

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

| SUBMISSION TYPE:  | NEW ASSIGNMENT                   |               |                |             |              |              |            |
|---|----------------------------------|---------------|----------------|-------------|--------------|--------------|------------|
| NATURE OF CONVEYANCE:   | ASSIGNMENT                       |               |                |             |              |              |            |
| CONVEYING PARTY DATA  |                                  |               |                |             |              |              |            |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Cyrus Irani</td> <td>01/03/2013</td> </tr> <tr> <td>Hendrik Kool</td> <td>01/03/2013</td> </tr> </tbody> </table>                                 |                                  | Name          | Execution Date | Cyrus Irani | 01/03/2013   | Hendrik Kool | 01/03/2013 |
| Name  | Execution Date                   |               |                |             |              |              |            |
| Cyrus Irani   | 01/03/2013                       |               |                |             |              |              |            |
| Hendrik Kool  | 01/03/2013                       |               |                |             |              |              |            |
| RECEIVING PARTY DATA  |                                  |               |                |             |              |              |            |
| Name:   | Halliburton Energy Services Inc. |               |                |             |              |              |            |
| Street Address:   | 10200 Bellaire Blvd.             |               |                |             |              |              |            |
| City:   | Houston                          |               |                |             |              |              |            |
| State/Country:  | TEXAS                            |               |                |             |              |              |            |
| Postal Code:  | 77072                            |               |                |             |              |              |            |
| PROPERTY NUMBERS Total: 1   |                                  |               |                |             |              |              |            |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>PCT Number:</td> <td>US2012071745</td> </tr> </tbody> </table>   |                                  | Property Type | Number         | PCT Number: | US2012071745 |              |            |
| Property Type   | Number                           |               |                |             |              |              |            |
| PCT Number:   | US2012071745                     |               |                |             |              |              |            |
| CORRESPONDENCE DATA   |                                  |               |                |             |              |              |            |
| Fax Number:   | 2142000853                       |               |                |             |              |              |            |
| <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>  |                                  |               |                |             |              |              |            |
| Phone:  | 214-651-5000                     |               |                |             |              |              |            |
| Email:  | ipdocketing@haynesboone.com      |               |                |             |              |              |            |
| Correspondent Name:   | Haynes and Boone, LLP            |               |                |             |              |              |            |
| Address Line 1:   | 2323 Victory Avenue, Suite 700   |               |                |             |              |              |            |
| Address Line 2:   | IP Section                       |               |                |             |              |              |            |
| Address Line 4:   | Dallas, TEXAS 75219              |               |                |             |              |              |            |
| ATTORNEY DOCKET NUMBER:   | 7523.495                         |               |                |             |              |              |            |
| NAME OF SUBMITTER:  | Jade O. Laye                     |               |                |             |              |              |            |
| <p>Total Attachments: 5</p> <p>source=7523_495_Assignment#page1.tif</p> <p>source=7523_495_Assignment#page2.tif</p> <p>source=7523_495_Assignment#page3.tif</p> <p>source=7523_495_Assignment#page4.tif</p> <p>source=7523_495_Assignment#page5.tif</p> |                                  |               |                |             |              |              |            |

OP \$40.00 US2012071745

### ASSIGNMENT

WHEREAS, Cyrus Irani (an "ASSIGNOR"), a citizen of the United States of America, residing at 7718 Stonesdale Drive, Houston, Texas 77095, has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

WHEREAS, Kendrik Kool (an "ASSIGNOR"), a citizen of the United States of America, residing at 8992 Argonne Stone Lane, Conroe, Montgomery, Texas 77302, has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

### OPTICAL DEVICE AND METHOD FOR PREDICTING AND MITIGATING HYDRATE FORMATION USING AN INTEGRATED COMPUTATION ELEMENT

filed on December 27, 2012 and assigned application number PCT/US2012/71745 (collectively, "Intellectual Property").

WHEREAS, each ASSIGNOR is desirous of assigning all of his right in the Intellectual Property to Halliburton Energy Services Inc. ("ASSIGNEE"), a corporation, doing business at 10200 Bellaire Blvd., Houston, Texas 77072, United States of America.

**NOW, THEREFORE, subject to the terms, conditions, covenants and provisions of this Assignment, and in consideration of Ten Dollars (\$10.00) and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each ASSIGNOR, the parties hereto, intending legally to be bound, agree as follows:**

Each ASSIGNOR hereby sells, assigns and transfers to ASSIGNEE, its successors and assigns, said ASSIGNOR'S entire right, title and interest in the Intellectual Property, including, without limitation, (i) all United States and foreign rights therein, whether patentable or not, and in and to aforesaid patents, patent applications and any divisions or continuations thereof, and any patents or similar registrations obtained for the said Intellectual Property in the United States and foreign countries, or issuing out of said application or any such division or continuation thereof, and any reissues or extensions of any such patents and (ii) all causes of action, past, present, and future, for infringement, unfair competition or otherwise with respect to the Intellectual Property and all disclosures of ideas, whether or not patentable and all pending applications.

Each ASSIGNOR hereby authorizes and requests the Commissioner of Patents of the United States, and any official of any country or countries foreign to the United States, whose duty it is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the said ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

Each ASSIGNOR hereby covenants that (i) he believes himself to be the original and first inventor of the subject matter of the Intellectual property; (ii) he has the full right to convey his entire right, title and interest in said Intellectual Property, and (iii) he has not executed and will not execute any agreement in conflict herewith.

Each ASSIGNOR further covenants that that he or she will not undertake any activity to erode or challenge the ASSIGNEES' rights in the Intellectual Property assigned hereunder. In addition, each ASSIGNOR further covenants not to disclose the Intellectual Property assigned hereunder to anyone outside the ASSIGNEE, its successors, legal representatives and assigns.

Each ASSIGNOR further covenants that he will, at any time, upon ASSIGNEE'S request, execute and deliver any and all papers that may be necessary or desirable to perfect the title in the Intellectual Property, or any patents that may be granted therefore, in the ASSIGNEE, its successors and assigns, and if ASSIGNEE, or its assignee, desires to make a substitute, divisional or continuation application for said Intellectual Property, or to secure a reissue or extension of any Letters Patent, to file a disclaimer relating thereto, or an application for a corresponding patent in any foreign country, or undertake any other act to secure and protect the ASSIGNEE'S rights in the Intellectual Property, that he will upon request, sign all papers, make all rightful oaths, and do all lawful acts requisite for the said purposes, but at the expense of the ASSIGNEE.

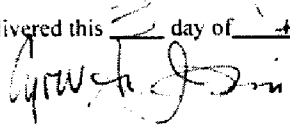
Each ASSIGNOR hereby acknowledges that the entire beneficial interest in the Intellectual Property and to which the above application relates is irrevocably vested in the ASSIGNEE including the right to make the application for protection in all countries abroad and to claim priority under the International Convention for such applications and hereby assents to the making of any such applications, with or without priority claims, and of any divisional application resulting therefrom.

Each ASSIGNOR further covenants that he will at all times communicate to the ASSIGNEE, its successors, assigns or legal representatives, all facts relating to said Intellectual Property, or the history thereof, known to him, and testify as the same in interferences or other litigation, when requested so to do.

Executed and delivered this 2 day of January, 2012.

Inventor:

Cyrus Irani



State of TEXAS §

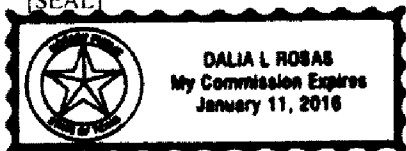
§

County of HARRIS §

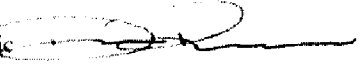
§

BEFORE ME, the undersigned authority, personally appeared this 2 day of January, 2012 Cyrus Irani, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he signed, sealed and delivered the said instrument as his free and voluntary act and deed for the uses and purposes therein set forth.

[SEAL]



Notary Public



My Commission expires:

January 11, 2016

### ASSIGNMENT

WHEREAS, Cyrus Irani (an "ASSIGNOR"), a citizen of the United States of America, residing at 7718 Stonedale Drive, Houston, Texas 77095, has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

WHEREAS, Hendrik Koof (an "ASSIGNOR"), a citizen of the United States of America, residing at 8992 Argonne Stone Lane, Conroe, Montgomery, Texas 77302, has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

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**NOW, THEREFORE, subject to the terms, conditions, covenants and provisions of this Assignment, and in consideration of Ten Dollars (\$10.00) and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each ASSIGNOR, the parties hereto, intending legally to be bound, agree as follows:**

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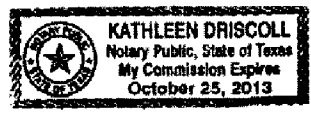


Executed and delivered this 3<sup>rd</sup> day of January, 2013  
Inventor [Signature]  
Hendrik Kool

State of Texas §  
County of HARRIS §

BEFORE ME, the undersigned authority, personally appeared this 3<sup>rd</sup> day of January, 2013, Hendrik Kool, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he signed, sealed and delivered the said instrument as his free and voluntary act and deed for the uses and purposes therein set forth.

[SEAL]



[Signature]  
Notary Public Kathleen DRISCOLL

My Commission expires: 10-25-13