

Search history

Search PN=(WO2016028886) (Results 1)

1:

Search [SP]: system and method for using pressure pulses for fracture stimulation performance enhancement and evaluation a system and method of applying periodic energy pulses to a portion of a wellbore, fracture(s), and/or near wellbore to interrogate and/or stimulate at least a portion of the wellbore, fracture(s), and/or near wellbore. the system includes a downhole device that is configured to deliver periodic energy pulses to a portion of the wellbore. the downhole device may deliver various energy pulses such as pressure waves, seismic waves, and/or acoustic waves. sensors may determine properties of a portion of the wellbore and/or fracture based on energy pulses detected within the wellbore. the sensors may be connected to the downhole tool, may be positioned within the wellbore, and/or may be positioned at the surface. the magnitude and/or frequency of the periodic energy pulses may be varied to change the stimulation and/or interrogation of the wellbore. (Results 0)

Search [SP]: 1. a wellbore system comprising: a work string and a downhole device connected to a portion of the work string, the downhole device configured to deliver periodic energy pulses to a portion of a wellbore. 2. the system of claim 1, further comprising at least one sensor configured to measure energy pulses in the portion of the wellbore, wherein the at least one sensor is configured to determine at least one property of the wellbore based on the energy pulses detected by the at least one sensor. 3. the system of claim 2, wherein the at least one sensor is connected to the downhole device. 4. the system of claim 2, wherein the periodic energy pulses comprise seismic waves and the at least one sensor comprises a geophone. 5. the system of claim 2, wherein the periodic energy pulses comprises pressure waves and the at least one sensor comprises a pressure sensor. 6. the system of claim 1, wherein the portion of the wellbore further comprises at least one fracture in a formation. 7. the system of claim 6, further comprising a first packing element, wherein the first packing element is positioned below the at least one fracture and the downhole device is positioned adjacent the at least one fracture. 8. the system of claim 7, further comprising a second packing element, wherein the second packing element is positioned above the downhole device. 9. the system of claim 6, wherein the work string comprises coiled tubing. 10. the system of claim 9, wherein the downhole device comprises a vibratory tool and the periodic energy pulses further comprise oscillating pressure waves. 11. the system of claim 10, wherein the vibratory tool is a fluid hammer tool that creates the oscillating pressure waves based on the coand(hacek over a)} effect. 12. the system of claim 11, wherein the frequency of the oscillating pressure waves may be varied during operation of the fluid hammer tool. 13. the system of claim 6, wherein the downhole device is an acoustic device and the periodic energy pulses further comprise acoustic waves. 14. the system of claim 6, further comprising proppant positioned within the at least one fracture, wherein the proppant is configured to release energy when actuated by the periodic energy pulses. 15. the system of claim 14, wherein the proppant further comprises explosive proppant or flagration proppant. 16. the system of claim 6, further comprising at least one sensor configured to measure energy pulses in the portion of the wellbore from the periodic energy pulses. 17. the system of claim 16, wherein the at least one sensor is connected to the downhole device. 18. the system of claim 16, wherein the at least one sensor is configured to determine at least one property of the at least one fracture based energy pulses detected by the at least one sensor. 19. the system of claim 18, wherein the at least one property is a width of the at least one fracture, a length of the at least one fracture, a shape of the at least one fracture, or a propped length of the at least one fracture. 20. a method of supplying energy pulses to a portion of a wellbore comprising: positioning a downhole device adjacent a portion of a wellbore and delivering periodic energy pulses from the downhole device to the portion of the wellbore. 21. the method of claim 20, further comprising determining one or more properties of the wellbore based on energy pulses reflected from the wellbore. 22. the method of claim 20, wherein the portion of the wellbore includes at least one fracture. 23. the method of claim 22, further comprising determining one or more properties of the at least one fracture. 24. the method of claim 23, wherein the one or more properties of the at least one fracture includes a length of the at least one fracture, a width of the at least one fracture, a propped length of the at least one fracture, or a shape of the at least one fracture. 25. the method of claim 20, further comprising modifying a frequency of the periodic energy pulses. 26. the method of claim 25, further comprising modifying a magnitude of the periodic energy pulses. 27. the method of claim 26, further comprising reevaluating the one or more properties of the wellbore based on modified reflected energy pulses. 28. the method of claim 26, wherein modifying a flow rate of fluid flowing through the downhole device modifies the frequency and magnitude of the periodic energy pulses. 29. the method of claim 26, wherein modifying a signal to the downhole device modified the frequency and magnitude of the periodic energy pulses. 30. the method of claim 22, further comprising changing a property of the fracture with the periodic energy pulses. 31. the method of claim 30, wherein the periodic energy pulses enlarges a width or a length of the fracture. 32. the method of claim 30, wherein the periodic energy pulses inhibit growth of the fracture. 33. the method of claim 30, wherein the periodic energy pulses increase the conductivity of the fracture. 34. the method of claim 22, further comprising cleaning up the at least one fracture with the periodic energy pulses. 35. the method of claim 34, wherein cleaning up the at least one fracture further comprises enhancing transport of proppant into the at least one fracture or breaking down a layer of a formation adjacent to the at least one fracture having a low-permeability. 36. a wellbore system comprising: a work string at least one downhole device connected to a portion of the work string, the downhole device configured to deliver periodic energy pulses to a portion of a wellbore and at least one sensor configured to determine at least one property of the wellbore based on detected energy pulses wherein the at least one downhole device is configured to selectively modify a magnitude and a frequency of the periodic energy pulses. 37. the system of claim 36, wherein the periodic energy pulses comprise pressure waves, acoustic waves, or seismic waves. (Results 10)

Search (system* or device* or apparatus*) and (fracturing or fracking or hydrofracturing or hydrofracking) (Results 46450)

4:

Search 4 and seismic* and periodic and (rope or string) and (puls* or wav*) and pressur* and sensor (Results 186)

5:

Search 5 and hammer* (Results 20)

6:

Search 6 or 3 (Results 28)

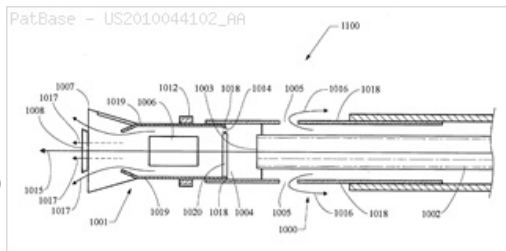
7:

Title: METHODS AND **APPARATUS** FOR REMOVAL AND CONTROL OF MATERIAL IN LASER DRILLING OF A BOREHOLE

Abstract: There is provided a **system**, **apparatus** and methods for removal of material for the path of a laser beam during laser drilling of a borehole and for removal of displaced borehole material from the borehole during laser drilling. In particular, there are provided paths, dynamics and parameters of fluid flows, and **apparatus** for obtaining such, for use in conjunction with a laser bottom hole assembly.

Classifications:

International (IPC 8-9): A61K48/00 B01J19/12 B08B7/00 B08B9/02 B08B9/023 B08B9/027 B08B9/055 B23K26/00 B23K26/04 B23K26/046 B23K26/06 B23K26/064 B23K26/073 B23K26/08 B23K26/10 B23K26/12 B23K26/122 B23K26/14 B23K26/16 B23K26/24 B23K26/352 B23K26/36 B23K26/38 B23K26/382 B23K26/40 B23K26/402 B23K26/70 B23P11/00 B63B17/00 B63B35/28 B63C11/40 B63C11/44 B63C11/48 B63G8/00 B63G8/08 B65H55/00 B65H59/00 E01C23/08 E01C23/12 E02B17/00 E02D17/00 E21B10/00 E21B10/50 E21B10/54 E21B10/60 E21B17/00 E21B17/20 E21B19/00 E21B19/22 E21B21/00 E21B21/08 E21B21/10 E21B21/14 E21B21/16 E21B23/00 E21B23/14 E21B29/00 E21B29/02 E21B29/06 E21B29/08 E21B29/12 E21B33/00 E21B33/06 E21B33/064 E21B33/12 E21B33/13 E21B34/04 E21B37/00 E21B4/02 E21B4/04 E21B41/00 E21B41/04 E21B43/00 E21B43/11 E21B43/114 E21B43/116 E21B43/119 E21B43/24 E21B43/26 E21B43/267 E21B44/00 E21B47/00 E21B47/113 E21B47/12 E21B49/00 E21B7/00 E21B7/12 E21B7/14 E21B7/15 E21B7/16 E21C35/00 E21C37/16 E21C37/18 E21C41/00 E21D9/10 E21D9/10 F21V15/01 F21V15/06 F21V29/00 F21V8/00 G01J1/04 G01M11/00 G01M5/00 G02B6/08 G02B27/14 G02B27/20 G02B6/02 G02B6/26 G02B6/28 G02B6/32 G02B6/36 G02B6/42 G02B6/44 H01J27/24 H01J40/14 H01L21/00 H01L31/00 H01L31/02 H01L31/0224 H01L31/0304 H01L31/05 H01L31/054 H01L31/055 H01S3/00 H01S3/04 H01S3/042 H01S3/067 H01S3/08 H01S3/094 H01S3/0941 H01S3/109 H01S3/16 H01S3/23 H01S3/30 H01S5/00 H01S5/022 H01S5/024 H01S5/042 H01S5/40 H02G1/08 H04B10/079 H04B10/80 H05K7/20 (Advanced/Invention); B08B7/00 B23K103/00 B63B19/00 B63B21/00 B63B35/00 E02B17/00 E21B15/00 E21B23/00 E21B43/00 E21B43/116 E21B43/16 E21B49/00 E21B7/04 E21B7/15 G02B6/32 G02B6/36 G02B6/38 G02B6/42 G02B6/50 H01S3/094 (Advanced/Non-invention); B65H55/00 E21B17/00 E21B7/00 E21B7/14 G02B6/44 (Core/Invention)
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Family:

Publication number	Publication date	Application number	Application date
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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 DJ 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 IR IS IT JO JP KE KG KH KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW

SA 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: **SYSTEMS** AND METHODS FOR OPERATING A PLURALITY OF WELLS THROUGH A SINGLE BORE

Abstract: **Systems** and methods usable to operate on a plurality of wells through a single main bore are disclosed herein. One or more chamber junctions are provided in fluid communication with one or more conduits within the single main bore. Each chamber junction includes a first orifice communicating with the surface through the main bore, and one or more additional orifices in fluid communication with individual wells of the plurality of wells. Through the chamber junctions, each of the wells can be individually or simultaneously accessed. A bore selection tool having an upper opening and at least one lower opening can be inserted into the chamber junction such that the one or more lower openings align with orifices in the chamber junction, enabling selected individual or multiple wells to be accessed through the bore selection tool while other wells are isolated from the chamber junction.

Classifications:

International (IPC 8-9): B02C13/24 B65G5/00 E21B17/00

E21B17/01 E21B17/10 E21B17/18 E21B19/00 E21B21/00 E21B21/12
E21B23/12 E21B23/14 E21B29/00 E21B29/06 E21B29/10 E21B33/00
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E21B7/06 E21B7/18 E21B7/20 E21C41/16 E21C41/20 E21C45/00
E21F17/16 F16L1/00 (Advanced/Invention);
E21B43/00 (Core/Invention)

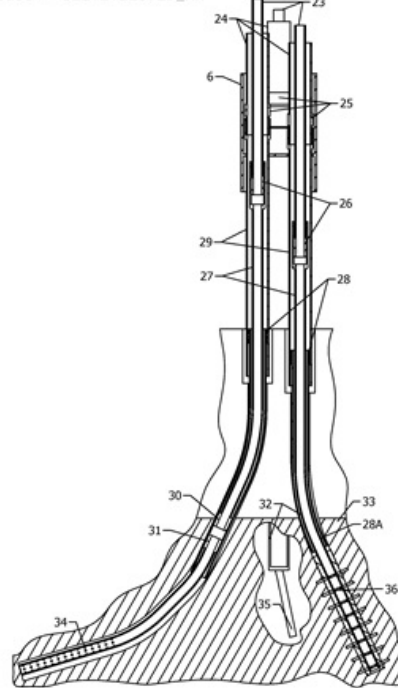
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WO11119198 A1	20110929	WO2011US00377	20110301
WO13176705 A1	20131128	WO2013US00057	20130301

Priority:

GB20080021352	20081121	GB20080023194	20081219	GB20090002198	20090211
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GB20090021954	20091216	CA20092752322	20091218	CA20092752690	20091218
EP20090837723	20091218	CN200980156880	20091218	EP20110188274	20091218
US20090653784	20091218	WO2009US06641	20091218	GB20100004961	20100325
GB20100010480	20100622	US20100803283	20100622	WO2010GB51036	20100622
GB20100011290	20100705	WO2010GB51108	20100705	US20100803775	20100706
US20100928674	20101216	GB20100021787	20101223	EP20110759817	20110301
EP20110759818	20110301	US20110000372	20110301	WO2011US00372	20110301
WO2011US00377	20110301	US20110261448	20110301	US20110261445	20110301
GB20110004280	20110315	GB20110004278	20110315	RU20110129767	20110718
CA20112752322	20111004	GB20120003649	20120301	WO2013US00057	20130301
US20130382215	20130301	US20130815699	20130314	US20140270100	20140505

Probable Assignee: BRUCE TUNGET

Assignee(s): (std): BRUCE TUNGET ; TANDZHET BRJUS EH ; TANDZHET BRJUS EHRNOL D ; TUNGET BRUCE A ; TUNGET BRUCE ARNOLD ; TUNGET BRUCE ; ARNOLD TUNGET BRUCE ; BRUCE A TUNGET ; TANDZHET BRYUS E

Assignee(s): BRUCE ARNOLD TUNGET

Inventor(s): (std): TANDZHET BRJUS EH ; TANDZHET BRJUS EHRNOL D ; TANDZHET BRYUS E ; TUNGET BRUCE ARNOLD ; TUNGET BRUCE A ; TUNGET BRUCE ; ARNOLD TUNGET BRUCE ; BRUCE A TUNGET

Inventor(s): BRUCE ARNOLD TUNGET ; TUNGET BRUCE A WESTHILL

Agent(s): PIZZEYS PATENT AND TRADE MARK ATTORNEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; NORTON ROSE OR SENCRL SRL LLP; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; NORTON ROSE CANADA SENCRL SRL LLP; R WILLIAM WRAY AND ASSOCIATES; CANZLER AND BERGMEIER PATENTANWALTE; WIGHTMAN DAVID ALEXANDER; JOHNSON YVONNE CATHERINE; Wightman David Alexander; BARKER BRETTELL LLP; THE MATTHEWS FIRM; MATTHEWS FIRM; MATTIS JACOB S; MATTIS JACOB; MCCUTCHEON TERRY L

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 PA 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

Abstract: **Systems**, methods, and computer programs for monitoring a drilling operation in a subterranean formation include receiving, from a first **sensor** array, one or more **seismic** signals caused, at least in part, by the drilling operation in the subterranean formation; receiving, from the first **sensor** array, one or more electromagnetic signals generated by an electro **seismic** or seismoelectric conversion of the one or more **seismic** signals caused, at least in part, by the drilling operation in the subterranean formation; and determining a property of one or more of the drillstring and the subterranean formation based, at least in part, on the **seismic** signals and the corresponding electromagnetic signals received from the first **sensor** array. The first **sensor** array is arranged to monitor the drilling operation.

International (IPC 8-9): E21B44/00 E21B47/00 E21B49/00 G01V1/00
G01V1/18 G01V1/20 G01V1/28 G01V1/30 G01V1/40 G01V1/50
G01V11/00 (Advanced/Invention);
G01V1/40 (Advanced/Non-invention);
E21B44/00 E21B47/00 (Core/Invention)

CPC: G01V1/28 G01V1/181 G01V1/40 G01V2210/32 G01V2210/62
G01V2210/6224 G01V2210/6244 G01V2210/6246 E21B49/00
G01V2210/624 G01V1/306 G01V11/007 G01V1/20

[illegible]

Publication number	Publication date	Application number	Application date
AU2014334535 AA	20150423	AU20140334535	20141014
AU2014334535 BB	20180607	AU20140334535	20141014
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EP3058170 A4	20170927	EP20140854047	20141014
EP3058171 A1	20160824	EP20140854508	20141014
EP3058171 A4	20170927	EP20140854508	20141014
MX2016004767 A1	20161216	MX20160004767	20141014
MX2016004769 A1	20161216	MX20160004769	20141014
MX2016004796 A1	20161216	MX20160004796	20141014
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US2015103625 AA	20150416	US20140512931	20141013
US2015103626 AA	20150416	US20140513002	20141013
US2016131798 AA	20160512	US20160997229	20160115
US2016131799 AA	20160512	US20160997237	20160115
US2017261643 AA	20170914	US20170463747	20170320
US9239396 BB	20160119	US20140512900	20141013
US9239397 BB	20160119	US20140513002	20141013
US9599750 BB	20170321	US20140512931	20141013
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WO15057640 A1	20150423	WO2014US60388	20141014
WO15057642 A1	20150423	WO2014US60390	20141014

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US20160997229	20160115	US20160997237	20160115	US20170463747	20170320
AU20180204844	20180703				

Assignee(s): (std): BENSON TODD W ; ENGLAND ROBERT ; ES XPLORE L L C ; THOMPSON ARTHUR ; GRIFFIN MARK ; KATZ ALAN ; HUNT ENERGY ENTPR L L C ; HUNT ENERGY ENTPR LLC

Inventor(s): (std): ALAN KATZ ; ARTHUR THOMPSON ; BENSON TODD W ; ENGLAND ROBERT ; GRIFFIN MARK ; KATZ ALAN ; MARK GRIFFIN ; ROBERT ENGLAND ; THOMPSON ARTHUR ; TODD W BENSON

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 GU GN GQ GR GT HW HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LV LY MA MC MD ME MG MK ML MN

MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA 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: **PRESSURE SENSOR** ARRANGEMENT USING AN OPTICAL FIBER AND METHODOLOGIES FOR PERFORMING AN ANALYSIS OF A SUBTERRANEAN FORMATION

Abstract: A **sensor** arrangement using an optical fiber and methodologies for performing an analysis of a subterranean formation, such as a subterranean formation containing a hydrocarbon based fluid. The **sensor** arrangement may be used to measure one or more physical parameters, such as temperature and/or **pressure**, at a multiplicity of locations in the subterranean reservoir. The **sensor** arrangement may comprise a **sensor** array comprising an elongated outer casing for insertion in the subterranean formation and into a fluid in the subterranean formation. The **sensor** array may comprise an optical fiber defining an optical path that links one or more temperature **sensors** and one or more **pressure sensors** and transports measurement data generated by the temperature and **pressure sensors**. A data processing **system** may be connected to the **sensor** array to receive measurements from the **sensor** array and to compute one or more values of a property of an extraction installation operating on the subterranean formation.

Classifications:

International (IPC 8-9): E21B43/24 E21B47/01 E21B47/06

E21B47/12 G01L1/24 G01L13/00 G01V9/00 G02B6/44

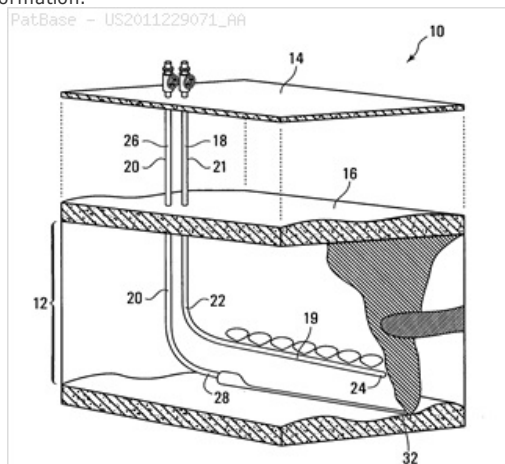
G02B6/50 (Advanced/Invention)

CPC: G01L1/243 E21B43/2406 G02B6/504 G01L1/242 E21B47/06

E21B47/123 G01L1/247 E21B43/2408

European: E21B33/038 E21B43/24S E21B47/06 E21B47/12M2

US: 1/1 385/13 385/13P 73/705



Family:

Publication number	Publication date	Application number	Application date
CA2744734 AA	20101028	CA20102744734	20100422
CA2744734 C	20131001	CA20102744734	20100422
CA2790841 AA	20101028	CA20102790841	20100422
CA2790841 C	20140527	CA20102790841	20100422
CA2791241 AA	20121211	CA20102791241	20100422
CA2791241 C	20180619	CA20102791241	20100422
US2011229071 AA	20110922	US20100129481	20100422
US2016245071 AA	20160825	US20160147704	20160505
US2018087371 AA	20180329	US20170675505	20170811
US9347312 BB	20160524	US20100129481	20100422
WO10123566 A1	20101028	WO2010US01200	20100422

Priority:

US20090202945P	20090422	CA20102744734	20100422	CA20102790841	20100422
CA20102791241	20100422	WO2010US01200	20100422	US20100129481	20100422
US20110129481	20110516	CA20122744734	20121010	CA20122744734	20121016
US20160147704	20160505	US20170675505	20170811		

Probable Assignee: WEATHERFORD CANADA LTD

Assignee(s): (std): BALDWIN CHRISTOPHER S ; KIDDY JASON S ; LEFEBVRE PAUL ; LXDATA INC ; VINCELETTE ANDRE R ; NIEMCZUK JOHN B ; WEATHERFORD CANADA PARTNERSHIP

Assignee(s): WEATHERFORD ENGINEERED CHEMISTRY CANADA LTD ; WEATHERFORD CANADA LTD

Inventor(s): (std): BALDWIN CHRISTOPHER S ; KIDDY JASON S ; LEFEBVRE PAUL ; NIEMCZUK JOHN B ; VINCELETTE ANDRE R

Agent(s): SMART AND BIGGAR; DOWELL AND DOWELL P C

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

Title: DISTILLATION REACTOR MODULE

Abstract: The distillation reactor consists of a reactor **apparatus** with corresponding method of upstream distilling and purification of carbon based liquid or liquidized streams for use as fuels, lubricating oils and or gaseous energy and electricity production. The distillation reactor consolidates the atmospheric and vacuum distillation processes along with desalting, defueling, deasphalting, fractionation, thin/wiped film evaporation and Hydro finishing into an advanced high velocity, high volume single reactor **system**. Carbon based feed streams include either a single stream or preferably, a combined stream of liquefied coal slurries, crude oils, spent oils, Pyrolytic oils and or peat or other plant carbon derived liquids, vapors, mists or gases. The method further consists of controlling the mix ratio, flow velocity, sequential fractionation and filtration technology and processing atmospheres of the carbon feeds with the reactor **apparatus**. The combined **apparatus** and method allows for a refinery to consistently produce a finished barrel of oil well below traditional costs and at a higher efficiency than current art and prior art.

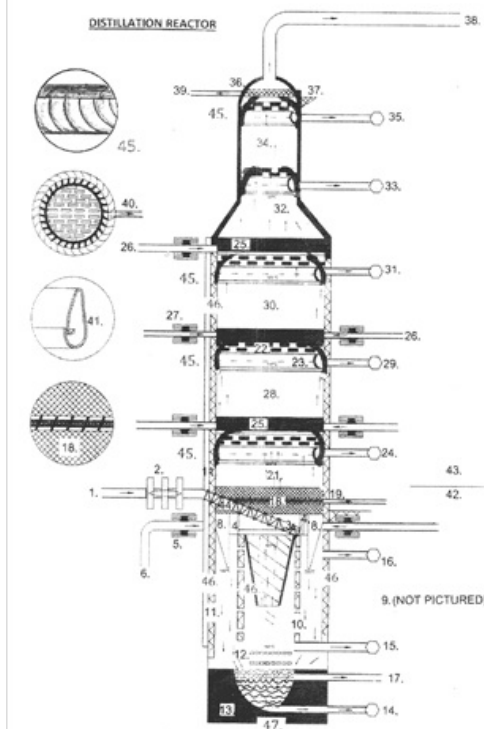
Classifications:

International (IPC 8-9): B01D3/00 B01D3/06 B01D3/10 B01D3/26 B01D3/32 B01D39/20 B01D53/48 B01D53/62 B01D59/04 B01J B01J19/24 B01J19/26 B01J2/00 B01J6/00 B01J8/24 B02C23/00 B03C1/00 B22F3/10 B22F9/00 B29B17/00 C01B17/027 C01B17/74 C02F1/00 C10B49/12 C10G1/00 C10G11/18 C10G33/00 C10G45/00 C10G57/00 C10G7/00 C10G7/06 C10G9/04 C10J3/72 C10L9/10 C22B13/00 C22B15/00 C22B21/00 C22B7/00 C22B9/00 F03G7/00 F27B17/00 G21C1/02 G21D5/00 H01M10/54 H01M8/00 H02K55/02 H02K7/09 (Advanced/Invention)

CPC: Y02E30/40 G21D1/00 B01J19/0093 B01J2219/00864 B01J2219/00867 B01J2219/00871 C01G21/02 C01B3/32 C01B13/02 C01B17/02 C01B2203/0205 C01B2203/0283 C01B2203/043 C01B2203/0445 C01B2203/0475 C10G1/02 C10G1/10 C10G31/08 C10G75/04 Y02P20/129 B09B5/00 Y02P30/446 Y02E30/30 B01D3/10 B01D3/006 B01D3/06 B01D39/2027 F03G7/00 B01D3/009 C10G7/06 G21C1/00 G21D5/00 C10G7/00 C10G57/00 C10G7/003 C10L9/10 C10J3/72 C10G1/00 C01B17/027 C01B17/74 B01J6/008 B01J2/00 B01J19/24 B01D53/48 B01D53/62 C22B9/00 F27B17/00 C02F1/00 C22B7/00 B29B17/00 B22F3/10 B22F9/00 C22B21/00 C22B15/00 C22B13/00 H01M8/00 H01M10/54 H02K55/02 H02K7/09 B02C23/00 B03C1/00 C10L2290/544 C10J2300/093 C10J2300/0946 B22F2009/001 C01B17/48 C10G11/18 C10G33/00 C10G45/00 Y02E20/16 Y02E20/18 Y02W10/33 Y02W10/37 Y02W30/84 C01B32/05 C01B32/20 C01B32/50 Y02P10/143

US: 196/46 202/232 209/213 210/251 241/301 241/65 266/160 310/90.5 422/129 422/170 422/187 422/198 422/255 423/522 423/567.1 429/49 505/163 505/166 60/698

PatBase - US2016030856_AA

**Family:**

Publication number	Publication date	Application number	Application date
CA2907677 AA	20150921	CA20142907677	20140318
EP2969180 A2	20160120	EP20140762668	20140318
EP2969180 A4	20161005	EP20140762668	20140318
IL242590 A0	20160131	IL20140242590	20140318
JP2016512165 T2	20160425	JP20160502609T	20140318
US2016030856 AA	20160204	US20140776734	20140318
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US2016045841 AA	20160218	US20140776732	20140515
WO14146129 A2	20140918	WO2014US31118	20140318
WO14146129 A3	20150129	WO2014US31118	20140318
WO14153570 A2	20140925	WO2014US38290	20140515
WO14153570 A3	20150219	WO2014US38290	20140515
WO14153570 A9	20150806	WO2014US38290	20140515
WO14200605 A2	20141218	WO2014US31116	20140318
WO14200605 A3	20150326	WO2014US31116	20140318
WO14200605 A4	20150430	WO2014US31116	20140318
WO14200605 A9	20150205	WO2014US31116	20140318

Priority:

US20130800209P 20130315	US20130801170P 20130315	US20130801491P 20130315
US20140776734 20140318	US20140776736 20140318	WO2014US31118 20140318
WO2014US31116 20140318	US20140776732 20140515	WO2014US38290 20140515

Probable Assignee: TRANSTAR GROUP LLC**Assignee(s):** (std): BRADLEY RANDALL ; KALPAN ALLEN ; KAPLAN ALLEN ; TRANSTAR GROUP LTD**Assignee(s):** TRANSTAR GROUP LLC**Inventor(s):** (std): BRADLEY RANDALL ; KALPAN ALLEN ; KAPLAN ALLEN**Agent(s):** ADE AND CO INC; NELLIGAN OBRIEN PAYNE LLP; PERRONACE ANDREA; HERSHKOVITZ ABRAHAM ET AL; HERSHKOTIZ ABRAHAM ET AL

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 IR 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: FLOW HYDRAULIC AMPLIFICATION FOR A PULSING, FRACTURING, AND DRILLING (PFD) DEVICE

Abstract: Disclosed is a device and method and/or system for generating pulses to improve drilling rates, the ability to drill straighter and farther or fracturing or injection efficiencies in a geological formation that may contain desirable hydrocarbons. This system may also be used in other types of drilling or fracturing operations, whether to unclog arteries or to open formations for underground storage in conjunction with pulsing/fracturing. Alternately, this system could be used to create large pulses downhole for seismic purposes in that they are of such magnitude that they could be readily received in nearby wells or several of uphole locations. The system and method comprises several pulse generating devices longitudinally and axially positioned within an annular drill collar flow channel or PIM such that the PFD medium flows through the annular drill collar flow channel and the PFD medium is guided into one or more sets of selectively reversible flow, upper and lower flow connecting channels, wherein the connecting channels are connected to an inner flow channel and the annular drill collar flow channel, and wherein the annular drill collar flow channel is acted upon by one or more flow throttling devices. In one of the devices listed, the device utilizes one or more turbines residing near and within proximity of a flow diverter that diverts drilling mud into and away from turbine blades such that the force of the PFD medium causes the turbine blades and the turbine to rotationally spin around a coil assembly for power.

Classifications:

International (IPC 8-9): E21B1/28 E21B28/00 E21B4/14 E21B41/00 E21B43/26 E21B44/00 E21B44/02 E21B44/06

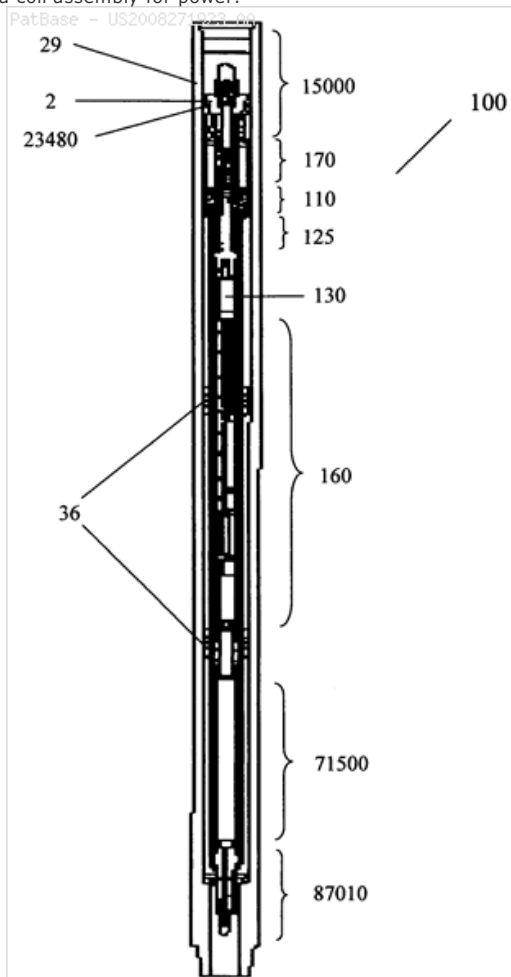
E21B7/24 (Advanced/Invention);

E21B1/00 E21B4/00 E21B44/00 E21B7/00 (Core/Invention)

CPC: E21B1/00 E21B21/10 E21B34/10 E21B4/02 E21B7/18 E21B41/0085

European: E21B1/00 E21B4/02 E21B41/00R E21B7/18

US: 166/177.5 166/249 175/25 175/25P 175/317 175/324



Family:

Publication number	Publication date	Application number	Application date
CA2686737 AA	20081113	CA20082686737	20080226
CA2686737 C	20151006	CA20082686737	20080226
CA2710281 AA	20090702	CA20082710281	20081217
CA2710281 C	20170530	CA20082710281	20081217
EP2148975 A1	20100203	EP20080726053	20080226
EP2148975 A4	20150506	EP20080726053	20080226
EP2235323 A2	20101006	EP20080864254	20081217
EP2235323 A4	20150506	EP20080864254	20081217
EP2235323 B1	20180307	EP20080864254	20081217
MX2009011937 A1	20091204	MX20090011937	20080226
MX2010006797 A1	20130429	MX20100006797	20081217
MX351601 B	20171020	MX20100006797	20081217
RU2009144780 A	20110610	RU20090144780	20080226
RU2010130254 A	20120127	RU20100130254	20081217
US2008271923 AA	20081106	US20070004121	20071220
US2009107723 AA	20090430	US20080316864	20081217
US7836948 BB	20101123	US20070004121	20071220
US7958952 BB	20110614	US20080316864	20081217
WO08136883 A1	20081113	WO2008US02469	20080226
WO09082453 A2	20090702	WO2008US13804	20081217
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Priority:

US20070927400P 20070503 US20070004121 20071220 WO2008US02469 20080226
US20080316864 20081217 WO2008US13804 20081217

Probable Assignee: TELEDRIILL INC

Assignee(s): (std): KUSKO DAVID JOHN ; LERNER DANIEL MAURICE ; TELEDRIILL INC ; VECSERI GABOR

Assignee(s): KUSKO JAMES ; DAVID JOHN KUSKO

Inventor(s): (std): KUSKO DAVID JOHN ; LERNER DANIEL MAURICE ; VECSERI GABOR

Inventor(s): DANIEL MAURICE LERNER ; DAVID JOHN KUSKO ; GABOR VECSERI

Agent(s): BORDEN LADNER GERVAIS LLP; RUETTIGERS JOACHIM; KEHOE LAURA ELLEN; HELLMICH WOLFGANG;
GUERRY LEONARD GRUNE; GUERRY L; GRUNE GUERRY L

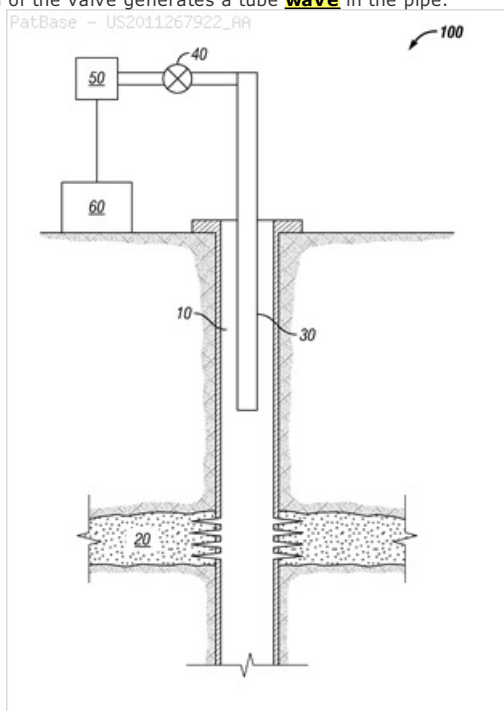
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU
CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL
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MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV
SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: MECHANICAL TUBE **WAVE** SOURCES AND METHODS OF USE FOR LIQUID FILLED BOREHOLES

Abstract: The current application discloses methods and **systems** for generating mechanical tube **waves** in fluid filled boreholes penetrating subterranean formations. In one embodiment, the **system** of the current application comprises an energy storage chamber; a fast operating valve connected to the energy storage chamber; a pipe connected to the valve and extending to the liquid-filled borehole; where said energy storage chamber contains a first **pressure** that is substantially different from a second **pressure** in the pipe so that a fast operation of the valve generates a tube **wave** in the pipe.

Classifications:

International (IPC 8-9): E21B34/00 E21B47/00 E21B47/08
E21B47/09 E21B47/10 G01V1/00 G01V1/04 G01V1/133 G01V1/137
G01V1/44 (Advanced/Invention)
CPC: G01V2210/12 G01V1/44 E21B47/0005 E21B47/091 E21B47/101
G01V1/137 G01V2210/1212 G01V2210/1299 G01V1/133
European: E21B47/00F E21B47/09D E21B47/10D
US: 1/1 367/143 367/25 367/25P



Family:

Publication number	Publication date	Application number	Application date
AR106985 AA	20180307	AR2016P103826	20161214
CA2787682 AA	20110804	CA20112787682	20110128
CA2787682 C	20180313	CA20112787682	20110128
MX2012008737 A1	20121001	MX20120008737	20110128
SG10201501417Q A1	20150429	SG20151001417	20110128
SG182602 A1	20120830	SG20120053344	20110128
US2011267922 AA	20111103	US20110015985	20110128
US2016103235 AA	20160414	US20150967971	20151214
US9453404 BB	20160927	US20110015985	20110128
US9841523 BB	20171212	US20150967971	20151214
WO11092660 A2	20110804	WO2011B50393	20110128
WO11092660 A3	20111215	WO2011B50393	20110128
WO17106218 A1	20170622	WO2016US66431	20161214

Priority:

US20100337042P 20100129 US20110015985 20110128 WO2011B50393 20110128
US20150967971 20151214

Probable Assignee: SCHLUMBERGER TECHNOLOGY CORP

Assignee(s): (std): AUZERAIS FRANCOIS M ; COATES RICHARD T ; GUILLOT DOMINIQUE ; GUILLOT DOMINQUE ; MILLER DOUGLAS E ; SCHLUMBERGER CA LTD ; SCHLUMBERGER HOLDINGS ; PRAD RES AND DEV LTD ; SCHLUMBERGER SERVICES PETROL ; SERVICES PETROLIERS SCHLUMBERGER ; SULLIVAN PHILIP F ; SCHLUMBERGER TECHNOLOGY BV ; SHAMPINE ROD ; SCHLUMBERGER TECHNOLOGY CORP ; SCHLUMBERGER TECH CORP

Assignee(s): SCHLUMBERGER CANADA LTD ; PRAD RESEARCH AND DEVELOPMENT LTD ; SCHLUMBERGER HOLDINGS LTD ; SCHLUMBERGER TECHNOLOGY B V ; PRAD RESEARCH AND DEVELOPMENT LIMITED ; SCHLUMBERGER CANADA LIMITED ; SCHLUMBERGER HOLDINGS LIMITED

Inventor(s): (std): ADAM KEILERS ; AUZERAIS FRANCOIS M ; COATES RICHARD T ; GUILLOT DOMINIQUE ; GUILLOT DOMINQUE ; KEILERS ADAM ; MILLER DOUGLAS E ; ROD WILLIAM SHAMPINE ; SHAMPINE ROD ; SHAMPINE ROD WILLIAM ; SULLIVAN PHILIP F

Inventor(s): PHILIP F SULLIVAN ; RICHARD T COATES ; ROD SHAMPINE ; DOMINIQUE GUILLOT ; DOUGLAS E MILLER ; FRANCOIS M AUZERAIS

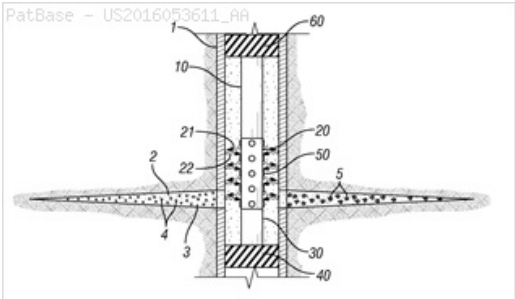
Agent(s): SMART AND BIGGAR; DONALDSON AND BURKINSHAW LLP; TIM; ANDREA E; DAE MICHAEL; TRAN ANDREA E ET AL

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 DJ 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 IR IS IT JP KE KG KH KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: **SYSTEM** AND METHOD FOR USING **PRESSURE PULSES** FOR **FRACTURE** STIMULATION PERFORMANCE ENHANCEMENT AND EVALUATION

Abstract: A **system** and method of applying **periodic** energy **pulses** to a portion of a wellbore, **fracture(s)**, and/or near wellbore to interrogate and/or stimulate at least a portion of the wellbore, **fracture(s)**, and/or near wellbore. The **system** includes a downhole **device** that is configured to deliver **periodic** energy **pulses** to a portion of the wellbore. The downhole **device** may deliver various energy **pulses** such as **pressure waves**, **seismic waves**, and/or acoustic **waves**. **Sensors** may determine properties of a portion of the wellbore and/or **fracture** based on energy **pulses** detected within the wellbore. The **sensors** may be connected to the downhole tool, may be positioned within the wellbore, and/or may be positioned at the surface. The magnitude and/or frequency of the **periodic** energy **pulses** may be varied to change the stimulation and/or interrogation of the wellbore.

Classifications:
International (IPC 8-9): E21B28/00 E21B41/00 E21B43/25 E21B43/26 E21B43/263 E21B43/267 E21B47/085 E21B49/00 G01V1/40 G1V1/40 (Advanced/Invention); E21B43/26 E21B43/267 G01V1/52 (Advanced/Non-invention)
CPC: E21B28/00 E21B43/263 E21B43/267 E21B43/26 E21B43/25
US: 166/113 166/244.1 166/250.01 166/250.1 166/308.1 166/63



Family:

Publication number	Publication date	Application number	Application date
AR101609 AA	20161228	AR2015P102696	20150821
CA2958765 AA	20170215	CA20152958765	20150819
CO20170002313 A2	20170630	CO20170002313	20170308
EP3183420 A1	20170628	EP20150834278	20150819
EP3183420 A4	20180801	EP20150834278	20150819
IN201717009071 A	20170818	IN201717009071	20170316
MX2017001975 A1	20170504	MX20170001975	20150819
NO20170279 A	20170227	NO20170000279	20170227
US2016053611 AA	20160225	US20150828902	20150818
WO16028886 A1	20160225	WO2015US45883	20150819

Priority:

US20140040508P 20140822 US20150828902 20150818 WO2015US45883 20150819

Probable Assignee: BAKER HUGHES A GE CO LLC

Assignee(s): (std): BAKER HUGHES INC

Assignee(s): LIVESCU SILVIU ; MOOS DANIEL ; BAKER HUGHES A GE CO LLC

Inventor(s): (std): DANIEL MOOS ; LIVESCU SILVIU ; MOOS DANIEL ; SILVIU LIVESCU

Agent(s): SIM AND MCBURNEY; MARKS AND CLERK; CAROLINA MERCEDES DAZA MONTALVO; LAMBACHER MICHAEL; JOHNSON REXFORD ET AL

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 IR 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: METHOD AND **APPARATUS** FOR STIMULATING WELLS

Abstract: The invention provides an **apparatus** and method for stimulating a borehole of a well. The invention provides an **apparatus** that generates low-frequency **seismic** type elastic **waves** that propagate to the geologic formation and in order to enhance the movement of fluids in the geologic formation toward a well. The **apparatus** may operate automatically driven by a power source that may be located on the ground surface. The regime of operation may be determined by user input. Operation of the **apparatus** may be carried out while production of a natural resource is ongoing.

Classifications:

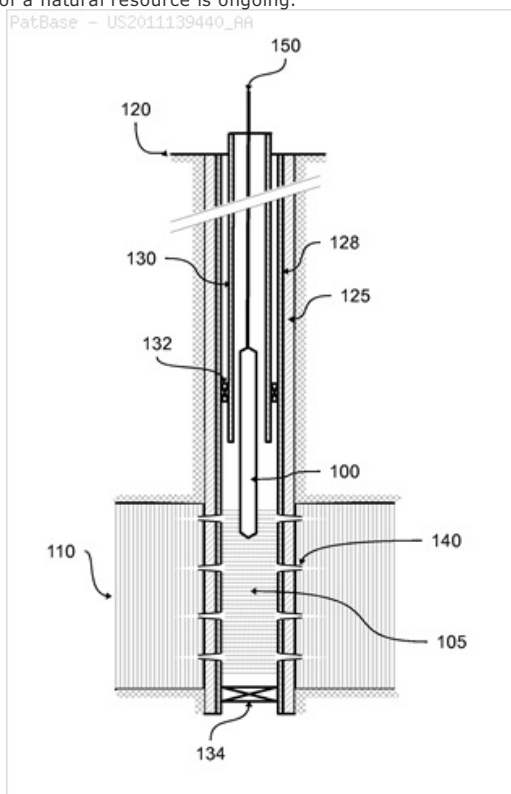
International (IPC 8-9): E21B28/00 E21B43/00 E21B43/25
E21B47/18 G01V1/00 (Advanced/Invention)

International (IPC 1-7): E21B28/00 E21B43/00

CPC: E21B28/00 E21B43/003

European: E21B28/00 E21B43/00C

US: 166/177.1 166/177.100S 166/177.2 166/248 166/249 166/65.1 166/66 166/66S 181/108 181/113 181/206 367/38 367/38S 367/83 367/83S



Family:

Publication number	Publication date	Application number	Application date
AR081233 AA	20120718	AR2010P104612	20101214
AR084664 AA	20130605	AR2010P104613	20101214
CA2783931 AA	20120608	CA20102783931	20101210
CA2783931 C	20180102	CA20102783931	20101210
CA2783932 AA	20120608	CA20102783932	20101210
CL2012001555 A1	20130125	CL20120001555	20120611
CO6561794 A2	20121115	CO20120116455	20120711
GC4019 A	20160308	GC2010P017304	20101211
GC4028 A	20160310	GC2010P017303	20101211
MX2012006689 A1	20121009	MX20120006689	20101210
US2011139440 AA	20110616	US20100962436	20101207
US2011139441 AA	20110616	US20100963638	20101209
US8613312 BB	20131224	US20100962436	20101207
WO11070142 A2	20110616	WO2010EP69357	20101210
WO11070142 A3	20110818	WO2010EP69357	20101210
WO11070143 A2	20110616	WO2010EP69358	20101210
WO11070143 A3	20110922	WO2010EP69358	20101210

Priority:

US20090285541P 20091211 US20100962436 20101207 US20100963638 20101209
WO2010EP69357 20101210 WO2010EP69358 20101210

Probable Assignee: AIC ENERGY LLC

Assignee(s): (std): BARLOCCI PENNATI ANNA ; ZOLEZZI GARRETON ALFREDO ; TECHNOLOGICAL RES LTD ; TECH RESEARCH LTD

Assignee(s): AIC ENERGY LLC ; AIC LLC ; GARRETON ALFREDO ZOLEZZI ; KLAMATH FALLS INC ; TECHNOLOGICAL RESEARCH LTD

Inventor(s): (std): ALFREDO ZOLEZZI GARRETON ; ZOLEZZI GARRETON ALFREDO

Agent(s): RIDOUT AND MAYBEE LLP; ESTUDIO CONSULTORA HOLTHEUER; HUMBERTO RUBIO CAMACHO; SULEIMAN I AL AMMAR LAW OFFICE; KARIM; ZBM PATENTS ZEA BARLOCCI AND MARKVARDSEN

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

Title: **SYSTEM** AND METHOD FOR INCREASING PRODUCTION CAPACITY OF OIL, GAS AND WATER WELLS

Abstract: The invention provides an **apparatus**, method and **system** for stimulating production of a natural resource (e.g., Oil, gas or water) producing well using vibrational energy delivered to the geological formation through a **device** that maybe permanently installed, and continuously or periodically operated even during recovery of the natural resource. The **apparatus** is of a downhole type. The **apparatus** is constructed to resist corrosion and provides one or more heat sink chambers for controlling heat dissipation during operation. The **system** provided by the invention is capable of monitoring production, adapting stimulation parameters based on user input and other pertinent parameters.

Classifications:

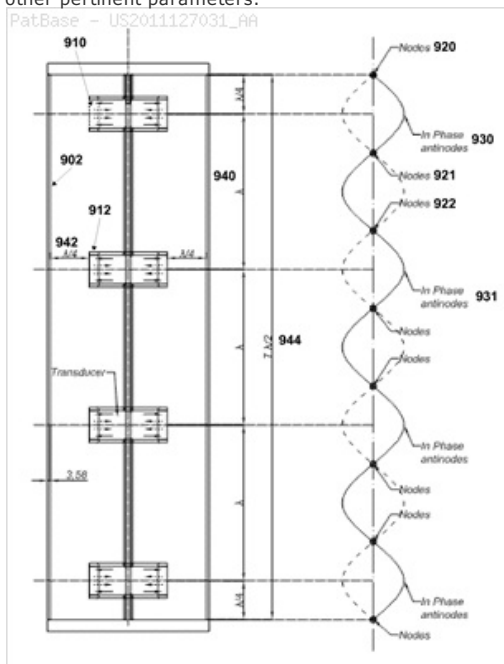
International (IPC 8-9): E21B28/00 E21B43/00
E21B43/25 (Advanced/Invention)

International (IPC 1-7): E21B28/00 E21B43/00

CPC: E21B43/003 E21B28/00

European: E21B28/00 E21B43/00C

US: 166/177.1 166/177.100S 166/177.6 166/249



Family:

Publication number	Publication date	Application number	Application date
AR079228 AA	20120104	AR2010P104430	20101201
CA2782408 AA	20120530	CA20102782408	20101129
GC4026 A	20160310	GC2010P017198	20101129
US2011127031 AA	20110602	US20100954906	20101128
US2012132416 AA	20120531	US20110029108	20110216
US2014246191 AA	20140904	US20140197086	20140304
US8746333 BB	20140610	US20100954906	20101128
WO11064375 A2	20110603	WO2010EP68446	20101129
WO11064375 A3	20111201	WO2010EP68446	20101129

Priority:

US20090283195P 20091130 US20100954906 20101128 WO2010EP68446 20101129
US20110029108 20110216 US20140197086 20140304

Probable Assignee: AIC ENERGY LLC

Assignee(s): (std): BARLOCCI PENNATI ANNA ; ZOLEZZI GARRETON ALFREDO ; TECHNOLOGICAL RES LTD ; TECHNOLOGICAL ORGANIZATION NAME RES LTD

Assignee(s): TECHNOLOGICAL ORGANIZATION NAME RESEARCH LTD ; AIC ENERGY LLC ; AIC LLC ; GARRETON ALFREDO ZOLEZZI ; KLAMATH FALLS INC ; TECHNOLOGICAL RESEARCH LTD

Inventor(s): (std): ZOLEZZI GARRETON ALFREDO

Inventor(s): ALFREDO ZOLEZZI GARRETON

Agent(s): RIDOUT AND MAYBEE LLP; SULEIMAN I AL AMMAR LAW OFFICE; KARIM; ZBM PATENTS ZEA BARLOCCI AND MARKVARDSEN

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 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

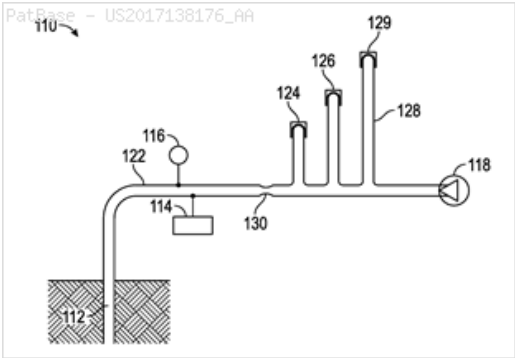
Title: NOISE REDUCTION FOR TUBEWAVE MEASUREMENTS

Abstract: A pressure wave system having a tubular member, a signal source, a sensor, and a source of noise, has a noise interference system employing one or more a lateral branches to cancel pressure noise, and/or amplify or filter the pressure wave signal. A related method generates the pressure wave signal, connects the lateral branch or branches to amplify or filter the signal and/or cancel noise from the system, and receives the signal or a response of the system to the signal. The lateral branches are simple pipe stubs or loops that can be made using ordinary piping components, or are more complex designs.

Classifications:

International (IPC 8-9): E21B41/00 E21B47/06 F04D29/66
F16L55/04 (Advanced/Invention)

CPC: E21B47/06 G01V1/44 G10K11/172



Family:

Publication number	Publication date	Application number	Application date
US2017138176 AA	20170518	US20150939844	20151112
WO17083237 A1	20170518	WO2016US60879	20161108

Priority:

US20150939844 20151112

Probable Assignee: SCHLUMBERGER TECHNOLOGY CORP

Assignee(s): (std): SCHLUMBERGER CA LTD ; SCHLUMBERGER TECHNOLOGY BV ; SCHLUMBERGER TECHNOLOGY CORP ; SERVICES PETROLIERS SCHLUMBERGER

Assignee(s): SCHLUMBERGER CANADA LTD

Inventor(s): (std): BOGDAN ANDREY ; BOGDAN ANDREY VLADIMIROVICH ; KEILERS ADAM ; KEILERS ADAM ETHAN ; SHAMPINE ROD WILLIAM

Agent(s): TRAN ANDREA E ET AL

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 DJ 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 IR IS IT JP KE KG KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: TORSIONAL FORCE TRANSDUCER AND METHOD OF OPERATION

Abstract: A transducer and method for imparting vibrational signals to a structure are disclosed. In one embodiment, a set of piezoelectric disks are constructed in conjunction with a deformable housing to impart controlled distortions to the structure, such as to a well pipe **string**. Torsional forces are applied to the structure due to the orientation of the piezoelectric material relative to the electric field applied thereto. The piezoelectric material is placed in layers, with the polarization axis orthogonal to the direction of the electric field. Alternate layers are oriented in opposing directions, and alternating electrodes are connected together, so that each layer cooperates with the others to twist the housing in the same direction. To improve transmission, the **apparatus** can be tuned to a frequency determined by a spectrum analysis of the pipe **string**. A reactance mass may be connected to the transducer to increase the amplitude of the imparted vibrations, and also to allow tuning of the frequency of vibrations of the transducer.

Classifications:

International (IPC 8-9): B06B1/06 E21B47/12 E21B47/16 G01V1/46 G01V3/20 H01L41/083 (Advanced/Invention); B06B1/06 E21B47/12 G01V1/40 G01V3/18

H01L41/083 (Core/Invention)

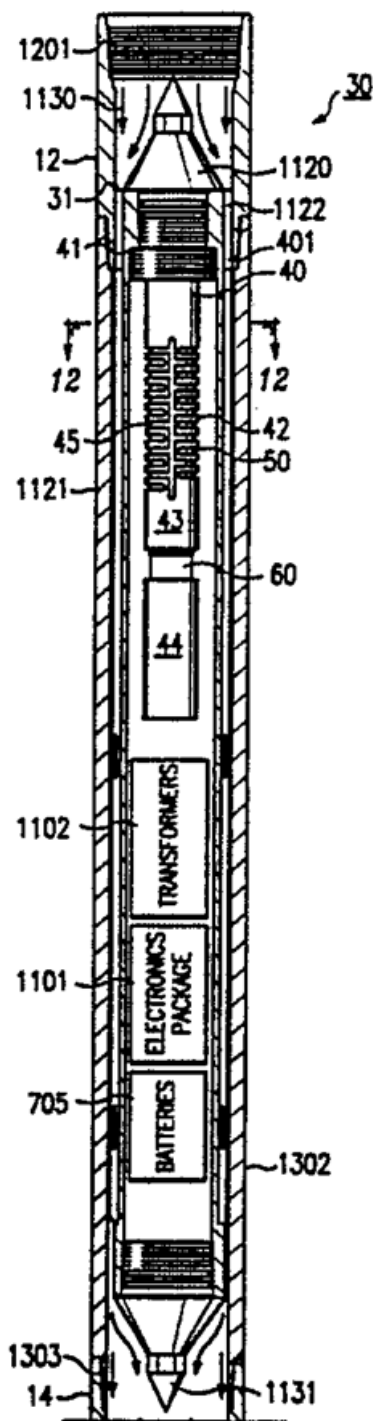
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CPC: B06B1/0611 H01L41/0833 H01L41/0835 G01V3/20 E21B47/16 E21B47/124 G01V1/46 H01L41/083

European: B06B1/06C2 E21B47/12S E21B47/16 G01V1/46 G01V3/20 H01L41/083

US: 310/325 310/328 310/333 310/334 310/358 340/853 367/165 367/82 395/823 395/827 710/3 710/7

PatBase - US5159226_A

**Family:**

Publication number	Publication date	Application number	Application date
AU199228657 A1	19930503	AU19920028657	19921002
US5159226 A	19921027	US19900554030	19900716
US5166908 A	19921124	US19910746309	19910814
US5306980 A	19940426	US19920915928	19920717

US5881310 A	1990309	US19960589834	19960122
WO9201955 A1	19920206	WO1991US04878	19910709
WO9202054 A1	19920206	WO1991US04879	19910709
WO9307514 A1	19930415	WO1992US08412	19921002

Priority:

US19900554022	19900716	US19900554030	19900716	US19910695610	19910503
US19910746309	19910814	US19910771758	19911004	US19920915928	19920717
WO1992US08412	19921002	US19960589834	19960122		

Probable Assignee: ATLANTIC RICHFIELD CO

Assignee(s): (std): ATLANTIC RICHFIELD CO

Assignee(s): ATLANTIC RICHFIELD COMPANY

Inventor(s): (std): KINGMAN JOHN E E ; LIVESAY RONALD B ; MONTGOMERY MELVIN ; MONTGOMERY MELVIN G ; AIRHART TOM PATTERSON

Inventor(s): KINGMAN JOHN E ; TOM PATTERSON AIRHART ; RONALD B LIVESAY ; MELVIN G MONTGOMERY ; JOHN E E KINGMAN

Designated states: AT AU BE CA CH DE DK ES FR GB GR IE IT LU MC NL NO SE

Title: BOREHOLE MINING **SYSTEM** AND METHODS USING SONIC-**PULSED** JETTING EXCAVATION AND EDUCTOR SLURRY RECOVERY **APPARATUS**

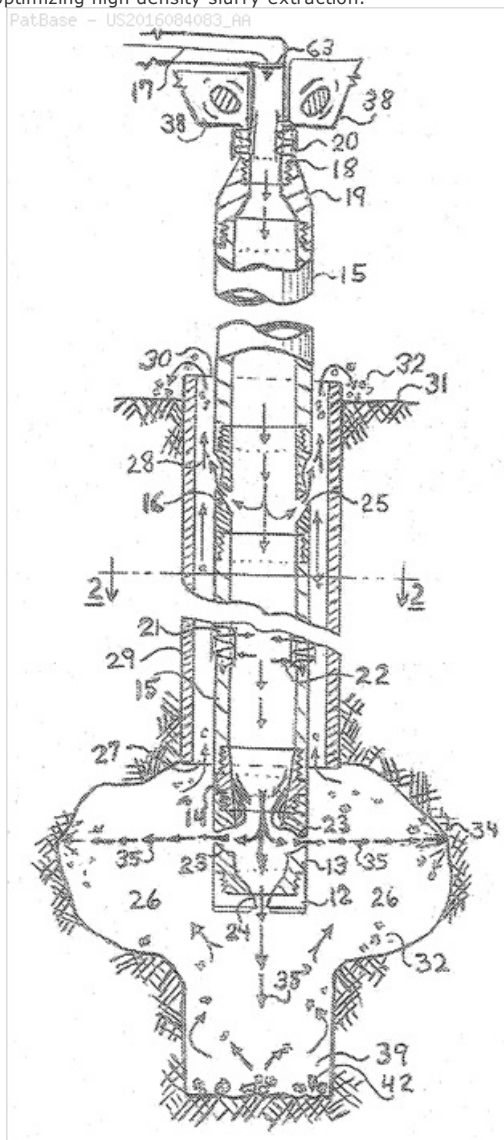
Abstract: A borehole subsurface mining **system** and methods for generating sonically **pulsed** hydraulic jets for subsurface excavation and slurry extraction, combining modulated oscillating energy at relatively low frequencies produced from a sonic drill head of working sonic core drilling rigs in combination with energy and water flow from a **pressurized** pumping **system**, to perform **pulsed** jet slurry mining of underground resource deposits through at least one partially cased subterranean borehole using a sonic drill head member and rod **string** members in relation to which the attached inventive **pulsed** jetting **apparatus** and methods operate. The **system** design and methods includes an adaptably attachable, sectional, tubular combination **apparatus** assembly with at least one casing member in general axial alignment comprised of sonic rod, jetting educator coupling, transition rod, jetting sub-coupling and jetting shoe rock bit members. Also includes methods for sump heavy concentrate core barrel extraction and for optimizing high density slurry extraction.

Classifications:

International (IPC 8-9): E21B21/06 E21B25/00 E21B43/29 E21B7/18 E21B7/24 E21C25/60 E21C37/12 E21C45/04 (Advanced/Invention); E21B7/24 (Advanced/Non-invention)

CPC: E21C45/04 E21C25/60 E21B7/18 E21B7/24 E21B43/29 E21B21/065 E21B25/00 E21C37/12

US: 175/202 175/217 299/1.05 299/17



Family:

Publication number	Publication date	Application number	Application date
US2016084083 AA	20160324	US20150862122	20150922
US9995126 BA	20180612	US20160202694	20160706
US9995127 BA	20180612	US20160203342	20160706

Priority:

US20140071420P 20140923 US20150862122 20150922 US20160202694 20160706
US20160203342 20160706

Probable Assignee: GEODRILLING TECH INC

Assignee(s): (std): GEODRILLING TECH INC ; HICE GILBERT ALAN ; HICE THOMAS JOSEPH

Assignee(s): GEODRILLING TECHNOLOGIES INC

Inventor(s): (std): HICE GILBERT ALAN ; HICE THOMAS JOSEPH

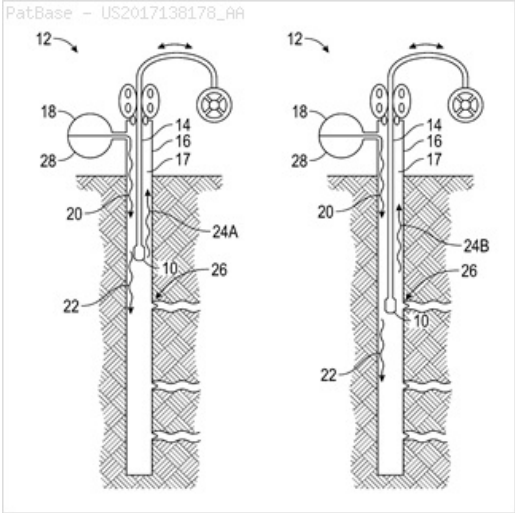
Agent(s): JAMES W; INTELLA IP

Title: MOVING **SYSTEM**

Abstract: A method moves a tube **wave** reflector in a well, generates a tube **wave**, receives a reflection, and determines the depth of one or more reflector locations from the elapsed time. Also, a method to locate a feature in a well deploys a bottom hole assembly (BHA), generates acoustic noise from the BHA, and autocorrelates to determine the BHA depth. Also, a **system** has a coiled tubing **string** to a BHA, a surface **wave** generator, a surface and/or distributed receiver, and a recorder to determine elapsed times between generation and receipt.

Classifications:

International (IPC 8-9): E21B17/20 E21B43/26 E21B47/00
E21B47/09 G01V1/00 G01V1/133 G01V1/40
G01V1/52 (Advanced/Invention);
E21B33/12 E21B34/06 G01V1/52 (Advanced/Non-invention)
CPC: E21B47/091 E21B17/20 E21B33/12 E21B34/06 E21B43/26
G01V1/52



Family:

Publication number	Publication date	Application number	Application date
AR106656 AA	20180207	AR2016P103440	20161110
US2017138178 AA	20170518	US20150939876	20151112
US10047601 BB	20180814	US20150939876	20151112
WO17083449 A1	20170518	WO2016US61217	20161110

Priority:

US20150939876 20151112

Probable Assignee: SCHLUMBERGER TECHNOLOGY CORP

Assignee(s): (std): SCHLUMBERGER TECH CORP ; SCHLUMBERGER TECHNOLOGY BV ; SCHLUMBERGER TECHNOLOGY CORP ; SERVICES PETROLIERS SCHLUMBERGER ; SCHLUMBERGER CA LTD

Assignee(s): SCHLUMBERGER CANADA LTD

Inventor(s): (std): BOGDAN ANDREY ; KEILERS ADAM ; LECERF BRUNO ; SHAMPINE ROD WILLIAM ; ROD WILLIAM SHAMPINE ; BRUNO LECERF ; ANDREY BOGDAN ; ADAM KEILERS

Agent(s): TRAN ANDREA E; TRAN ANDREA E ET AL

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 DJ 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 IR IS IT JP KE KG KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: METHOD AND **SYSTEM** FOR DOWNHOLE OBJECT LOCATION AND ORIENTATION DETERMINATION

Abstract: A downhole **device** is provided that is intended to be co-located with an optical fiber cable to be found, for example by being fixed together in the same clamp. The **device** has an accelerometer or other suitable orientation determining means that is able to determine its positional orientation, with respect to gravity. A vibrator or other sounder is provided, that outputs the positional orientation information as a suitable encoded and modulated acoustic signal. A fiber optic distributed acoustic **sensor** deployed in the vicinity of the downhole **device** detects the acoustic signal and transmits it back to the surface, where it is demodulated and decoded to obtain the positional orientation information. Given that the **device** is co-located with the optical fiber the position of the fiber can then be inferred. As explained above, detecting the fiber position is important during perforation operations, so that the fiber is not inadvertently damaged.

Classifications:

International (IPC 8-9): E21B47/022 E21B47/09 G01C9/00

G01D5/14 G01V1/22 G01V1/44 G01V1/46

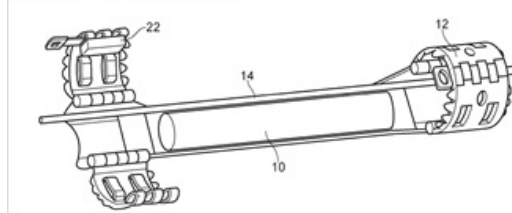
G01V11/00 (Advanced/Invention)

CPC: E21B47/02208 G01V1/44 G01V1/46 G01D5/14 G01V1/226

E21B47/091 E21B43/116 G01V11/002

US: 367/35

PatBase - US2017082766_AA



Family:

Publication number	Publication date	Application number	Application date
AU2015261280 AA	20151119	AU20150261280	20150515
CA2948753 AA	20161110	CA20152948753	20150515
CN106461806 A	20170222	CN201580026239	20150515
EP3143440 A1	20170322	EP20150739311	20150515
GB201618445 A0	20161214	GB20160018445	20150515
GB2540094 A1	20170104	GB20160018445	20150515
US2017082766 AA	20170323	US20150311425	20150515
WO15173592 A1	20151119	WO2015GB51448	20150515

Priority:

US20140994474P 20140516 US20150311425 20150515 WO2015GB51448 20150515

Probable Assignee: SILIXA LTD

Assignee(s): (std): SILIXA LTD

Assignee(s): FARHADIROUSHAN MAHMOUD ; FRANKEY BRIAN ; MILNE CRAIG ; PARKER TOM

Inventor(s): (std): BRIAN FRANKEY ; CRAIG MILNE ; FARHADIROUSHAN MAHMOUD ; FRANKEY BRIAN ; MAHMOUD FARHADIROUSHAN ; MILNE CRAIG ; PARKER TOM ; TOM PARKER

Agent(s): DAVIES COLLISON CAVE PTY LTD; MBM INTELLECTUAL PROPERTY LAW LLP; WALLIN NICHOLAS JAMES; WALLIN NICHOLAS

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 IR 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 PA PE PG PH PL PT QA RO RS RU RW SA 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

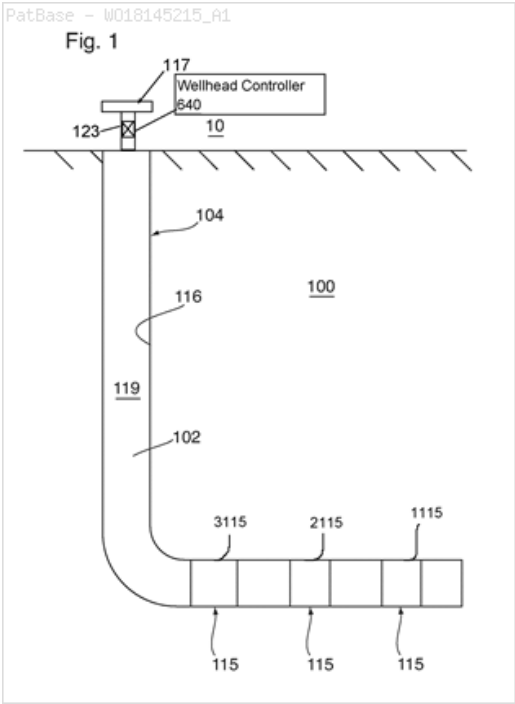
Title: **SYSTEM** AND METHOD FOR WIRELESS CONTROL OF WELL BORE EQUIPMENT

Abstract: There is provided an **apparatus** for controlling flow in a well bore, comprising: a housing defining a fluid passage; a flow control **device** sealing an outlet of said fluid passage; an actuator for manipulating said flow control **device** to an open condition to permit fluid flow through said outlet; a controller for selectively activating said actuator; an acoustic receiver in communication with said controller, said acoustic receiver configured to receive acoustic signals comprising programming instructions for said controller.

Classifications:

International (IPC 8-9): E21B34/10 E21B43/12 E21B43/26
E21B47/20 E21B47/22 (Advanced/Invention)

CPC: E21B43/12 E21B47/18



Family:

Publication number	Publication date	Application number	Application date
WO18145215 A1	20180816	WO2018CA50160	20180213

Priority:

US20170458194P 20170213

Probable Assignee: NCS MULTISTAGE INC

Assignee(s): (std): NCS MULTISTAGE INC

Inventor(s): (std): LAUN LYLE ; TAJALLIPOUR RAMIN ; VAKULIN ROMAN ; WERRIES MICHAEL

Agent(s): RIDOUT AND MAYBEE LLP

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 DJ 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 IR IS IT JO JP KE KG KH KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: METHOD AND **SYSTEM** FOR DOWNHOLE OBJECT LOCATION AND ORIENTATION DETERMINATION

Abstract: Embodiments of the invention provide a downhole **device** that is intended to be co-located with a perforating gun **string** to allow the rotational orientation thereof when deployed downhols to be determined. The **device** has an accelerometer or other suitable orientation determining means that is able to determine its positional orientation, with respect to gravity. A vibrator or other sounder is provided, that outputs the positional orientation information as a suitable encoded and modulated acoustic signal. A fiber optic distributed acoustic **sensor** deployed in the vicinity of the downhole **device** detects the acoustic signal and transmits it back to the surface, where it is demodulated and decoded to obtain the positional orientation information. Given that the **device** is co-located with the perforating gun the position of the gun can then be inferred.

Classifications:

International (IPC 8-9): E21B43/117 E21B47/01 E21B47/022
E21B47/024 E21B47/09 E21B47/14 G01V1/44 (Advanced/Invention)
CPC: E21B43/117 E21B47/011 E21B47/024 E21B47/0905
E21B47/02208 E21B47/09 E21B47/14 G01V1/44

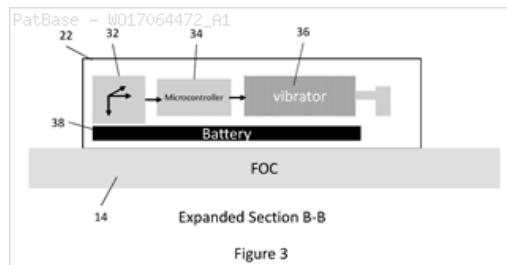


Figure 3

Family:

Publication number	Publication date	Application number	Application date
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GB2546061 A1	20170712	GB20150018026	20151012
WO17064472 A1	20170420	WO2016GB53094	20161005

Priority:

GB20150018026 20151012

Probable Assignee: SILIXA LTD

Assignee(s): (std): SILIXA LTD

Inventor(s): (std): CRAIG MILNE ; MILNE CRAIG

Agent(s): WITHERS AND ROGERS LLP

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 DJ 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 IR IS IT JP KE KG KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: MOVING **SYSTEM** AND METHOD

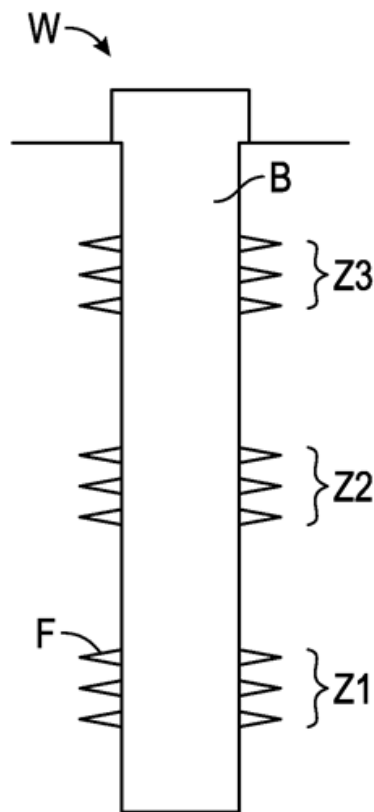
Abstract: A method to locate **fracture** zones in a well by emitting tube **waves** from different emission locations, sensing responses from the **fracture** zones at different corresponding receiving locations, and analyzing the responses to map the location of the **fracture** zones. Also, a **system** to locate the **fracture** zones in a well with an emitter movable to emit tube **waves** at different emission locations in the well, a downhole receiver adapted to sense responses at respective receiving locations a fixed distance relative to the emission locations, and a recorder to track the time between the emission and the response for the different emission locations. Also a downhole tool equipped with a tube **wave** emitter, a tube **wave** response receiver in a tandem arrangement with the emitter, and a deployment **system** selected from wireline, coiled tubing, tractor, and combinations thereof to move the emitter and receiver together in tandem.

Classifications:

International (IPC 8-9): E21B17/20 E21B47/00 E21B47/14 G01V1/46 G01V1/52 (Advanced/Invention)

CPC: E21B47/14 E21B17/20 E21B47/18 E21B43/26 E21B47/091 G01V1/003 G01V1/50 G01V1/52 G01V2210/646

PatBase - US2017138182_AA



Family:

Publication number	Publication date	Application number	Application date
AR106655 AA	20180207	AR2016P103439	20161110
US2017138182 AA	20170518	US20150939803	20151112
WO17083443 A1	20170518	WO2016US61209	20161110

Priority:

US20150939803 20151112

Probable Assignee: SCHLUMBERGER TECHNOLOGY CORP

Assignee(s): (std): SCHLUMBERGER CA LTD ; SCHLUMBERGER TECHNOLOGY BV ; SCHLUMBERGER TECHNOLOGY CORP ; SERVICES PETROLIERS SCHLUMBERGER

Assignee(s): SCHLUMBERGER CANADA LTD

Inventor(s): (std): ADAM ETHAN KEILERS ; ANDREY VLADIMIROVICH BOGDAN ; BOGDAN ANDREY ; BOGDAN ANDREY VLADIMIROVICH ; BRUNO LECERF ; KEILERS ADAM ; KEILERS ADAM ETHAN ; LECERF BRUNO

Agent(s): TRAN ANDREA E ET AL

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 DJ 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 IR IS IT JP KE KG KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: IMPROVEMENTS IN OR RELATING TO DRILLING WITH GAS LIQUID SWIRL GENERATOR HYDROCYCLONE SEPARATION COMBUSTION THERMAL JET SPALLATION

Abstract: A high velocity 3 phase mixture is pumped down a drill **string** to a vortex swirl generator/hydrocyclone for 2 phase separation flow into a twin vortex combustion chamber manifold that swirls the air in and around the fuel and water mixture droplets (atomise) producing instant exothermic heat of combustion thereby producing a super-critical thermal spallation jet flow; with surface control of the water to fuel (kerosene) content allows temperature control between 400 degrees centigrade and 1,800 degrees centigrade with additional abrasive particles if required, axial **pulse** jets are also optional for further erosion to the rock face, allowing the spalling of all rocks with high strength to low ductile transformation temperatures. The spallation drilling **system** makes possible drilling of well bores to allow the use of steam drive and alternating steam injection within oil reservoirs and electrical power generation which are able to use super-critical HDR principles with water temperatures above super-critical 374 degrees centigrade and critical **pressure** of 3,204 psi for expansion back to lower **pressure** with high quality steam.

Classifications:

International (IPC 8-9): B41J29/26 B43L19/00 B65H37/00

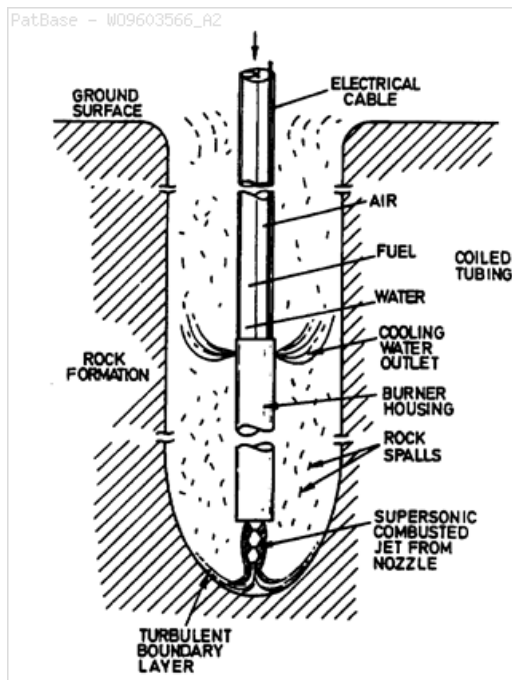
B65H41/00 E21B7/14 (Advanced/Invention);

E21B7/14 (Core/Invention)

International (IPC 1-7): E21B21/00 E21B43/29 E21B7/14

CPC: E21B7/14

European: E21B7/14



Family:

Publication number	Publication date	Application number	Application date
AU199529868 A1	19960222	AU19950029868	19950719
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GB9416668 A0	19941012	GB19940016668	19940817
GB9416738 A0	19941012	GB19940016738	19940818
GB9417100 A0	19941012	GB19940017100	19940824
GB9417436 A0	19941019	GB19940017436	19940830
GB9422900 A0	19950104	GB19940022900	19941114
WO9603566 A2	19960208	WO1995GB01709	19950719
WO9603566 A3	19960509	WO1995GB01709	19950719

Priority:

GB19940015001 19940726	GB19940015003 19940726	GB19940015003 19940726
GB19940015577 19940802	GB19940015577 19940802	GB19940016668 19940817
GB19940016738 19940818	GB19940017100 19940824	GB19940017436 19940830
GB19940022900 19941114	WO1995GB01709 19950719	

Probable Assignee: NORTH JOHN

Assignee(s): (std): JOHN NORTH ; NORTH JOHN

Inventor(s): (std): NORTH JOHN

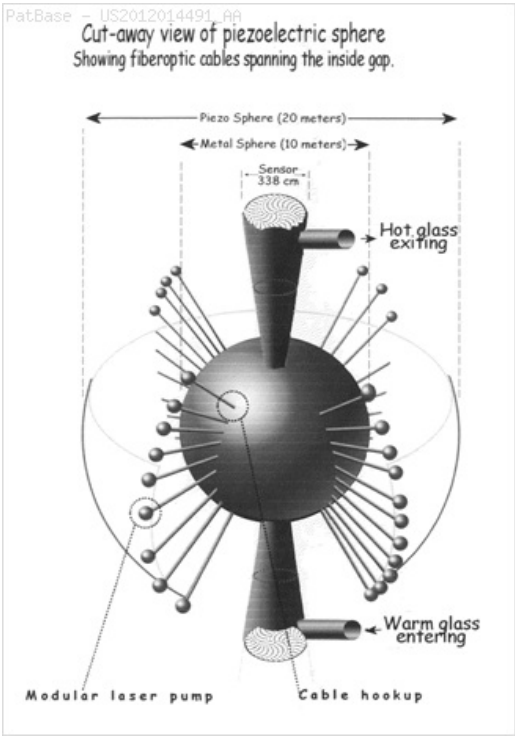
Inventor(s): JOHN NORTH

Designated states: AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IS IT JP KE KG KP KR KZ LK LR LT LU LV MC MD MG ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TT UA UG US UZ VN

Title: NUCLEAR FUSION POWER PLANT HAVING A LIQUID REACTOR CORE OF MOLTEN GLASS THAT IS MADE LASERACTIVE AND FUNCTIONS AS A TRITIUM BREEDING BLANKET WHICH IS CAPABLE OF ACOUSTICLY COMpressING/CONFINING FUEL SO THAT IT RADIATES AND TRIGGERS OUTGOING LASER CASCADES THAT WILL REFLECT FROM THE BLAST CHAMBER'S SPHERICAL INSIDE WALL AND RETURN LIKE PHOTONIC TSUNAMIS, CRUSHING, HEATING, AND CAUSING THERMONUCLEAR IGNITION OF THE FUEL SO THAT HEAT ENGINES AND PIEZOELECTRIC HARVESTERS CAN CONVERT THE RELEASED ENERGY INTO ELECTRICITY

Abstract: A nuclear fusion power plant having a spherical blast-chamber filled with a liquid coolant that breeds tritium, absorbs neutrons, and functions as both an acoustical and laser medium. Fuel bubbles up through the sphere's base and is positioned using computer guided piezoelectric transducers that are located outside the blast-chamber. These generate phase-shifted standing-waves that tractor the bubble to the center. Once there, powerful acoustic compression waves are launched. Shortly before these reach the fuel, an intense burst of light is pumped into the sphere, making the liquid laser-active. When the shockwaves arrive, the fuel temperature skyrockets and it radiates brightly. This, photon-burst, seeds outgoing laser cascades that return, greatly amplified, from the sphere's polished innards. Trapped within a reflecting sphere, squeezed on all sides by high-density matter, the fuel cannot cool or disassemble before thorough combustion. The blast's kinetic energy is absorbed piezoelectrically.

Classifications:
International (IPC 8-9): G21B1/00 (Advanced/Invention)
CPC: G21B3/008
European: G21B3/00D
US: 376/103 376/103P



Family:

Publication number	Publication date	Application number	Application date
US2012014491 AA	20120119	US20100803901	20100709

Priority:
US20090270649P 20090713 US20100803901 20100709

Probable Assignee: DEETH MIKE

Assignee(s): (std): DEETH MIKE

Inventor(s): (std): DEETH MIKE

Title: MAPPING FRACTURE DIMENSIONS

Abstract: Hydraulic fracture dimensions and, optionally, fracture closure pressure and time are determined by adding particulate matter that discharges to create an acoustic signal to the proppant, allowing the particulate matter to discharge, and detecting the acoustic signal with geophones or accelerometers. The particulate matter may be spheres or fibers. The discharge may be explosion, implosion, detonation, or rapid combustion or ignition. The discharge may be triggered by fracture closure or by chemical reaction.

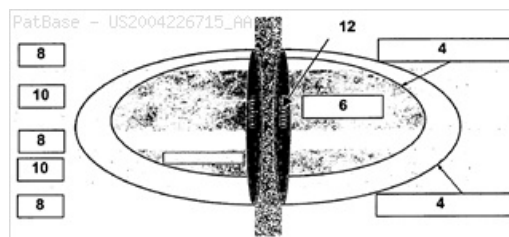
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E21B47/00 (Advanced/Invention);

E21B43/25 E21B47/00 (Core/Invention)

International (IPC 1-7): E21B43/26 E21B47/00**CPC:** E21B47/00**European:** E21B47/00**US:** 166/250.1 166/250.100P 166/271 166/280.2 166/280.200S

166/299 166/308.1 166/308.100S

**Family:**

Publication number	Publication date	Application number	Application date
CA2522679 AA	20051017	CA20042522679	20040416
CA2522679 C	20091117	CA20042522679	20040416
EA007449 B1	20061027	EA20050001629	20040416
EA200501629 A1	20060224	EA20050001629	20040416
MXPA05010907 A1	20060321	MX2005PA10907	20040416
US2004226715 AA	20041118	US20040824079	20040414
US7134492 BB	20061114	US20040824079	20040414
WO04092540 A1	20041028	WO2004IB01158	20040416

Priority:

US20030463868P 20030418

US20040824079 20040414

WO2004IB01158 20040416

Probable Assignee: SCHLUMBERGER TECHNOLOGY CORP

Assignee(s): (std): BABOUR KAMAL ; BESSON CHRISTIAN ; DESROCHES JEAN ; GZARA KAIS ; SCHLUMBERGER CA LTD ; SCHLUMBERGER CANADA LTD ; SCHLUMBERGER SERVICES PETROL ; SCHLUMBERGER HOLDINGS ; SCHLUMBERGER TECHNOLOGY BV ; SOFITECH NV ; WILLBERG DEAN ; SCHLUMBERGER TECHNOLOGY CORP

Assignee(s): SCHLUMBERGER HOLDINGS LTD ; SERVICES PETROLIERS SCHLUMBERGER ; SOFITECH N V

Inventor(s): (std): BABOUR KAMAL ; BESSON CHRISTIAN ; DESROCHES JEAN ; GZARA KAIS ; WILLBERG DEAN

Inventor(s): CHRISTIAN BESSON

Agent(s): SMART AND BIGGAR; THOMAS O; ROBIN; TIM

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 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

Title: ESTIMATION OF HYDRAULIC FRACTURE GEOMETRY FROM PUMPING PRESSURE MEASUREMENTS

Abstract: A pump is coupled through a discharge line to a wellbore, which in turn intersects a fracture, the wellbore and fracture being filled with fluid to form a fluid system. Sensors are located in position at the top and, under certain circumstances, at the bottom of the wellbore. The dimensions of the fracture are calculated from data generated by the sensors by analyzing the incident and reflected waves within the fluid system, the acoustic waves being generated by pressure pulses from a pump and travel from the pump through the fluid into the fracture. In preferred embodiments of this invention, transfer functions are developed by analysis of the data, so that the data recorded by sensors at the top of the wellbore accurately represent pressure fluctuations at the bottom of the wellbore. Transfer functions relating pressure fluctuations at the top of the wellbore to pressure fluctuations at the bottom of the wellbore, i.e., at the mouth of the fracture, exhibit resonant phenomena in the fracture from which fracture length can be determined. A Fourier transform is generated of transfer functions relating the impulse at the top of the annulus to the impulse response at the fracture entrance and through the fracture, to provide a time domain analysis of the waves in the fracture. This way, travel times of waves in the fracture can be determined, and this data used to estimate the length and height of the fracture, given that the wave speed in the fracture is known.

Classifications:

International (IPC 8-9): E21B43/26 E21B47/00 G01H13/00 G01V1/46 (Advanced/Invention);

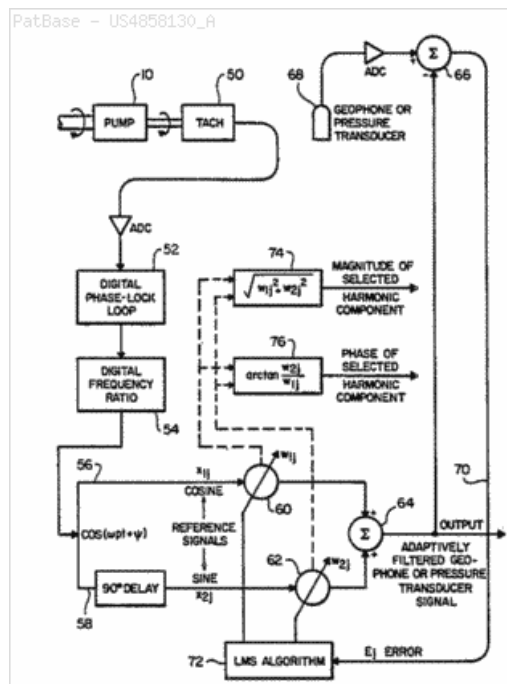
E21B43/25 E21B47/00 G01H13/00 G01V1/40 (Core/Invention)

International (IPC 1-7): E21B47/00 G01V1/02 G01V1/40

CPC: E21B43/26 E21B47/00 G01H13/00 G01V1/46

European: E21B43/26 E21B47/00 G01H13/00 G01V1/46

US: 166/250 166/250.09 364/421 702/11 73/151 73/152.39 73/152.58

**Family:**

Publication number	Publication date	Application number	Application date
US4858130 A	19890815	US19870083041	19870810

Priority:

US19870083041 19870810

Probable Assignee: GAS RESEARCH INST CHICAGO ILLINOIS A CORP OF ILLINOIS

Assignee(s): (std): GAS RES INST

Assignee(s): GAS RES INSTITUT ; GAS RESEARCH INST ; GAS RESEARCH INST CHICAGO ILLINOIS A CORP OF ILLIN ; GAS RESEARCH INST CHICAGO ILLINOIS A CORP OF ILLINOIS

Inventor(s): (std): WIDROW BERNARD

Title: WELL MONITORING BY MEANS OF DISTRIBUTED SENSING MEANS

Abstract: This application describes methods and **apparatus** for downhole monitoring in real-time. The method involves interrogating an unmodified optic fibre (102) arranged along the path of a well bore (106) to provide a distributed acoustic **sensor** and sampling data gathered from a plurality of sensing portions of the fibre. The sampled data is then processed to provide a real-time indication of the acoustic signals detected by the sensing portions of the fibre. The real-time indication provides information to an operator or controller of the downwell process with real-time feedback data regarding what is happening during the down-well process which allows the identification of any problems and adjustment of the process parameters.

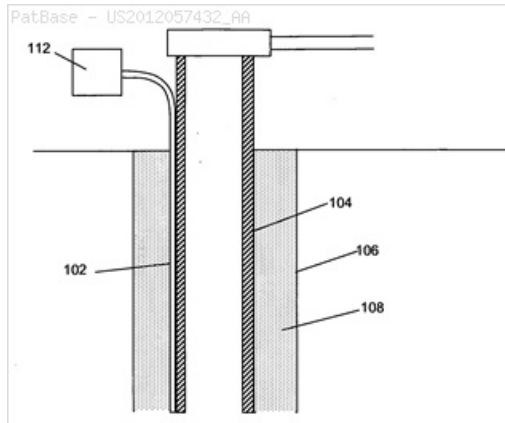
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CPC: G01V8/02 E21B43/11857 E21B43/26 E21B47/123 G01H9/004 G01V1/50 G01V2210/1429 G01V2210/646 E21B47/16 E21B47/101 E21B43/267 E21B47/14 G01V8/16 G01N29/036

European: E21B43/1185F E21B43/26 E21B47/10D E21B47/12M2 G01V8/02

US: 166/177.5 166/250.1 166/250.100P 166/308.1 166/308.100S 367/101 367/101S 367/140 367/140S 367/25 367/25S 367/81 367/81P 367/82 367/82P



Family:

Publication number	Publication date	Application number	Application date
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NO20111676 A	20111215	NO20110001676	20111206
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PL228478 B1	20180430	PL20100398045	20100527
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WO10136764 A2	20101202	WO2010GB01051	20100527
WO10136764 A3	20110929	WO2010GB01051	20100527
WO10136768 A2	20101202	WO2010GB01056	20100527
WO10136768 A3	20110203	WO2010GB01056	20100527
WO10136773 A2	20101202	WO2010GB01064	20100527
WO10136773 A3	20110505	WO2010GB01064	20100527
ZA201108666 A	20120926	ZA20110008666	20111124

Priority:

GB20090009038	20090527	GB20090019915	20091113	AU20100252797	20100527
CN201080005244	20100527	WO2010GB01064	20100527	WO2010GB01051	20100527
WO2010GB01056	20100527	GB20110021110	20100527	US20110320877	20111116
US20150816456	20150803	AU20160203552	20160530	AU20160203553	20160530

Probable Assignee: OPTASENSE HOLDINGS LTD

Assignee(s): (std): HILL DAVID JOHN ; MCEWEN KING MAGNUS ; OPTASENS K HOLDINGZ LTD ; OPTASENSE HOLDINGS LTD ; QINETIQ LTD ; TINDELL PATRICK ; TINDEL PATRICK

Assignee(s): TINDELL PATRICK PHILLIP ; QINETIQ LIMITED

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Inventor(s): HILL DAVID JOHN MC ; DAVID JOHN HILL ; EWENKING MAGNUS ; PATRICK PHILIP TINDELL ; PATRICK TINDEL

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; FETHERSTONHAUGH AND CO; OOO YURIDICHESKAYA GORODISSKIJ I PARTNER Y FA; MCDONNELL BOEHNEN HULBERT AND BERGHOFF LLP; NORTHWAY DANIEL R

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

Title: METHOD OF MANUFACTURE AND THE USE OF A FUNCTIONAL PROPPANT FOR DETERMINATION OF SUBTERRANEAN FRACTURE GEOMETRIES

Abstract: Proppants having added functional properties are provided, as are methods that use the proppants to track and trace the characteristics of a fracture in a geologic formation. Information obtained by the methods can be used to design a fracturing job, to increase conductivity in the fracture, and to enhance oil and gas recovery from the geologic formation. The functionalized proppants can be detected by a variety of methods utilizing, for example, an airborne magnetometer survey, ground penetrating radar, a high resolution accelerometer, a geophone, nuclear magnetic resonance, ultra-sound, impedance measurements, piezoelectric activity, radioactivity, and the like. Methods of mapping a subterranean formation are also provided and use the functionalized proppants to detect characteristics of the formation.

Classifications:

International (IPC 8-9): B01J13/02 B23B19/00 B82Y30/00 C04B35/628 C09K8/60 C09K8/74 C09K8/80 E21B43/00 E21B43/267 E21B43/27 E21B47/00 E21B47/10 E21B47/12 E21B49/00 G01V3/24 (Advanced/Invention); C09K8/60 E21B43/00 E21B43/25 E21B47/00 E21B49/00 (Core/Invention)

International (IPC 1-7): E21B43/25 E21B47/00

CPC: C09K8/80 B01J13/02 B82Y30/00 C04B35/62807 C04B35/62823 C04B35/62839 C04B35/62842 C04B35/62894 C04B2235/3418 C04B2235/422 C04B2235/5288 C09K8/805 E21B43/00 E21B43/267 E21B47/00 E21B47/12 E21B49/00 G01V3/24 Y10S507/907 Y10S507/924 Y10T428/29 Y10T428/2991 Y10T428/2993

European: B01J13/02 B82Y30/00 C04B35/628B10 C04B35/628B2B C04B35/628B2H8 C04B35/628B8R C04B35/628P C09K8/80 C09K8/80B E21B43/00 E21B43/267 E21B47/00 E21B47/12 E21B49/00 M04B235/34D M04B235/42C M04B235/52J2

US: 166/249 166/250.1 166/250.100P 166/250.100S 166/251.1 166/251.100S 166/280.2 166/280.200S 428/357 428/403 428/404 507/219 507/219S 507/269 507/269S 507/270 507/270S 507/271 507/907 507/924

Family:

Publication number	Publication date	Application number	Application date
AR071860 AA	20100721	AR2009P101818	20090520
CA2725088 AA	20101119	CA20092725088	20090519
CA2725088 C	20170328	CA20092725088	20090519
CN102099545 A	20110615	CN200980128414	20090519
CN102099545 B	20150610	CN200980128414	20090519
EA022413 B1	20151230	EA20100071331	20090519
EA201071331 A1	20110630	EA20100071331	20090519
EP2307666 A2	20110413	EP20090744812	20090519
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MX2010012463 A1	20101207	MX20100012463	20090519
US2009288820 AA	20091126	US20090468088	20090519
US2012181020 AA	20120719	US20120432015	20120328
US8168570 BB	20120501	US20090468088	20090519
US9803135 BB	20171031	US20120432015	20120328
WO10011402 A2	20100128	WO2009US44425	20090519
WO10011402 A3	20100910	WO2009US44425	20090519

Priority:

US20080054515P 20080520 US20080054622P 20080520 US20080120317P 20081205
US20090468088 20090519 WO2009US44425 20090519 US20120432015 20120328

Probable Assignee: HALLIBURTON CO

Assignee(s): (std): BARRON ANDREW R ; CHATTERJEE DILIP K ; COKER CHRISTOPHER E ; HALLIBURTON CO ; OXANE MATERIALS INC ; XIE YUMING ; SKALA ROBERT D ; HALLIBURTON ENERGY SERVICES INC ; OXANE MAT INC

Assignee(s): COMERICA BANK A TEXAS BANKING ASSOCIATION ; DELTA CENTAURI LLC

Inventor(s): (std): BARRON ANDREW R ; CHATTERJEE DILIP K ; COKER CHRISTOPHER E ; SKALA ROBERT D ; XIE YUMING ; YUMING XIE

Inventor(s): ANDREW R BARRON ; DILIP K CHATTERJEE ; ROBERT D SKALA ; CHRISTOPHER E COKER

Agent(s): DIMOCK STRATTON LLP; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAUESSER ANWALTSSOZIIETAET; SULEIMAN I AL AMMAR LAW OFFICE; KILYK AND BOWERSOX PLLC; CRAIG W; TUMEY LLP; KILYK LUKE A

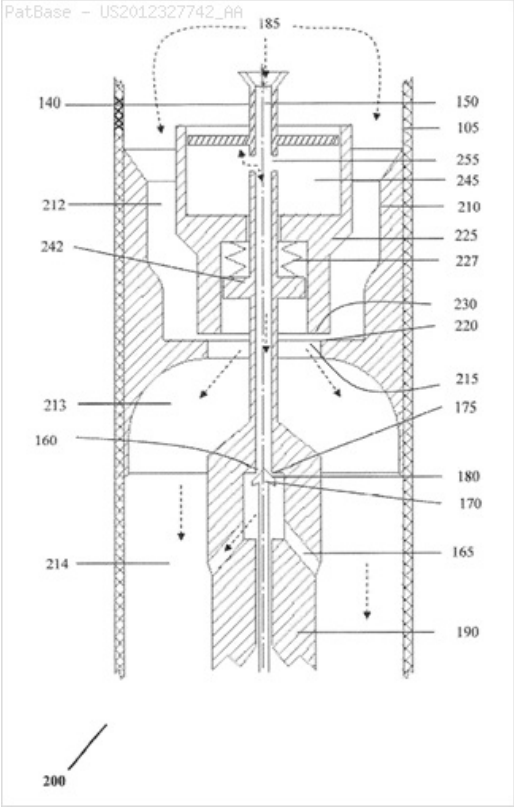
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Title: BOREHOLE FLOW MODULATOR AND INVERTED SEISMIC SOURCE GENERATING SYSTEM

Abstract: The present invention relates to the vertical seismic profiling (VSP) of geological formations in which profiling is used to obtain information for performing precise interpretations of geophysical seismic data and better understanding of geophysical information. The disclosure involves using a sound source for generating primary and secondary seismic pulses within well boreholes. The seismic profiling system obtains information regarding a geological formation traversed by a borehole with controllable downhole seismic pulse generators with drill string tool(s). The tool(s) have contact with and are coupled to the formation. A seismic pulsing device (SPD) is attached to a portion of the drill string and a valve controller is used to control opening and closing the valve causing high amplitude short duration ultra wide band pressure pulses, generating primary seismic waves sent into surrounding geological formations. This generates secondary seismic waves received that can be detected by geophones or similar devices.

Classifications:

International (IPC 8-9): E21B47/14 E21B47/18 G01V1/02
G01V1/137 G01V1/40 (Advanced/Invention)
CPC: G01V1/137 E21B47/182
European: E21B47/18C G01V1/137
US: 367/25



Family:

Publication number	Publication date	Application number	Application date
US2012327742 AA	20121227	US20100582447	20100302
US10001573 BB	20180619	US20100582447	20100302
WO11109014 A1	20110909	WO2010US25895	20100302

Priority:

US20100582447 20100302 WO2010US25895 20100302

Probable Assignee: TELEDRIILL INC

Assignee(s): (std): KUSKO DAVID JOHN ; LERNER DANIEL MAURICE ; TELEDRIILL INC ; VECSERI GABOR

Assignee(s): KUSKO JAMES

Inventor(s): (std): KUSKO DAVID JOHN ; LERNER DANIEL MAURICE ; VECSERI GABOR

Agent(s): GUERRY L; EPATENTMANAGERCOM; GRUNE GUERRY L

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

Title: **SYSTEM** FOR EXTRACTING HYDROCARBONS FROM UNDERGROUND GEOLOGICAL FORMATIONS AND METHODS THEREOF

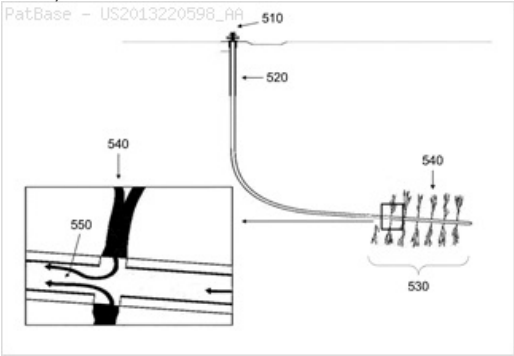
Abstract: An ultrasonic **fracking system** and methods of using the same to extract hydrocarbons from underground geological formations (e.g., oil shale, coal beds, etc.) are disclosed. The **system** includes piezoelectric **devices** that are used to produce ultrasonic mechanical vibrations and induce **fractures** in the geological formations. In one embodiment, a **system** for extracting underground hydrocarbons comprises a plurality of piezoelectric **devices** capable of producing mechanical **waves** sufficient to **fracture** oil shale and other geological formations, a **system** of delivery for innocuous proppants to create a path of least resistance for enhanced hydrocarbon flow, and a vacuum pump connected to the **fractures** created by the piezoelectric **devices** to assist in removing the hydrocarbons.

Classifications:

International (IPC 8-9): E21B28/00 E21B43/00 (Advanced/Invention)

CPC: E21B28/00 E21B43/26

US: 166/177.1 166/249



Family:

Publication number	Publication date	Application number	Application date
US2013220598 AA	20130829	US20120408898	20120229

Priority:

US20120408898 20120229

Probable Assignee:

MINDCAKE LLC

Assignee(s): (std):

BOYD STEPHEN A ; PALUMBO JOHN L

Assignee(s):

MINDCAKE LLC

Inventor(s): (std):

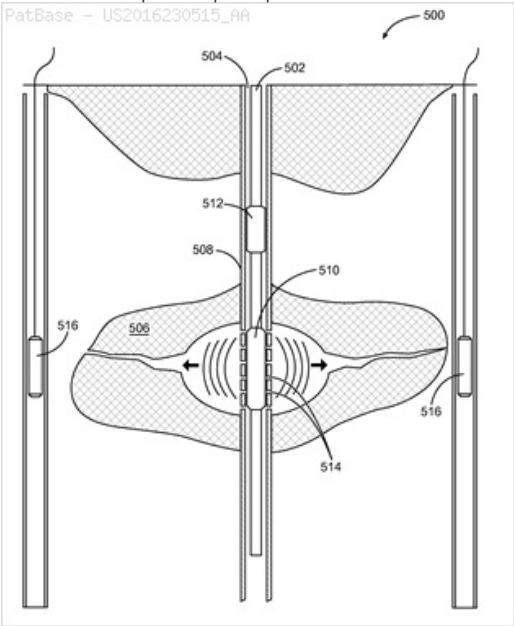
BOYD STEPHEN A ; PALUMBO JOHN L

Title: **SYSTEMS** AND METHODS FOR INCREASING **FRACTURE** COMPLEXITY USING ACOUSTIC ENERGY

Abstract: A **system** is configured to **fracture** a formation surrounding a subterranean wellbore. In one example, the **system** includes a tool **string** configured to be deployed in the wellbore, and an acoustic **pulse** generator connected to the tool **string** and configured to transmit acoustic **pressure pulses** into the formation. The acoustic **pulse** generator is configured to generate acoustic **pressure pulses** with a magnitude of at least 1000 pounds per square inch.

Classifications:

International (ipc 8-9): E21B43/00 E21B43/17 E21B43/26
E21B49/00 (Advanced/Invention)
CPC: E21B28/00 E21B49/00 E21B43/003 E21B43/26
US: 166/249



Family:

Publication number	Publication date	Application number	Application date
US2016230515 AA	20160811	US20130023024	20131216
WO15094159 A1	20150625	WO2013US75391	20131216

Priority:

US20130023024 20131216 WO2013US75391 20131216

Probable Assignee: HALLIBURTON CO

Assignee(s): (std): HALLIBURTON CO ; HALLIBURTON ENERGY SERVICES INC

Inventor(s): (std): PARKER MARK ALLEN ; HUNTER TIMOTHY HOLIMAN ; CAVENDER TRAVIS WAYNE

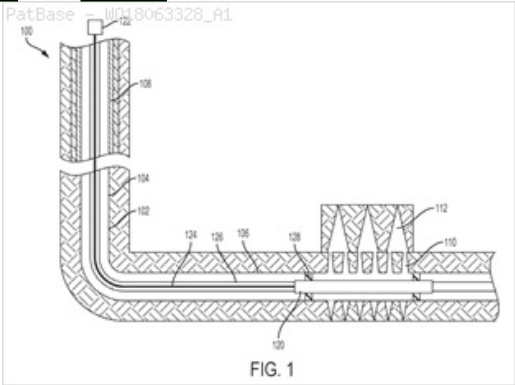
Agent(s): MADDEN ROBERT B ET AL

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 IR 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 PA PE PG PH PL PT QA RO RS RU RW SA 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: DETERMINING CHARACTERISTICS OF A FRACTURE

Abstract: A system for determining characteristics of a fracture can include electromagnetic sensors and a pressure sensor. The electromagnetic sensors can be positioned in a wellbore having a perforation to determine an amount of flow traversing the perforation into a fracture zone. The electromagnetic sensors can include a first electromagnetic sensor positioned in a first segment of the wellbore that is closer than the perforation to a surface of the wellbore. The electromagnetic sensors can also include a second electromagnetic sensor that is positioned in a second segment of the wellbore that is farther than the perforation from the surface of the wellbore. The pressure sensor can be positioned in the wellbore for detecting a pressure wave generated by the flow. The pressure wave and the amount of the flow traversing the perforation can be used to determine a characteristic of a fracture in the fracture zone.

Classifications:
International (IPC 8-9): E21B47/00 E21B47/06
G01V3/18 (Advanced/Invention)
CPC: E21B47/00 E21B47/06 G01V3/18



Family:

Publication number	Publication date	Application number	Application date
WO18063328 A1	20180405	WO2016US54786	20160930

Priority:
WO2016US54786 20160930

Probable Assignee: HALLIBURTON CO

Assignee(s): (std): HALLIBURTON CO ; HALLIBURTON ENERGY SERVICES INC

Inventor(s): (std): CHI WEI MING ; DELL DUSTIN MYRON ; EL DEMERDASH AHMED ; LEWIS BRYAN JOHN ; SURJAATMADJA JIM BASUKI

Agent(s): RUSSELL DEAN W ET AL

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 DJ 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 IR IS IT JP KE KG KM KN KP KR KW 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 PA PE PG PH PL PT QA RO RS RU RW SA 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