

Search query (2): [SP]: cross-reference to related applications [0001] this application is a continuation of u.s. patent application ser. no. 13/220,280, filed on aug. 29, 2011, the entire content of which is hereby incorporated by reference in its entirety. background [0002] 1. field of the invention[0003] embodiments of the present invention generally relate to a system and method for the treatment of a liquid having a hydrogen, oxygen bond in its composition, particularly liquids comprising a colloid hydrocarbonic medium, mineral oils or any ferromagnetic fluid, by use of a pressure wave emission mechanism operating at reduced temperatures.[0004] 2. description of related art[0005] heavy crude oil or extra heavy crude oil is any type of crude oil which does not flow easily. it is referred to as "heavy" because its density or specific gravity is higher than that of light crude oil. heavy crude oil has been defined as any liquid petroleum with an american petroleum institute ("api") gravity less than 20 degrees. extra heavy oil is defined with api gravity below 10.0 degrees api (i.e. with density greater than 1000 kg/m3 or, equivalently, a specific gravity greater than 1).[0006] in contrast, light crude oil is liquid petroleum that has a low density and flows freely at room temperature. it has a low viscosity, low specific gravity and high api gravity due to the presence of a high proportion of light hydrocarbon fractions. it generally has a low wax content. light crude oil receives a higher price than heavy crude oil on commodity markets because it produces a higher percentage of gasoline and diesel fuel when converted into products by an oil refinery.[0007] sweet crude oil is a type of petroleum that contains less than about 0.5 percent sulfur, compared to a higher level of sulfur in sour crude oil. sweet crude oil contains small amounts of hydrogen sulfide and carbon dioxide. high quality, low sulfur crude oil is commonly used for processing into gasoline and is in high demand, particularly in the industrialized nations. "light sweet crude oil" is the most sought-after version of crude oil as it contains a disproportionately large amount of these fractions that are used to process gasoline (naphtha), kerosene, and high-quality diesel fuel.[0008] the amount or volume of light crude products directly present in crude oil worldwide is not sufficient to cover the worldwide consumption of various fuels. therefore, technologies referred to as "cracking" have been developed and are necessary to maximize the light product yield from crude oil. cracking is the process whereby complex organic molecules (heavy hydrocarbons) are broken down into shorter molecules (light hydrocarbons), predominantly by the breaking of carbon-carbon bonds by the use of precursors.[0009] conventional cracking processes used in refineries can be separated into two groups of cracking mechanism: thermal cracking and catalytic cracking. both kinds of processes were optimized over the years to yield short hydrocarbons of a relatively narrow chain length range, which are suitable to produce liquid fuels (e.g., gasoline, diesel, kerosene, etc.).[0010] shortfalls of conventional cracking processes include a relatively low yield of hydrocarbons having a short chain length, and a relatively high combination of temperature and pressure needed to realize the process at a commercially feasible rate.[0011] thus, there is a need for a cracking process that is able to produce relatively higher yields of hydrocarbons having a short chain length, and at a relatively lower combination of temperature and pressure in order to realize the process at a commercially feasible rate. summary [0012] embodiments of the present invention generally relate to a procedure for treatment of liquids, in particular a colloid hydrocarbonic medium mineral oils, in order to increase the content of light, low-boiling range fractions comprises a subjecting a processed liquid to pressure waves of a first frequency, and forwarding the liquid to a tank or to a pressure wave emission mechanism for further conventional oil processing.[0013] in accordance with certain embodiments, it has been discovered that with a suitable exposure of crude oils and/or other mineral oils to pressure waves with certain favorable frequencies, the liquids show an improved distillation profile, which shows increased increments of short chain, low boiling range fractions. as a result, the yield of high-quality light products derived from crude oils and mineral oils is increased during a refining process. generally, the resonance excitation within the liquid, occurring due to the oscillation energy with suitable choice of the oscillation frequency, is responsible for the strand breaks or cracking mentioned. the process further comprises injection of steam into the liquid, in order to increase the temperature of the liquid and/or the pressure upon the liquid, in order to increase the rate of reaction of a chemical process.[0014] in a further embodiment, the pressure wave emission mechanism is implemented in form of a rotor situated in a housing pervaded by the liquid subject to treatment.[0015] embodiments in accordance with the present invention provide a method to enhance the recovery of oil from an oil field, comprising: applying heat to a colloidal hydrocarbonic 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.[0016] the step of applying heat may comprise applying steam the pressure waves may be applied directly to hydrocarbon chains to be cracked the pressure waves may be applied indirectly to hydrocarbon chains to be cracked the step of applying pressure waves may be performed within the oil field, by use of an activator within the oil field the step of applying pressure waves may be performed within the oil field, by use of an activator outside of the oil field the step of applying pressure waves may be performed within the oil field and the step of applying pressure waves may be performed by use of a rotor situated in a housing pervaded by the colloidal hydrocarbonic medium. structure and operation of the activator are described below in greater detail.[0017] the step of applying pressure waves may comprise: applying pressure waves to a first plurality of hydrocarbon chains, in order to produce an activated colloidal hydrocarbonic medium and introducing the activated colloidal hydrocarbonic medium to a second plurality of hydrocarbon chains in order to produce a radical chain reaction.[0018] embodiments in accordance with the present invention provide a system to enhance the recovery of oil from an oil field, the system may comprise: a heat applicator configured to apply heat to a colloidal hydrocarbonic 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.[0019] the heat applicator may comprise a steam injector.[0020] the pressure wave generator may be: configured to apply pressure waves directly to hydrocarbon chains to be cracked or configured to apply pressure waves indirectly to hydrocarbon chains to be cracked.[0021] wherein the pressure wave generator may be configured to apply pressure waves to a first plurality of hydrocarbon chains in order to produce an activated colloidal hydrocarbonic medium, the system may further comprise: an interface from the pressure wave generator to a second plurality of hydrocarbon chains in order to produce a radical chain reaction by introducing the activated colloidal hydrocarbonic medium to the second plurality of hydrocarbon chains.[0022] the pressure wave generator: may comprise an activator within the oil field, the activator being configured to apply pressure waves within the oil field may comprise an activator outside of the oil field, the activator being configured to apply pressure waves outside of the oil field and may comprise a rotor situated in a housing pervaded by the colloidal hydrocarbonic medium. brief description of the drawings [0023] so the manner in which the above recited features of the present invention can be understood in detail, a more particular description of embodiments of the present invention, briefly summarized above, may be had by reference to embodiments, which are illustrated in the appended drawings. it is to be noted, however, the appended drawings illustrate only typical embodiments of embodiments encompassed within the scope of the present invention, and, therefore, are not to be considered limiting, for the present invention may admit to other equally effective embodiments, wherein:[0024] fig. 1 depicts chemical reaction energy in accordance with an embodiment of the invention[0025] fig. 2 illustrates two functions of particle energy distribution in accordance with an embodiment of the invention[0026] fig. 3 illustrates a method for enhancing the recovery of oil from an oil field in accordance with an embodiment of the invention[0027] fig. 4 illustrates another method for enhancing the recovery of oil from an oil field in accordance with an embodiment of the invention and[0028] fig. 5 depicts a liquid activator system in accordance with one embodiment of the present invention.[0029] the headings used herein are for organizational purposes only and are not meant to be used to limit the scope of the description or the claims. as used throughout this application,

Results: 9

Search history

Search PN=(WO2013/032698) (Results 1)

1:

Search [SP]: cross-reference to related applications [0001] this application is a continuation of u.s. patent application ser. no. 13/220,280, filed on aug. 29, 2011, the entire content of which is hereby incorporated by reference in its entirety. background [0002] 1. field of the invention[0003] embodiments of the present invention generally relate to a system and method for the treatment of a liquid having a hydrogen, oxygen bond in its composition, particularly liquids comprising a colloid hydrocarbonic medium, mineral oils or any ferromagnetic fluid, by use of a pressure wave emission mechanism operating at reduced temperatures.[0004] 2. description of related art[0005] heavy crude oil or extra heavy crude oil is any type of crude oil which does not flow easily. it is referred to as "heavy" because its density or specific gravity is higher than that of light crude oil. heavy crude oil has been defined as any liquid petroleum with an american petroleum institute ("api") gravity less than 20 degrees. extra heavy oil is defined with api gravity below 10.0 degrees api (i.e. with density greater than 1000 kg/m3 or, equivalently, a specific gravity greater than 1).[0006] in contrast, light crude oil is liquid petroleum that has a low density and flows freely at room temperature. it has a low viscosity, low specific gravity and high api gravity due to the presence of a high proportion of light hydrocarbon fractions. it generally has a low wax content. light crude oil receives a higher price than heavy crude oil on commodity markets because it produces a higher percentage of gasoline and diesel fuel when converted into products by an oil refinery.[0007] sweet crude oil is a type of petroleum that contains less than about 0.5 percent sulfur, compared to a higher level of sulfur in sour crude oil. sweet crude oil contains small amounts of hydrogen sulfide and carbon dioxide. high quality, low sulfur crude oil is commonly used for processing into gasoline and is in high demand, particularly in the industrialized nations. "light sweet crude oil" is the most sought-after version of crude oil as it contains a disproportionately large amount of these fractions that are used to process gasoline (naphtha), kerosene, and high-quality diesel fuel.[0008] the amount or volume of light crude products directly present in crude oil worldwide is not sufficient to cover the worldwide consumption of various fuels. therefore, technologies referred to as "cracking" have been developed and are necessary to maximize the light product yield from crude oil. cracking is the process whereby complex organic molecules (heavy hydrocarbons) are broken down into shorter molecules (light hydrocarbons), predominantly by the breaking of carbon-carbon bonds by the use of precursors. [0009] conventional cracking processes used in refineries can be separated into two groups of cracking mechanism: thermal cracking and catalytic cracking. both kinds of processes were optimized over the years to yield short hydrocarbons of a relatively narrow chain length range, which are suitable to produce liquid fuels (e.g., gasoline, diesel, kerosene, etc.).[0010] shortfalls of conventional cracking processes include a relatively low yield of hydrocarbons having a short chain length, and a relatively high combination of temperature and pressure needed to realize the process at a commercially feasible rate.[0011] thus, there is a need for a cracking process that is able to produce

relatively higher yields of hydrocarbons having a short chain length, and at a relatively lower combination of temperature and pressure in order to realize the process at a commercially feasible rate. summary [0012] embodiments of the present invention generally relate to a procedure for treatment of liquids, in particular a colloid hydrocarbonic medium mineral oils, in order to the increase the content of light, low-boiling range fractions comprises a subjecting a processed liquid to pressure waves of a first frequency, and forwarding the liquid to a tank or to a pressure wave emission mechanism for further conventional oil processing.[0013] in accordance with certain embodiments, it has been discovered that with a suitable exposure of crude oils and/or other mineral oils to pressure waves with certain favorable frequencies, the liquids show an improved distillation profile, which shows increased increments of short chain, low boiling range fractions. as a result, the yield of high-quality light products derived from crude oils and mineral oils is increased during a refining process. generally, the resonance excitation within the liquid, occurring due to the oscillation energy with suitable choice of the oscillation frequency, is responsible for the strand breaks or cracking mentioned. the process further comprises injection of steam into the liquid, in order to increase the temperature of the liquid and/or the pressure upon the liquid, in order to increase the rate of reaction of a chemical process.[0014] in a further embodiment, the pressure wave emission mechanism is implemented in form of a rotor situated in a housing pervaded by the liquid subject to treatment.[0015] embodiments in accordance with the present invention provide a method to enhance the recovery of oil from an oil field, comprising: applying heat to a colloidal hydrocarbonic medium that comprises hydrocarbon chains and applying pressure waves having a predetermined frequency and intensity 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present invention, briefly summarized above, may be had by reference to embodiments, which are illustrated in the appended drawings. it is to be noted, however, the appended drawings illustrate only typical embodiments of embodiments encompassed within the scope of the present invention, and, therefore, are not to be considered limiting, for the present invention may admit to other equally effective embodiments, wherein:[0024] fig. 1 depicts chemical reaction energy in accordance with an embodiment of the invention[0025] fig. 2 illustrates two functions of particle energy distribution in accordance with an embodiment of the invention[0026] fig. 3 illustrates a method for enhancing the recovery of oil from an oil field in accordance with an embodiment of the invention[0027] fig. 4 illustrates another method for enhancing the recovery of oil from an oil field in accordance with an embodiment of the invention and[0028] fig. 5 depicts a liquid activator system in accordance with one embodiment of the present invention.[0029] the headings used herein are for organizational purposes only and are not meant to be used to limit the scope of the description or the claims. as used throughout this application, (Results 9)

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

Abstract: Source: US4417621A 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:

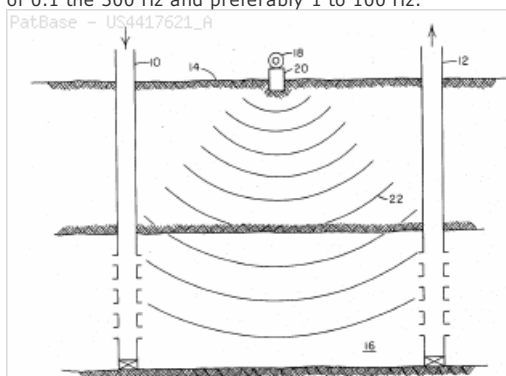
International (IPC 8-9): E21B43/00 E21B43/16 (Advanced/Invention);
E21B43/00 E21B43/16 (Core/Invention)

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

Title: INDIRECTLY HEATED THERMOCHEMICAL REACTOR APPARATUS AND PROCESSES

Abstract: Source: US5059404A Resonant tubes of a pulse combustor are immersed in a bed of solid particles in a reaction zone to provide indirect heat from the pulsating combustion gases to the solid particles of the bed. The bed is maintained in an agitated state by a gas or vapor flowing through the bed. Reactant materials are introduced into the agitated bed and undergo reaction at enhanced rates resulting from heat transfer coefficients at least about twice as high as those of steady flow combustors and an intense acoustic pressure level propagated from the pulsating combustor into the reaction zone. The apparatus is useful, for example, to steam reform heavy hydrocarbons and to gasify carbonaceous material, including biomass and black liquor to produce combustible gas at relatively low temperatures, with steam being utilized as the bed fluidizing medium. Black liquor gasification, utilizing sodium carbonate as bed solids, results in liquor energy and chemical content recovery without smelt production.

Classifications:

International (IPC 8-9): B01B1/00 B01J19/00 B01J8/18 B01J8/40 C01B3/38 C01B3/44 C02F11/00 C02F11/10 C10G35/00 C10J3/10 C10J3/54 C10J3/56 D21C11/12 F23C10/18 F23C15/00

F23G7/04 (Advanced/Invention);

B01B1/00 B01J19/00 B01J8/18 B01J8/24 C01B3/00 C10J3/02 C10J3/46 (Core/Invention)

International (IPC 1-7): A62D3/00 B01J19/00 B01J19/08 B01J7/00 B01J8/18 B01J8/40 C01B3/02 C01B3/26 C01B3/44 C10G35/00 C10G9/00 C10J3/00 C10J3/10 C10J3/56 D21C11/12 D21C11/12 F23C11/02 F23C11/04 F23G7/04 F27B15/14

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US: 110/245 162/29 162/30.1 162/30.11 162/31 162/47 252/373 422/139 422/140 422/142 422/146 422/190 422/224 423/201 423/206.1 423/206R 423/209 423/648.1 423/652 423/659 423/DIG.16 423/DIG.3 431/1 48/1 48/111 48/197.00R 48/197R 48/202 48/209 48/214.00A 48/214A 48/62.00R 48/62R 48/73 48/77 48/94 588/214 588/241 588/242 588/317 588/405 588/406 588/407 588/408 588/409 588/410

Family:

Publication number	Publication date	Application number	Application date
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NO178100 C	19960124	NO19900000693	19900213
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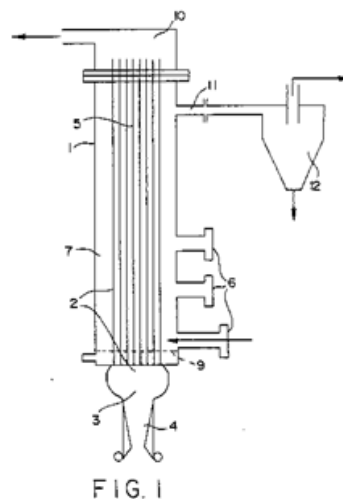
PatBase - US5059404_A

U.S. Patent

Oct. 22, 1991

Sheet 1 of 6

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Priority:

CA19890608345 19890815	EP19900301554 19900214	IN1989DE00702 19890807
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US19910724156 19910701	US19950439456 19950511	US19930055674 19930429
US19910723936 19910701		

Probable Assignee: MFG AND TECHNOLOGY CONVERSION IN

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

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

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

Agent(s): GOWLING LAFLEUR HENDERSON LLP

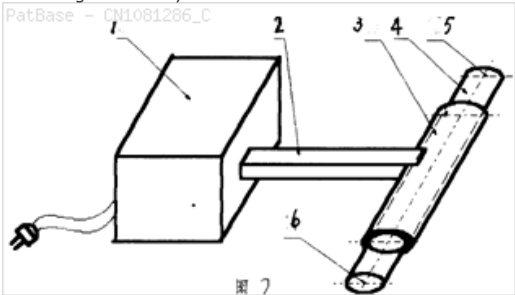
Designated states: AT BE CH DE DK ES FR GB GR IT LI NL SE

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

Abstract: Source: CN1252486A 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
Inventor(s):	QIZHU DING ; YAN DING

Title: SYSTEM AND METHOD FOR ENHANCED OIL RECOVERY USING AN IN-SITU SEISMIC ENERGY GENERATOR

Abstract: Source: US2009200019A 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.

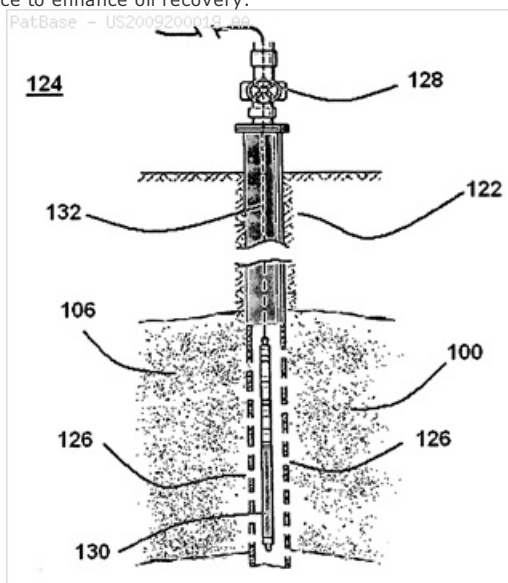
Classifications:

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): COURTRIGHT DENNIS R ; DELACROIX ROBERT F

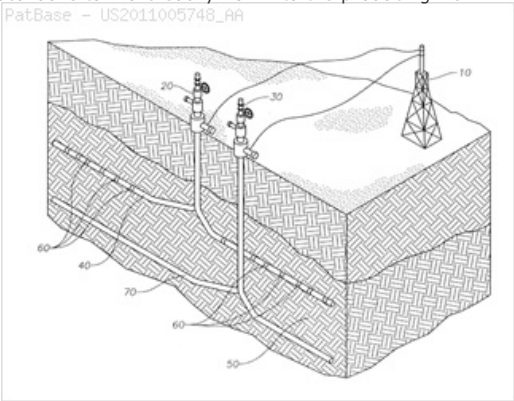
Agent(s): BASCH AND NICKERSON LLP; DUANE C

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

Abstract: Source: US2011005748A 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
European: E21B43/24B E21B43/30B H05B6/80F T05B214/03
US: 166/248 166/272.1 166/272.100P 166/302



Family:

Publication number	Publication date	Application number	Application date
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

Agent(s): BRACEWELL AND GIULIANI LLP; RHEBERGEN CONSTANCE GALL

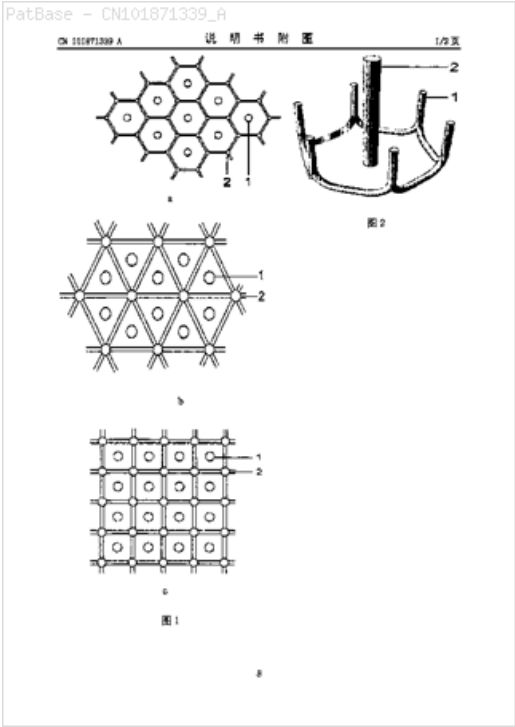
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Title: METHOD FOR UNDERGROUND IN-SITU EXTRACTION OF HYDROCARBON COMPOUND IN OIL SHALE

Abstract: Source: CN101871339A 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

Probable Assignee: UNIV JILIN

Assignee(s): (std): JILIN UNIV ; UNIV JILIN

Assignee(s): JILIN UNIVERSITY

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

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

Abstract: Source: US2012160494A 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

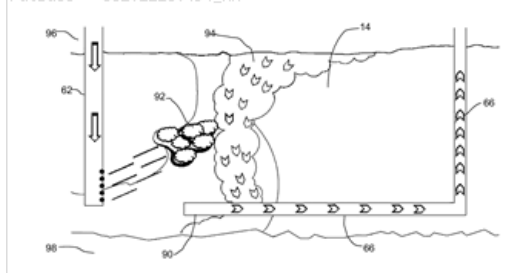
E21B43/24 E21B43/25 (Advanced/Invention)

CPC: E21B43/24 E21B43/16

European: E21B43/16 E21B43/24

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

PatBase - US2012160494_AH



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

Priority:

US20090240023P 20090904

US20100394122 20100907

WO2010CA01354 20100907

Probable Assignee: NIKIPELO HAROLD J

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

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

Abstract: Source: US2011114470A 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.

Classifications:

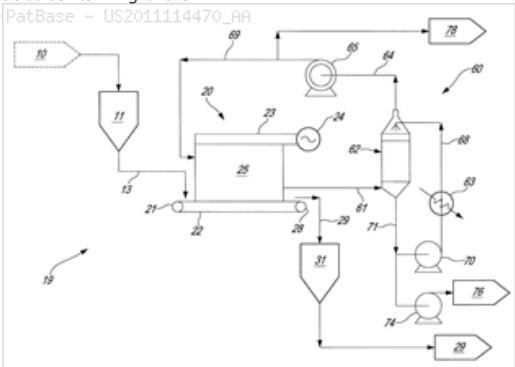
International (IPC 8-9): B01J19/08 B03B9/02 C07C4/02

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
US2011114470 AA	20110519	US20090621923	20091119
US8771503 BB	20140708	US20090621923	20091119

Priority:

CA20102721744 20101117 US20090621923 20091119

Probable Assignee: MICRO SYSTEMS INC C

Assignee(s): (std): CHA CHANG YUL ; MICRO SYSTEMS INC C ; VERGNANI PAUL GIL

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

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

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

Title: SYSTEM AND METHOD FOR COLD CRACKING WITH STEAM

Abstract: Source: US2013048538A 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 within 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

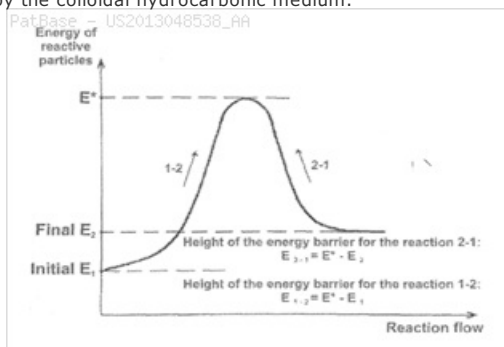
C10G33/02 C10G9/00 C10G99/00 E21B1/00 E21B36/00

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
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
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 US20140587285 20141231 WO2012US50850 20120815

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

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

Agent(s): WRAYS; GOWLING LAFLEUR HENDERSON LLP; JAIME EDUARDO DELGADO VILLEGAS; SAMPSON EIMEAR; 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