288	20040506
AU2011200452 AA	20110224	AU20110200452	20110203
AU2011200452 BB	20120927	AU20110200452	20110203
CA2528802 AA	20051208	CA20042528802	20040506
CA2528802 C	20150113	CA20042528802	20040506
CY1107363 T1	20121219	CY20081100343T	20080326
CY1114684 T1	20161005	CY20131100927T	20131021
DE602004010906 D1	20080207	DE200460010906T	20040506
DE602004010906 T2	20090102	DE200460010906T	20040506
DE602004042513 D1	20130814	DE200460042513T	20040506
DK1635924 T3	20080505	DK20040751584T	20040506
DK1844831 T3	20130908	DK20040109853T	20040506
EP1635924 A2	20060322	EP20040751584	20040506
EP1635924 A4	20060726	EP20040751584	20040506
EP1635924 B1	20071226	EP20040751584	20040506
EP1844831 A1	20071017	EP20070109853	20040506
EP1844831 B1	20130619	EP20070109853	20040506
ES2298783 T3	20080516	ES20040751584T	20040506
ES2428153 T3	20131106	ES20070109853T	20040506
HK1088269 A1	20080502	HK20060109255	20060821
HK1088269 A1	20061103	HK20060109255	20060821
HK1088269 A3	20061103	HK20060109255	20060821
HK1088269 B	20080502	HK20060109255	20060821
PT1635924 T	20080325	PT20040751584T	20040506
PT1844831 T	20130911	PT20070109853T	20040506
SI1635924 T1	20080630	SI20040030645T	20040506
SI1844831 T1	20131129	SI20040032081T	20040506
US2003051988 AA	20030320	US20010863127	20010522
US2004035753 AA	20040226	US20030431666	20030508
US2005167336 AA	20050804	US20050096779	20050401
US2005182285 AA	20050818	US20050096691	20050401
US2006157339 AA	20060720	US20060371567	20060309
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US7081196 C1	20110719	US20030431666	20030508
WO04101100 A2	20041125	WO2004US14243	20040506
WO04101100 A3	20060126	WO2004US14243	20040506

Priority:

US20010853127	20010510	US20010863127	20010522	US20030431666	20030508
AU20040238288	20040506	EP20040751584	20040506	EP20070109853	20040506
WO2004US14243	20040506	US20050096691	20050401	US20050096779	20050401
US20060371567	20060309	AU20110200452	20110203		

Probable Assignee: PETROSONICS LLC**Assignee(s):** (std): CULLEN MARK ; MARK CULLEN**Assignee(s):** MOOTE PAUL S ; SULPHCO INC ; TALISMAN CAPITAL TALON FUND LTD ; CULLEN MARK RENO ; CULLEN MARK T ; CULLEN MARK5605 BROOKMEADOW LANERENONV89511US ; GUNNERMAN RUDOLF W ; PETROSONICS LLC**Inventor(s):** (std): MOOTE PAUL S ; MARK CULLEN ; GUNNERMAN RUDOLF W ; CULLEN MARK T ; CULLEN MARK**Inventor(s):** CULLEN MARK5605 BROOKMEADOW LANERENONV89511US ; CULLEN MARK RENO**Agent(s):** DAVIES COLLISON CAVE PTY LTD; DAVIES COLLISON CAVE; GOWLING LAFLEUR HENDERSON LLP; NOTARBARTOLO AND GERVAZI GMBH; GERVAZI GEMMA; MARTIN VICTORIA SOFIA; GLOBAL IP AGENT CO LTD; STETINA BRUNDA GARRED AND BRUCKER**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW**7) Family number: 46868534 (US2011005748A)**

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Title: RECOVERING HEAVY OIL THROUGH THE USE OF MICROWAVE HEATING IN HORIZONTAL WELLS

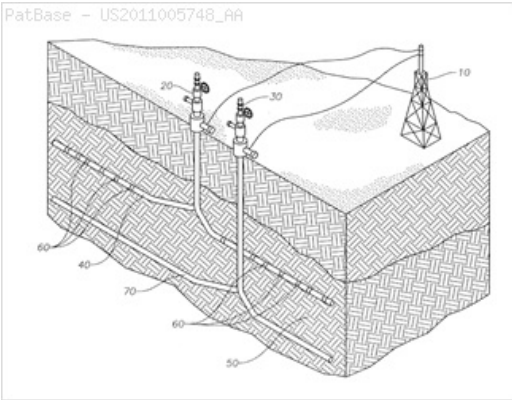
Abstract: A process to enhance secondary recovery of underground formations having heavy hydrocarbons through the use of a horizontal source well and a producing well. The horizontal source well is equipped with a plurality of microwave source emitters and the producing well is equipped with an artificial lift system. The horizontal source well is positioned within close proximity to the underground hydrocarbon formation and microwave energy is emitted from the microwave source emitters into the underground hydrocarbon formation. The microwave radiation heats up the heavy hydrocarbons, thereby lowering their viscosity, which allows the hydrocarbons to more easily flow into the producing well.

Classifications:**International (IPC 8-9):** E21B36/00 E21B43/16 E21B43/24 E21B43/30

H05B6/64 (Advanced/Invention);

E21B43/16 (Core/Invention)

CPC: E21B43/2401 E21B43/305 H05B6/802 H05B2214/03



Family:

Publication number	Publication date	Application number	Application date
GC6218 A	20171011	GC2010P015449	20100314
US2011005748 AA	20110113	US20100725165	20100316
US8646524 BB	20140211	US20100725165	20100316
WO10107726 A2	20100923	WO2010US27382	20100316
WO10107726 A3	20101118	WO2010US27382	20100316

Priority:

US20090160441P 20090316 US20100725165 20100316

Probable Assignee: SAUDI ARABIAN OIL CO

Assignee(s): (std): AL BURAIK KHALED ABDULLAH ; ARAMCO SERVICES CO ; SAUDI ARABIAN OIL CO

Assignee(s): SAUDI ARABIAN OIL COMPANY ; ARAMCO SERVICES COMPANY

Inventor(s): (std): AL BURAIK KHALED ABDULLAH

Inventor(s): KHALED ABDULLAH AL BURAIK

Agent(s): SULEIMAN I AL AMMAR LAW OFFICE; BRACEWELL AND GIULIANI LLP; RHEBERGEN CONSTANCE GALL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

8) Family number: 47458675 (CN101871339B)

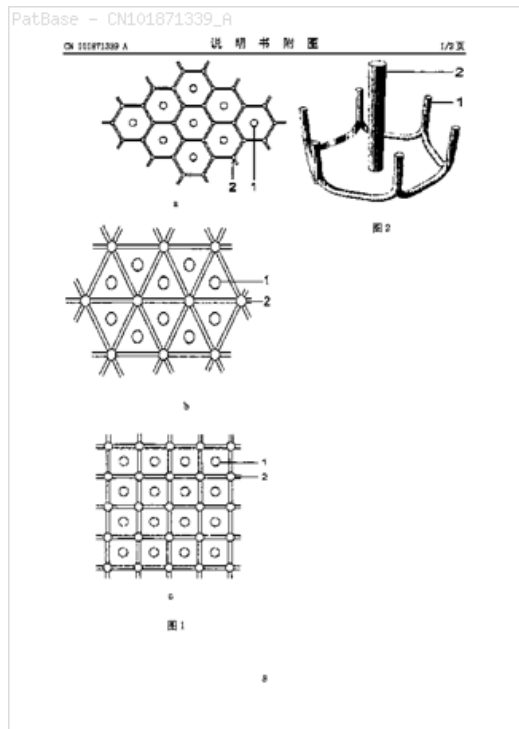
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Title: METHOD FOR UNDERGROUND IN-SITU EXTRACTION OF HYDROCARBON COMPOUND IN OIL SHALE

Abstract: The invention relates to a method for the underground in-situ extraction of a hydrocarbon compound in an oil shale, which comprises the following steps: arranging at least one working well and one production well in an enclosed working region where the hydrocarbon compound in the oil shale is extracted, communicating the bottoms among the working wells by directional drilling after a drilling well enters an oil shale ore layer, injecting water and inert gas water vapor into the working well to form a near-critical water microenvironment, cracking the oil shale into organic compounds with different chain lengths to form an oil-water mixture, lifting the oil-water mixture to the ground through the production well, and obtaining the hydrocarbon compound through an oil-water separating system. The heat utilization ratio is improved through a multi-well integrated heat circulating system, the extraction ratio of hydrocarbon substances is greatly improved through repeated oil-water separating and circulating processes, and the technical process is shortened. A water micro-pool is formed after an oil shale layer is overflowed by water, the cracking of the oil shale can be realized within 3 to 5 hours after a near-critical state is reached, and more energy sources and time are saved than an underground dry distillation method.

Classifications:

International (IPC 8-9): E21B43/16 E21B43/24 E21B43/241 E21B43/248 E21B43/30 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN101871339 A	20101027	CN201010210592	20100628
CN101871339 B	20130327	CN201010210592	20100628

Priority:

CN201010210592 20100628

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Inventor(s): (std): CHEN CHEN ; DENG SUNHUA ; GU QIANG ; HONGYAN WANG ; JUNFENG LI ; LI JUNFENG ; QIANG GU ; SUNHUA DENG ; WANG HONGYAN ; WANG ZHIJUN ; ZHIJUN WANG

9) Family number: 48432890 (US2012160494A)

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Title: PROCESS AND APPARATUS FOR ENHANCING RECOVERY OF HYDROCARBONS FROM WELLS

Abstract: A method of enhancing recovery of hydrocarbons from a hydrocarbon formation, includes heating the hydrocarbon formation by injecting heated gas into a borehole; generating a series of pressure pulses in the borehole by flashing a liquid into a gas; and directing the pressure pulses into the hydrocarbon formation.

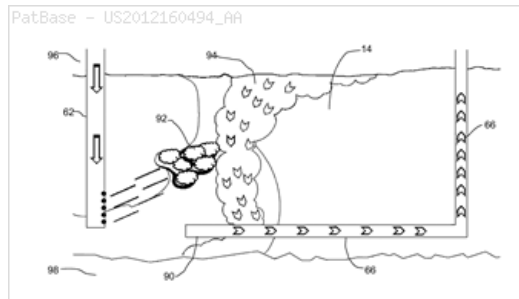
Classifications:

International (IPC 8-9): E21B36/00 E21B43/14 E21B43/16 E21B43/24 E21B43/25 (Advanced/Invention)

CPC: E21B43/24 E21B43/16

European: E21B43/16 E21B43/24

US: 166/272.1 166/303 166/57 166/57S 166/60



Family:

Publication number	Publication date	Application number	Application date
CA2773056 AA	20110310	CA20102773056	20100907
CA2773056 C	20151124	CA20102773056	20100907
EA024367 B1	20160930	EA20120070374	20100907
EA201270374 A1	20120928	EA20120070374	20100907
EP2473704 A1	20120711	EP20100813198	20100907
EP2473704 A4	20170802	EP20100813198	20100907
US2012160494 AA	20120628	US20100394122	20100907
US8851169 BB	20141007	US20100394122	20100907
WO11026226 A1	20110310	WO2010CA01354	20100907

US20090240023P 20090904

US20100394122 20100907

WO2010CA01354 20100907

Assignee(s): (std): NIKIPELO HAROLD J

Inventor(s): (std): NIKIPELO HAROLD J

Agent(s): WOODRUFF NATHAN V; REINHARDT MARKUS; CHRISTENSEN OCONNOR JOHNSON KINDNESS PLLC;
THOMPSON DOUGLAS B

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

10) Family number: 48910547 (US2011114470A)

Title: PROCESS AND SYSTEM FOR RECOVERING OIL FROM TAR SANDS USING MICROWAVE ENERGY

Abstract: A process for recovering an oil from a tar sand, including the steps of drying the tar sand to produce a dried tar sand, mixing the dried tar sand with a microwave absorbent to produce a mixed sand, and cracking the mixed sand with microwaves to produce an oil vapor product containing the oil.

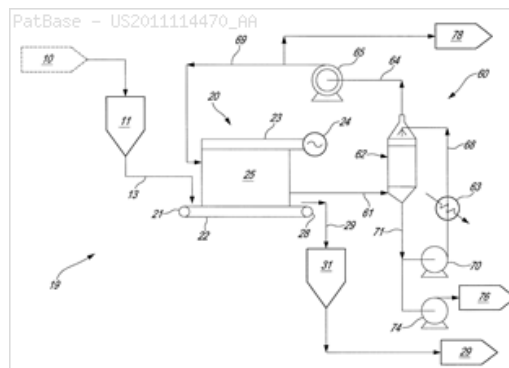
International (IPC 8-9): B01J19/08 B03B9/02 C07C4/02

C10G15/08 (Advanced/Invention)

CPC: C10G1/02 H05B6/80 H05B2214/03

European: C10G1/02 H05B6/80 T05B214/03

US: 204/157.15 204/157.150P 204/157.62 204/157.63 204/157.69
208/400 208/402 422/186 422/186S



Family:

Publication number	Publication date	Application number	Application date
CA2721744 AA	20110519	CA20102721744	20101117
CA2721744 C	20180123	CA20102721744	20101117
US2011114470 AA	20110519	US20090621923	20091119
US8771503 BB	20140708	US20090621923	20091119

US20090621923 20091119

CA20102721744 20101117

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Assignee(s): PAT TECHNOLOGY SYSTEMS INC ; CHA CORP

Inventor(s): (std): VERGNANI PAUL GIL ; CHA CHANG YUL

Agent(s): OGILVY RENAULT LLP SENCRL SRL; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; NORTON ROSE FULBRIGHT CANADA

11) Family number: 49243114 (US2011315601A)

Title: HIGH SHEAR PROCESS FOR PROCESSING NAPHTHA

Abstract: A method and system for processing naphtha, including a high shear mechanical device. In one embodiment, the method comprises forming a dispersion of gas in a naphtha hydrocarbon liquid in a high shear device prior to introduction in a cracking reactor/furnace. In another instance the system for processing naphtha comprises a high shear device for mechanically shearing hydrocarbons.

Classifications:

International (IPC 8-9): B01F13/10 B01F3/04 B01F5/06 B01J14/00

C07C4/02 C10G15/08 C10G31/00 C10G35/04 C10G9/00 C10G9/14

C10G9/40 (Advanced/Invention):

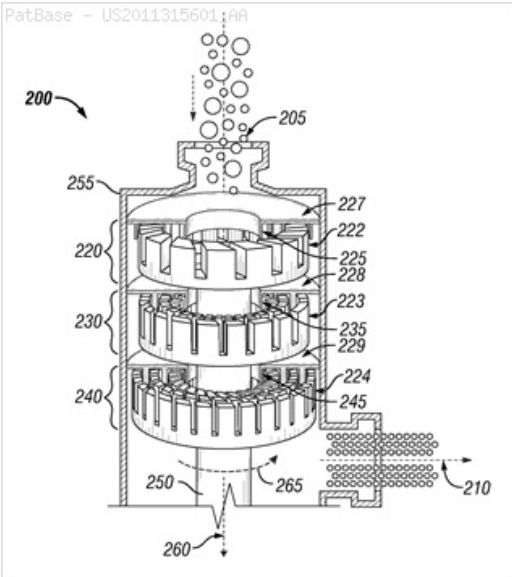
B01F13/10 B01F7/00 (Advanced/Non-invention)

CPC: C10G9/40 B01F7/00766 B01F13/1013 B01F13/1016 C10G9/00

C10G15/08 C10G31/00 C10G2300/1044 C10G2300/807 Y02P20/582

European: B01F13/10B2 C10G15/08 C10G31/00 C10G9/00 L01F13/10B
L01F7/00G1A M10G300/10G4

US: 1/1 196/46 196/46S 208/106 208/132 208/85 208/85P 422/187
422/606



Family:

Publication number	Publication date	Application number	Application date
EP2513259 A2	20121024	EP20100842586	20101216
EP2513259 A4	20140226	EP20100842586	20101216
IN04113DN2012 A	20151106	IN2012DN04113	20120510
IN286771 B	20170901	IN2012DN04113	20120510
US2011315601 AA	20111229	US20100969372	20101215
US2014161683 AA	20140612	US20140177908	20140211
US8821713 BB	20140902	US20100969372	20101215
US9222033 BB	20151229	US20140177908	20140211
WO11084564 A2	20110714	WO2010US60683	20101216
WO11084564 A3	20110922	WO2010US60683	20101216

Priority:

US2009028761P 20091217 US20100969372 20101215 WO2010US60683 20101216
US20140177908 20140211

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Assignee(s): HRD CORP

Inventor(s): (std): BORSINGER GREGORY G ; HASSAN ABBAS ; HASSAN AZIZ ; VISWANATHAN KRISHNAN

Inventor(s): KRISHNAN VISWANATHAN ; GREGORY BORSINGER ; ABBAS HASSAN ; AZIZ HASSAN

Agent(s): DAUNCEY MARK PETER; PORTER HEDGES LLP; TIMOTHY S; WESTBY TIMOTHY S ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW