PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------------------|----------------|
| Xueying XIE | 12/11/2009 |
| Olurpop Rufus AYODELE | 12/10/2009 |
| Harold J VINEGAR | 01/08/2010 |
| Christopher Kelvin HARRIS | 02/26/2010 |
| John Michael KARANIKAS | 01/06/2010 |
| Chester Ledlie SANDBERG | 02/23/2010 |
| Dhruv ARORA | 01/12/2010 |

RECEIVING PARTY DATA

| Name: | Shell Oil Company |
|-------------------|-----------------------|
| Street Address: | P.O. Box 2463 |
| Internal Address: | Intellectual Property |
| City: | HOUSTON |
| State/Country: | TEXAS |
| Postal Code: | 77252-2463 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 12576815 |

CORRESPONDENCE DATA

501107096

Fax Number: (713)241-6617

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Email: ana.almaguer@shell.com

Correspondent Name: Shell Oil Company
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Address Line 2: Intellectual Property

Address Line 4: HOUSTON, TEXAS 77252-2463

ATTORNEY DOCKET NUMBER: TH3922 (US)

REEL: 024015 FRAME: 0741

PATENT

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| NAME OF SUBMITTER: | Ana M. Almaguer |
|--|-----------------|
| Total Attachments: 21 | |
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| source=TH3922ExecutedDeclaration#page2 | 20.tif |
| source=TH3922ExecutedDeclaration#page2 | 21.tif |

| I hereby declare that: Each inventor's residence, mailing address, and citizenship are as stated below next to their name I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is clis sought on the invention entitled: PERFORATED ELECTRICAL CONDUCTORS FOR THE FORMATIONS the specification of which is attached hereto unless the following box is checked: was filed on October 9. 2009 as United States Application Number or PCT International Application Number 12/576.815 and was amended on | EATING SUBSURFACE |
|---|---------------------------------|
| Each inventor's residence, mailing address, and citizenship are as stated below next to their name I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is clis sought on the invention entitled: PERFORATED ELECTRICAL CONDUCTORS FOR THE FORMATIONS the specification of which is attached hereto unless the following box is checked: was filed on October 9, 2009 as United States Application Number or PCT International Application Number 12/576.815 and was amended on | EATING SUBSURFACE |
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| was filed on October 9, 2009 as United States Application Number or PCT International Application Number 12/576.815 and was amended on | |
| Number 12/576.815 and was amended on | |
| I hereby state that I have reviewed and understand the contents of the above-identified specification, including any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, is part applications, material information which became available between the filing date of the prior application international filing date of the continuation-in-part application. I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or (f), or 365(b) of any foreign application plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least United States of America, listed below and have also identified below, by checking the box, any foreign applied or plant breeder's rights certificate(s), or any PCT international application having a filing date before that | g the claims, as amended by |
| I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, in part applications, material information which became available between the filing date of the prior application international filing date of the continuation-in-part application. I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or (f), or 365(b) of any foreign application plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least United States of America, listed below and have also identified below, by checking the box, any foreign applied or plant breeder's rights certificate(s), or any PCT international application having a filing date before that | ig the claims, as amended by |
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| I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or (f), or 365(b) of any foreign application plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least United States of America, listed below and have also identified below, by checking the box, any foreign application between rights certificate(s), or any PCT international application having a filing date before that | ion and the national or PCI |
| or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at lea United States of America, listed below and have also identified below, by checking the box, any foreign app or plant breeder's rights certificate(s), or any PCT international application having a filing date before that | tion(e) for notant inventor's |
| United States of America, listed below and have also identified below, by checking the box, any foreign app or plant breeder's rights certificate(s), or any PCT international application having a filing date before that | ist one country other than the |
| or plant breeder's rights certificate(s), or any PCT international application having a filing date before that | lication for patent, inventor's |
| | of the application on which |
| priority is claimed. | Y2. 1 . 1 |
| PRIOR FOREIGN APPLICATION (S) | Priority Not Claimed |
| APPLICATION NUMBER COUNTRY DAY/MONTH/YEAR FILED CERTIFIED COPY ATT | |
| YES NO | |
| APPLICATION NUMBER COUNTRY DAY/MONTH/YEAR FILED CERTIFIED COPY ATT YES NO [| |
| Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached heret | 3 . |
| I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below | w. |
| APPLICATION SERIAL NO FILING DATE | |
| 61/104,974 October 13, 2008 APPLICATION SERIAL NO FILING DATE | |
| APPLICATION SERIAL NO FILING DATE 61/168,498 April 10, 2009 | |

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT International application designating the United States, listed below and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

APPLICATION SERIAL NO FILING DATE

I hereby appoint:

OR

Practitioners associated with the Customer Number:

23632

Practitioner(s) named below:

| r racintoner(a) named below. | | | |
|------------------------------|----------------|---------------------|------------------|
| NAME | ATTORNEY/AGENT | REGISTRATION NUMBER | TELEPHONE NUMBER |
| Del S. Christensen | Attorney | 33,482 | (713) 241-3997 |
| NAME | ATTORNEY/AGENT | REGISTRATION NUMBER | TELEPHONE NUMBER |
| Richard F. Lemuth | Attorney | 30,081 | (713) 241-3716 |

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

SEND CORRESPONDENCE TO:

(Name) Del S. Christensen c/o Shell Oil Company Intellectual Property P.O. Box 2463 Houston, TX 77252-2463

| DECL | ARAT | ION t | ınder | 37 (| CFR : | 1.63 | AND | POV | VER | OF |
|------|------|------------|-------|------|-------|------|-------|-----|-----|----|
| ATTO | RNEY | FOR | PAT | ENT | API | PLIC | CATIO | ON | | |

ATTORNEY'S DOCKET NO TH3922(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| statements may jeopardize the validity of the application or any patent issued th | ereon. |
|---|--|
| FULL NAME OF SOLE OR FIRST INVENTOR (given name, family name) | |
| Xueying XIE | |
| INVENTOR'S SIGNATURE | DATE SIGNED |
| | Dec 11, 1007 |
| RESIDENCE Y | CITIZENSHIP |
| | P. R. China |
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| POST OFFICE ADDRESS 2727-West 18th St. 328, Houston, Texas 77008-USA 14438 | Rosalt La House TV 77077 1114 |
| ETET West tour St. 328, Houston, Texas 77008 CSA, 7736 | DUSTITUDISTON IX, 170 11, 11371 |
| OF COOKIN TOWN IN HOLD IF ANY (' | |
| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
| Oluropo Rufus AYODELE | DAME OLOMOTA |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| | OPPZEMELIE |
| RESIDENCE | CITIZENSHIP |
| 25102 Diamond Ranch Drive, Katy, Texas 77494 USA | Canada |
| POST OFFICE ADDRESS | |
| 25102 Diamond Ranch Drive, Katy, Texas 77494 USA | |
| | |
| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
| Harold J. VINEGAR | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| | |
| RESIDENCE | CITIZENSHIP |
| 4613 Laurel, Bellaire, TX 77401, USA | USA |
| POST OFFICE ADDRESS | |
| 4613 Laurel, Bellaire, TX 77401, USA | |
| | |
| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | AND DESCRIPTION OF THE PARTY OF |
| Christopher Kelvin HARRIS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| BECOMB RIVERIOR S SIGNIFORD | |
| RESIDENCE | CITIZENSHIP |
| 2 Varbay Place NW, Calgary AB T3A 0C8, Canada | Great Britain |
| POST OFFICE ADDRESS | |
| 2 Varbay Place NW, Calgary AB T3A 0C8, Canada | |
| 2 Varbay Fract IVV, Cargary AD 15A 000, Canada | - Miles William Control of the Contr |
| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | Least at the second sec |
| John Michael KARANIKAS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| SECOND MARKIOK 2 SIGNATURE | DATE SIGNED |
| DESIDENCE | CITIZENSHIP |
| RESIDENCE | Greece |
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| POST OFFICE ADDRESS | |
| 1005A Crocker St. Houston, Texas 77019 USA | |

| DECLARATION under 37 CFR 1.63 AND POWER OF | ATTORNEY'S DOCKET NO |
|--|----------------------|
| | TH3922(US) |
| ATTORNEY FOR PATENT APPLICATION | ` ' |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| FULL NAME OF SECOND JOINT INVENTOR. IF ANY (given name, family name) Chester Ledlie SANDBERG | |
|---|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
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| POST OFFICE ADDRESS | |
| 758 Torreya Ct, Palo Alto, California 94303 USA | |

| Dhruv ARORA | |
|--|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
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| POST OFFICE ADDRESS | 4 |
| 7675 Phoenix Drive, Apt. 836, Houston, Texas 77030 USA | |

| DECLARATION u | ider 37 CFR 1 | .63 AND POWE | R OF | | 1 | Y'S DOCKET NO |
|---|----------------------|--|-------------------------|------------------------|----------------|-------------------------|
| ATTORNEY FOR I | PATENT APP | LICATION | | | TH3922(US | ·) |
| l hereby declare that: | | | | | | |
| Each inventor's residence, | mailing address, a | nd citizenship are as | stated below next t | to their name. | | |
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| I believe the inventor(s) na is sought on the invent | | | | | | |
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| | | ted States Applicatio | | • • | ition | |
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| I hereby state that I have re | | rstand the contents of | the above-identifi | ed specification, incl | uding the clai | ms, as amended by |
| any amendment referred to | above. | | | | | |
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| United States of America, | | | | | | |
| or plant breeder's rights co | runcate(s), or an | y PC1 international | application having | a nung date before | that of the ap | pucation on which |
| priority is claimed. | | | | | | Datasies |
| PRIOR FOREIGN APPLIC | ATION (S) | | | | | Priority Not Claimed |
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| APPLICATION NUMBER | COUNTRY | DAY/MONTH/YEAR | FILED | CERTIFIED COPY | ATTACHED | |
| | ! | | | YES N | | |
| Additional foreign appli | cation numbers are ! | licted on a cumplementa | l oriority data sheet l | 2TO/SR/02R attached i | ieneto. | |
| | radon nambers are i | nisted on a supplementa | priority data ancer i | TOTODIOZD atmones, | RICIO | |
| I hereby claim the benefit t | inder 35 H.S.C. 8 | 119(e) of any United | States provisional | application(s) listed | helow. | |
| APPLICATION SERIAL NO | | 115(0) 01 1111) 0111100 | | FILING DAT | | |
| 61/104,974 | | | | October 13, 2 | 008 | |
| APPLICATION SERIAL NO | | FILING DATE | | | | |
| 61/168,498 | | | | April 10, 20 | 09 | |
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| I hereby claim the benefit | under 35 U.S.C. | § 120 of any United | States application | i(s) or § 365(c) of a | ny PCT Intern | ational application |
| designating the United Stat | | | | | | |
| prior United States or PCT | | | | | | |
| duty to disclose informatio | | | | | available bet | ween the tiling date |
| of the prior application and | the national or PC | I International film | g date of this appli | cation. FILING DAT | | |
| APPLICATION SERIAL NO. | | | | PILING DATI | E. | |
| | | ······································ | I | | ······ | |
| I hereby appoint: | | | | | | |
| Practitioners associated wi | ith the Customer N | Jumber | 23632 | | | |
| OR | | | | | | |
| Practitioner(s) named belo | w: | | | | | |
| NAME | | DRNEY/AGENT | REGISTRATIO | N NUMBER | TELEPHONE 1 | ₹UMBER |
| Del S. Christensen | | Attorney | 33,48 | | (713) 241- | |
| NAME | ATTO | DRNEY/AGENT | REGISTRATIO | N NUMBER | TELEPHONE ? | UMBER |

Attorney as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

30,081

SEND CORRESPONDENCE TO:

(Name) Del S. Christensen c/o Shell Oil Company Intellectual Property P.O. Box 2463 Houston, TX 77252-2463

> **PATENT REEL: 024015 FRAME: 0746**

(713) 241-3716

ATTORNEY'S DOCKET NO TH3923(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| FULL NAME OF SOLB OR FIRST INVENTOR (given name, family name) | |
|---|-------------|
| Xueying XIE | |
| INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
| 2727 West 18th St. 328, Houston, Texas 77008 USA | P. R. China |
| POST OFFICE ADDRESS | |
| 2727 West 18th St. 328, Houston, Texas 77008 USA | |

| Oluropo Rufus AYODELE SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
|---|------------------|
| SECOND INVENTOR 3 SIGNATURE | December 10,2009 |
| RESIDENCE | CITIZBNSHIP |
| 25102 Diamond Ranch Drive, Katy, Texas 77494 USA | Canada |

| ULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
|---|--|
| Harold J. VINEGAR | - Alexander - Alex |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| | |
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| POST OFFICE ADDRESS | |
| 4613 Laurel, Bellaire, TX 77401, USA | |

| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
|--|---------------|
| Christopher Kelvin HARRIS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
|--|-------------|
| John Michael KARANIKAS second inventor's Signature | DATE SIGNED |
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| POST OFFICE ADDRESS 1005A Crocker St. Houston, Texas 77019 USA | |

| DECLARATION under 37 CFR 1.63 AND POWER OF | ATTORNEY'S DOCKET NO |
|--|----------------------|
| ATTORNEY FOR PATENT APPLICATION | TH3922(US) |

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| Chester Ledlie SANDBERG | |
|---|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) Dhruv ARORA | |
|---|---------------------------------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
| 7675 Phoenix Drive, Apt. 836, Houston, Texas 77030 USA | India |
| POST OFFICE ADDRESS | i i i i i i i i i i i i i i i i i i i |
| 7675 Phoenix Drive, Apt. 836, Houston, Texas 77030 USA | |

| DECLARATION under 37 CFR | | R OF | | ATTORNE TH3922(US | Y'S DOCKET NO |
|--|--|---|--|--|--|
| ATTORNEY FOR PATENT AP | PLICATION | onseiden wennet hille win von han den ermen men wennenlind vor den Milliands den Millia | y | | |
| I hereby declare that: Each inventor's residence, mailing address, | and citizenship are as | stated below next t | o their name. | | |
| I believe the inventor(s) named below to be is sought on the invention entitled: | the original and first i | nventor(s) of the s | ubject matter which i | s claimed and TREATING | for which a patent |
| FORMATIONS the specification of which | is attached hereto unle | ss the following b | ox is checked: | | |
| was filed on October 9, 2009 as U Number 12/576,815 and was amen I hereby state that I have reviewed and unc | nded on | (if applicabl | e) | | ms, as amended by |
| any amendment referred to above | | | | | |
| I acknowledge the duty to disclose informa part applications, material information whi international filing date of the continuation | ich became available b -in-part application. | etween the filing of | late of the prior appl | ication and th | ne national or PCT |
| I hereby claim foreign priority benefits und or plant breeder's rights certificate(s), or 3: United States of America, listed below and or plant breeder's rights certificate(s), or a | 65(a) of any PCT intern have also identified be | national application low, by checking | n which designated at the box, any foreign: | licast one cou application fo | intry other than the r patent, inventor's |
| priority is claimed. | | | | | Priority Not Clainted |
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| APPLICATION NUMBER COUNTRY | DAY/MONTH/YEAR | RFILED | CERTIFIED COPY A | | |
| Additional foreign application numbers ar | e listed on a supplemental | priority data sheet l | PTO/SB/02B attached h | ereto. | |
| I hereby claim the benefit under 35 U.S.C. | § 119(e) of any United | States provisional | application(s) listed | below. | |
| APPLICATION SERIAL NO | | | FILING DAT | E | |
| 61/104,974 | | October 13, 2008 FILING DATE | | | |
| APPLICATION SERIAL NO 61/168,498 | | April 10, 2009 | | | |
| I hereby claim the benefit under 35 U S C designating the United States, listed below prior United States or PCT International a duty to disclose information which is mate of the prior application and the national or | and insofar as the subj oplication in the manne rial to patentability as d | ect matter of each r provided by the lefined in 37 CFR | of the claims of this a first paragraph of 35 § 1.56 which became cation. | application is U.S.C. § 112. available bet | not disclosed in the , I acknowledge the |
| APPLICATION SERIAL NO. | | | FILING DATI | ? | |
| I hereby appoint: Practitioners associated with the Customer OR Practitioner(s) named below: | Number: | 23632 | | | |
| NAME AT | TORNEY/AGENT | REGISTRATIO | | TELEPHONE I | |
| Del S. Christensen | Attorney | 33,4 REGISTRATIO | | (713) 241- TELEPHONE | |
| NAME AT Richard F. Lemuth | TORNEY/AGENT Attorney | 30,0 | | (713) 241- | 1 |

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

SEND CORRESPONDENCE TO:

(Name) Del S. Christensen c/o Shell Oil Company Intellectual Property P.O. Box 2463 Houston, TX 77252-2463

ATTORNEY'S DOCKET NO. TH3922(US)

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| TULL NAME OF SOLE OR FIRST INVENTOR (given name, family pame) Xueying XIE | |
|--|-------------|
| INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
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| POST OFFICE ADDRESS | |
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| FULL NAME OF SECOND JOINT INVENTOR. IF ANY (given name, family name) | |
|--|-------------|
| Oluropo Rufus AYODELE | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| | CITIZENSHIP |
| RESIDENCE | |
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| POST OFFICE ADDRESS | |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
|--|-------------|
| Harold J. VINEGAR | |
| SECOND INVENTIONS SIGNATURE | DAȚE SIGNED |
| Harold J. Vinegar | 1/8/10 |
| KESIDENCE () | CITIZENSHIP |
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| POST OFFICE ADDRESS | |
| 4613 Laurel, Bellaire, TX 77401, USA | |

| ristopher Kelvin HARRIS | |
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| IND INVENTOR'S SIGNATURE | DATE SIGNED |
| DENCE | CITIZENSHIP |
| arbay Place NW, Calgary AB T3A 0C8, Canada | Great Britain |
| OFFICE ADDRESS | |
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| ULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) ohn Michael KARANIKAS | |
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| ECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
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| POST OFFICE ADDRESS | |
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ATTORNEY'S DOCKET NO TH3922(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name. family name) Chester Ledlie SANDBERG | |
|---|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
| 758 Torreya Ct, Palo Alto, California 94303 USA | USA |
| POST OFFICE ADDRESS 758 Torreya Ct, Palo Alto, California 94303 USA | · |

| Dhruv ARORA | |
|--|--------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
| 7675 Phoenix Drive, Apt. 836, Houston, Texas 77030 USA | <u>India</u> |

| DECLARATION und | der 37 CFR 1 | .63 AND POWE | R OF | | ATTORNE TH3922(US | Y'S DOCKET NO. |
|---|--|---|---|---|--|--|
| I hereby declare that: Each inventor's residence, n | | | tated below next t | o their name. | - HUW BIRDAMANA | |
| I believe the inventor(s) nan is sought on the inventi | on entitled: Pl | ERFORATED ELE | CTRICAL CON | DUCTORS FOR | s claimed and TREATING | for which a patent SUBSURFACE |
| FORMATIONS the specifi | cation of which i | s attached hereto unle | ss the following b | ox is checked: | | • |
| was filed on Octobe Number 12/576,81. I hereby state that I have reany amendment referred to a | 5 and was amend viewed and unde | ited States Application led on rstand the contents of | (if applicab) | (e). | | ms, as amended by |
| I acknowledge the duty to dipart applications, material international filing date of the | nformation which | h became available b | etween the filing | date of the prior appl | lication and th | he national or PCT |
| I hereby claim foreign prior or plant breeder's rights cer United States of America, li or plant breeder's rights cer | tificate(s), or 36: sted below and i | 5(a) of any PCT interr | iational applicatio low, by checking | n which designated a the box, any foreign | t least one cot application fo | intry other than the repatent, inventor's |
| priority is claimed. | | | | | | Priority |
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| APPLICATION NUMBER | COUNTRY | DAY/MONTH/YEAR | FILED | CERTIFIED COPY A | TTACHED | |
| Additional foreign applic | ation numbers are | listed on a supplemental | priority data sheet | PTO/SB/02B attached h | ereto. | |
| I hereby claim the benefit u | nder 35 II C.C. S | 110(e) of any United | States provisional | application(s) listed | below. | |
| APPLICATION SERIAL NO. | 1001 33 0,5.0. 8 | Try(o) or any onnou | D | FILING DAT | В | TOWNS TO SEE |
| 61/104,974 | | | | October 13, 2 | 008 | |
| APPLICATION SERIAL NO. 61/168,498 | | | | FILING DAT April 10, 20 | | |
| I hereby claim the benefit of designating the United State prior United States or PCT duty to disclose information of the prior application and | es, listed below a International app which is materi | nd insofar as the subjection in the manner of the patentability as d | ect matter of each r provided by the efined in 37 CFR | of the claims of this a first paragraph of 35 § 1.56 which became | ipplication is U.S.C. § 112 | not disclosed in the . I acknowledge the |
| APPLICATION SERIAL NO. | the hational of c | C1 International many | s date of this appli | FILING DATI | 3 - 2011 (114) | |
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| I hereby appoint: Practitioners associated wit OR | | Number: | 23632 | | | |
| Practitioner(s) named below | V: | | | | PROPERTY AND A PARTY OF THE PAR | STETING TO THE STATE OF THE STA |
| NAME Del S. Christensen | TTA | ORNEY/AGENT Attorney | REGISTRATIO 33.4 | | TELEPHONE (713) 241 | |

30,081 Attorney as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Attorney

ATTORNEY/AGENT

33,482

REGISTRATION NUMBER

SEND CORRESPONDENCE TO:

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PATENT REEL: 024015 FRAME: 0752

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ATTORNEY'S DOCKET NO. TH3922(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| tatements may jeopardize the validity of the application or any patent issued thereon. | |
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| FULL NAME OF SOLE OR FIRST INVENTOR (given name, family name) | |
| Xueying XIE | DATE SIGNED |
| NVENTOR'S SIGNATURE | 525.5 |
| | CITIZENSHIP |
| RESIDENCE | P. R. China |
| 2727 West 18th St. 328, Houston, Texas 77008 USA | I III |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
| Oluropo Rufus AYODELE | DATE SIGNED |
| SECOND INVENTOR'S SIGNATURE | |
| | CITIZENSHIP |
| RESIDENCE | Canada |
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| POST OFFICE ADDRESS 25102 Diamond Ranch Drive, Katy, Texas 77494 USA | |
| 25102 Diamond Ranch Drive, Katy, Texas 17404 ODA | |
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| FULL NAME OF SECOND JOINT INVENTOR. IF ANY (given name, family name) | |
| Harold J. VINEGAR | DATE SIGNED |
| SECOND INVENTOR'S SIGNATURE | |
| | CITIZENSHIP |
| RESIDENCE | USA |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
| Christopher Kelvin HARRIS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| | |
| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
| John Michael KARANIKAS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| RESIDENCE | CITIZENSHIP |
| 1005A Crocker St. Houston, Texas 77019 USA | Greece |
| POST OFFICE ADDRESS | |

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|--|--------------------|
| Chester Ledlie SANDBERG | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| | |
| RESIDENCE 758 Torreya Ct, Palo Alto, California 94303 USA | CITIZENSHIP USA |
| POST OFFICE ADDRESS 758 Torreya Ct, Palo Alto, California 94303 USA | |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) Dhruy ARORA | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| | | | | Page 1 of 3 ATTORNEY'S DOCKET NO. |
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| | | .63 AND POWER OF | | TH3922(US) |
| ATTORNEY FOR P | ATENT APP | LICATION | | |
| hereby declare that: | *** | 1 22 62 62 | | |
| Each inventor's residence, r | nailing address, a | and citizenship are as stated below no | ext to their name. | |
| is sought on the inventi | on entitled: Pl | the original and first inventor(s) of the ERFORATED ELECTRICAL Constitution of the strategies of the s | CONDUCTORS FOR | s claimed and for which a patent TREATING SUBSURFACE |
| Number 12/576.81 | <u>5</u> and was amend viewed and unde | ited States Application Number or Poled on(if application the contents of the above-identity | cable). | |
| part applications, material i international filing date of t | nformation which he continuation-i | | ng date of the prior appl | ication and the national or PCT |
| or plant breeder's rights cer United States of America, l | tificate(s), or 36: isted below and l | er 35 U S C. § 119(a)-(d) or (f), or 35(a) of any PCT international application also identified below, by check by PCT international application has | ation which designated at ing the box, any foreign a | least one country other than the application for patent, inventor's |
| • | | | | Priority |
| PRIOR FOREIGN APPLIC | | | CONTINUE CONV. | Not Claimed |
| APPLICATION NUMBER | COUNTRY | DAY/MONTH/YEAR FILED | CERTIFIED COPY A YES ☐ NO | |
| APPLICATION NUMBER | COUNTRY | DAY/MONTH/YEAR FILED | CERTIFIED COPY A | |
| Additional foreign applic | cation numbers are | listed on a supplemental priority data sh | eet PTO/SB/02B attached h | ereto |
| I haraby claim the benefit II | nder35IISC 8 | 119(e) of any United States provision | annl application(s) listed l | nelow. |
| APPLICATION SERIAL NO | 11001 33 0.0.0. 3 | 113(e) of any clinical states provide | FILING DAT | Ē |
| 61/104,974 | | | October 13, 20 | |
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| APPLICATION SERIAL NO 61/168,498 I hereby claim the benefit | | § 120 of any United States applicand insofar as the subject matter of each | FILING DATE April 10, 200 ation(s) or § 365(c) of an | E 199 19 PCT International application |

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT International application designating the United States, listed below and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

APPLICATION SERIAL NO FILING DATE

I hereby appoint:

Practitioners associated with the Customer Number:

23632

OR

Practitioner(s) named below:

| NAME | ATTORNEY/AGENT | REGISTRATION NUMBER | TELEPHONE NUMBER |
|--------------------|----------------|---------------------|------------------|
| Del S. Christensen | Attorney | 33,482 | (713) 241-3997 |
| NAME | ATTORNEY/AGENT | REGISTRATION NUMBER | TELEPHONE NUMBER |
| Richard F. Lemuth | Attorney | 180,08 | (713) 241-3716 |

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith

SEND CORRESPONDENCE TO:

(Name) Del S. Christensen c/o Shell Oil Company Intellectual Property P.O. Box 2463 Houston, TX 77252-2463

ATTORNEY'S DOCKET NO TH3922(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| FULL NAME OF SOLE OR FIRST INVENTOR (given name, family name) | |
|--|-------------|
| Xueying XIE | |
| INVENTOR'S SIGNATURE | DATE SIGNED |
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| | |
| FULL NAME OF SECOND JOINT INVENTOR. IF ANY (given name, family name) | |
| Oluropo Rufus AYODELE | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
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| FULL NAME OF SECOND JOINT INVENTOR. IF ANY (given name, family name) Harold J. VINEGAR | |
|---|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
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| Christopher Kelvin HARRIS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY given name, family name) | |
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| John Michael KARANIKAS | |
| SECOND INVENTOR'S SIGNATURE JULY HICKORY JULY | Junuary 6, 2010 |
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| POST OFFICE ADDRESS | |
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| DECLARATION under 37 CFR 1.63 AND POWER OF | ATTORNEY'S DOCKET NO | |
| ATTORNEY FOR PATENT APPLICATION | TH3922(US) | |
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|---|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
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| POST OFFICE ADDRESS 758 Torreya Ct, Palo Alto, California 94303 USA | · |

| Dhruy ARORA | |
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| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHIP |
| 7675 Phoenix Drive, Apt. 836, Houston, Texas 77030 USA | India |

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| | | | | | | Page 1 of |
| DECLARATION u | nder 37 CFR | 1.63 AND POWI | ER OF | | ATTORNEY'S | DOCKET NO |
| ATTORNEY FOR | PATENT API | PLICATION | | | `H3922(US) | |
| I hereby declare that: Each inventor's residence, | mailing address, | and citizenship are as | stated below next | to their name. | | |
| I believe the inventor(s) no is sought on the inven FORMATIONS the speci | tion entitled: P | ERFORATED ELI | ECTRICAL CO | NDUCTORS FOR T | laimed and for REATING S | which a pate UBSURFAC |
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| I hereby state that I have r any amendment referred to | eviewed and unde | erstand the contents o | f the above-identi | fied specification, includi | ng the claims, | as amended b |
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| or plant breeder's rights co | nny benents und stificate(s), or 36 | 5(a) of any PCT inter | p-(a) or (1), or 500 mational applicati | o(b) of any foreign applic on which designated at le | ation(s) for pa- asi one country | tent, inventor |
| United States of America, | listed below and I | have also identified b | elow, by checking | the box, any forcign app | lication for pa | tent, inventor |
| or plant breeder's rights co | ertificate(s), or a | ry PCT international | application havin | g a filing date before tha | t of the applic | ation on whic |
| priority is claimed. | | | | | n | , |
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| I hereby claim the benefit t | inder 35 U.S.C. § | 119(e) of any United | States provisiona | | ow. | |
| APPLICATION SERIAL NO. 61/104,974 | | | | FILING DATE | | |
| APPLICATION SERIAL NO. | | | | October 13, 2008 FILING DATE | 1 | |
| 61/168,498 | | | | April 10, 2009 | | |
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| I hereby claim the benefit | under 35 U.S.C. | § 120 of any United | States applicatio | n(s) or § 365(c) of any I | CT Internatio | nni applicatio |
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| prior United States or PCT duty to disclose information | imernanonar apş ivətəri: | opention in the insume | a provided by tile | S. 1.56 tubials become our | n.C. 9 112, 136 | Knowledge in |
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| I hereby appoint: Practitioners associated wi | th the Customer N | Jumber | 12622 | | | |
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OR.

Practitioner(s) named below:

| Del S. Christensen Attorney 33,482 (713) 241-3997 NAME ATTORNEY/AGENT REGISTRATION NUMBER TELEPHONE NUMBER Richard F. Lemuth Attorney 30.081 (713) 241-3716 | NAME | ATTORNEY/AGENT | REGISTRATION NUMBER | TELEPHONE NUMBER |
|---|--------------------|----------------|---------------------|------------------|
| NAME ATTORNEY/AGENT REGISTRATION NUMBER TELEPHONE NUMBER | Del S. Christensen | Altomoy | | (713) 241-3997 |
| Richard F. Lamuth Attornov 90.081 (713) 241-3716 | NAME | ATTORNEY/AGENT | | TELEPHONE NUMBER |
| | Richard F. Lemuth | Attornoy | 30,081 | (713) 241-3716 |

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

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1005A Crocker St. Houston, Texas 77019 USA

ATTORNEY S DUCKET NO TH3922(US)

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| FULL NAME OF SOLE OR FIRST INVENTOR (given name, family name) | |
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| Xueying XIE | |
| inventor's signature | DATE SIGNED |
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| Harold J. VINEGAR | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| SECOND INVENTOR S SIGNATURE | 2.0.2 |
| RESIDENCE | CITIZENSHIP |
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| POST OFFICE ADDRESS | |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) | |
| Christopher Kelvin HARRIS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| John Michael KARANIKAS | |
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
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| RESIDENCE | CITIZENSHIP |
| RESIDENCE 1005A Crocker St. Houston, Texas 77019 USA | CITIZENSHIP Greece |

Page 3 of 3

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| DECLARATION under 37 CFR 1.63 AND POWER OF | ATTORNEY'S DOCKET NO. |
| DECLARATION under 57 CFR 1.05 AND FOWER OF | TH3922(US) |
| ATTORNEY FOR PATENT APPLICATION | 1113922(03) |
| ACTORIST TORTHER METALENCE | <u> </u> |

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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family name) Chester Ledie SANDBERG/ | 1-23-2010 |
|---|-------------|
| SECOND INVENTOR SIGNATURE | DATE SIGNED |
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| POST OFFICE ADDRESS | Table 1 |
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| FULL NAME OF SECOND JOINT INVENTOR, IF ANY (given name, family nume) Dhruv ARORA | |
|---|-------------|
| SECOND INVENTOR'S SIGNATURE | DATE SIGNED |
| RESIDENCE | CITIZENSHP |
| 7675 Phoenix Drive, Apt. 836, Houston, Texas 77030 USA | India |
| POST OFFICE ADDRESS | |
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| La | | | | | | Page 1 of 3 |
|---|-----------------------------------|--------------------------|--|-------------------------|----------------------|----------------------|
| DECLARATION w | | | ER OF | | ATTORNE TH3922(US | BY'S DOCKET NO |
| ATTORNEY FOR I | PATENT APP | LICATION | | | 1113922(0) | " |
| I hereby declare that: | | | | | | |
| Each inventor's residence, | mailing address, a | ınd citizenship are a | s stated below next | to their name. | | |
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| is sought on the inven FORMATIONS the speci | | | | | IREATING | T SUBSURFACE |
| r continuations me sheet | iteation of which | is attached Helefo (ii) | ress the following o | OX 15 CHECKED. | | |
| | 3 . 0 0000 . YY | | ar i nom | T .T 1.4 %1 | . • | |
| was filed on October 9, 2009 as United States Application Number or PCT International Application Number 12/576.815 and was amended on | | | | | | |
| Number 12/5/0.8 | 15 and was amend | ied on | (ii applicad | le). | | |
| I hereby state that I have reany amendment referred to | | isiano ine contents (| or the above-identifi | ed specification, incli | name the clui | ms, as amended by |
| any amendment referred to | NUUVG. | | | | | |
| I acknowledge the duty to | disclose informati | on which is material | to natentahility og a | defined in 37 CER 1.5 | including | for continuation-in- |
| part applications, material | information which | h became available | hetween the filing | date of the prior appl | ication and the | he national or PCT |
| international filing date of | | | comedit me imag | amo or the prior oppi | delication and the | to national of 1 C I |
| I hereby claim foreign price | | | 1.(d) or (f) or 3651 | h) of any foreign por | lication(r) fo | r natent loventor's |
| or plant breeder's rights co | rtificate(s), or 36: | i(a) of any PCT into | mational applicatio | n which designated at | least one con | aniry other than the |
| United States of America, | | | | | | |
| or plant breeder's rights of | | | | | | |
| priority is claimed. | | ~ | | J | - | • |
| | | | | | | Priority |
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| APPLICATION NUMBER | COUNTRY | DAY/MONTH/YEA | PELED | YES NO CERTIFIED COPY A | | |
| THE TAX OF | 000 | | A Carl And And | YES NO | | |
| | | <u></u> | | | | |
| Additional foreign application | cution numbers are | isted on a supplement | ai priority data sheet i | 10/SB/02B attached h | ereto | |
| I hereby claim the benefit u | under 35 II C C S | 110(a) of any Unite | d States provisional | annlication(s) listed b | aslow | |
| APPLICATION SERIAL NO. | 1100CL 22 0.0.C. 8 | 113(e) Of any Office | 1 States provisional | FILING DATI | | |
| 61/1.04 ₁ 974 | | | October 13, 2008 | | | |
| APPLICATION SERIAL NO | | | FILING DATE | | | |
| 61/168,498 | | | April 10, 2009 | | | |
| | | | | | | |
| I hereby claim the benefit | under 35 U.S.C. | § 120 of any United | 1 States application | (s) or § 365(c) of an | y PCT Intern | intional application |
| designating the United States, listed below and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the | | | | | | |
| duty to disclose information | | | | | | |
| of the prior application and | i willon to material the patients | T to patentational filit | ucinicu in 57 CPA.; ur data of this appli | ation | athinole bei | reen me ming date |
| APPLICATION SERIAL NO | THO HAHOMAN O. 1 | > | IE auto at title uppir | FILING DATE | | |
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| I hereby appoint: | | | | | | |
| Practitioners associated wi | th the Customer N | lumber: | 23632 | | | |
| OR | | <u> </u> | | | | |
| Practitioner(s) named belov | | RNEY/AGENT | REGISTRATIO | TATTA (DEO | TELEPHONE N | II TO A D. T. D. |
| Dol S. Christenson | | Attomey | 33,48 | | (713) 241- | |
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| as my/our attorney(s) or ag | | e the application ide | ntified above, and t | o transact all business | s in the Unite | d States Patent and |
| Trademark Office connecte | | | | | | |
| SEND CORRESPON | DENCE TO: | | | | | |

(Name) Del S. Christensen c/o Shell Oil Company Intellectual Property P.O. Box 2463 Houston, TX 77252-2463

ATTURNEY S DOCKET NO TH3922(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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DECLARATION under 37 CFR 1.63 AND POWER OF
ATTORNEY FOR PATENT APPLICATION

Page 3 of 3

ATTORNEY'S DOCKET NO.
TH3922(US)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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PATENT REEL: 024015 FRAME: 0763

RECORDED: 03/02/2010