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| <b>PATENT ASSIGNMENT COVER SHEET</b> |
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4786120

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|---|-----------------------------------|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                    |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                        |
| <b>CONVEYING PARTY DATA</b>   |                                   |
| <b>Name</b>   | <b>Execution Date</b>             |
| JIN-HONG CHEN   | 06/20/2016                        |
| STACEY M. ALTHAUS   | 06/20/2016                        |
| MOHAMMAD DELSHAD  | 06/20/2016                        |
| YANG ZHAO   | 08/25/2016                        |
| <b>RECEIVING PARTY DATA</b>   |                                   |
| <b>Name:</b>  | ARAMCO SERVICES COMPANY           |
| <b>Street Address:</b>  | 9009 WEST LOOP SOUTH              |
| <b>City:</b>  | HOUSTON                           |
| <b>State/Country:</b>   | TEXAS                             |
| <b>Postal Code:</b>   | 77096-1799                        |
| <b>PROPERTY NUMBERS Total: 1</b>  |                                   |
| <b>Property Type</b>  | <b>Number</b>                     |
| <b>Application Number:</b>  | 15873576                          |
| <b>CORRESPONDENCE DATA</b>  |                                   |
| <b>Fax Number:</b>  | (877)769-7945                     |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i> |                                   |
| <b>Phone:</b>   | 214-292-4039                      |
| <b>Email:</b>   | apsi@fr.com                       |
| <b>Correspondent Name:</b>  | FISH & RICHARDSON P.C.            |
| <b>Address Line 1:</b>  | P.O. BOX 1022                     |
| <b>Address Line 4:</b>  | MINNEAPOLIS, MINNESOTA 55440-1022 |
| <b>ATTORNEY DOCKET NUMBER:</b>  | 38136-0178001                     |
| <b>NAME OF SUBMITTER:</b>   | PEGGY C. HARRIS                   |
| <b>SIGNATURE:</b>   | /Peggy C. Harris/                 |
| <b>DATE SIGNED:</b>   | 01/22/2018                        |
| <b>Total Attachments: 8</b>   |                                   |
| source=38136-0178001_Assignment_Inv_ASC_P01#page1.tif   |                                   |
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| source=38136-0178001_Assignment_Inv_ASC_P01#page3.tif   |                                   |

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source=38136-0178001\_Assignment\_Inv\_ASC\_P01#page8.tif

## ASSIGNMENT OF INTELLECTUAL PROPERTY

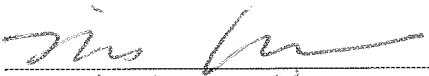
In consideration of my continued employment with Aramco Services Company ("ASC" or the "Company"), I have executed this Assignment of Intellectual Property ("Assignment") relating to the Intellectual Property more fully described in the document identified by ASC Tracking No. ASC0171 ("Invention Disclosure"), and agree to the following:


1. I do hereby assign to the Company all of my right, title and interest in the Invention Disclosure, including, but not limited to, proprietary information and Intellectual Property (the "Assigned Interests").
2. If requested by the Company, and at no expense to me, I agree to execute and deliver all papers and make all rightful oaths deemed useful or necessary by the Company in connection with the preparation, assignment, filing, and prosecution of applications for patents covering all such Assigned Interests and to lend such other assistance in obtaining, perfecting or enforcing such patents as the Company may request.
3. I agree to cooperate, both during my employment with the Company and for a reasonable time thereafter, in the prosecution or defense of any patent claims, litigation, and any other proceeding involving the Assigned Interests.
4. I understand that all Works I have created for the Company, or in pursuit of my duties to the Company, that relate to the Assigned Interests are Works made for hire and are owned by the Company.
5. For purposes of this Assignment, I agree that the following definitions apply:

"Intellectual Property" or "IP" includes patents, patent applications, utility models, industrial designs, inventions, trademarks, service marks, logos, trade dress, brand names, goodwill, domain names or other sources of origin, copyrights and moral rights, trade secrets, proprietary know-how and know-how, including, but not limited to Inventions, conceptions, developments, books, articles, workbooks, manuals, lab manuals, bibliographies, video or audio recordings, films, slides, website content, transparencies, charts, graphic materials, photographic or similar visual materials, film strips, multi-media materials, three-dimensional materials, presentations, exhibits, computer programs, software, and databases.

"Works" includes works of authorship fixed in a tangible medium of expression from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, and include the product and results of services rendered to the Company, invention disclosures, drawings, plans, documents, flow charts, original photographs, graphics, graphic design, computer files, work-up files, simulations, simulation files, formulations, source codes, software and/or programming.

6. I understand and agree that the foregoing covenants shall inure to the benefit of the Company, its successors, assigns or designees, meaning that ASC, its successors, assigns and designees shall have the right to make, sell, use, assign, license and take any and all other actions as the owner of all rights associated with the Assigned Interests.
  
7. I understand and agree that this Assignment shall be binding upon me during and after my assignment by the Company and upon my heirs, executors, administrators and assigns.

Signature:   
Name (printed): Jinhong Chen  
Dated this 20 day of June, 2016

Witnessed by me on this 20 day of June, 2016  
Signature:   
Name (printed): Sorey Althaus

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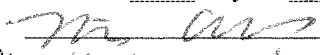
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7. I understand and agree that this Assignment shall be binding upon me during and after my assignment by the Company and upon my heirs, executors, administrators and assigns.

Signature:   
Name (printed): Stacey Althaus  
Dated this 20 day of June, 2016

Witnessed by me on this 20 day of June, 2016  
Signature:   
Name (printed): Jiahong Chen

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7. I understand and agree that this Assignment shall be binding upon me during and after my assignment by the Company and upon my heirs, executors, administrators and assigns.

Signature: M. Delshad  
Name (printed): MOHAMMAD DELSHAD  
Dated this 20 day of June, 2016

Witnessed by me on this 20 day of June, 2016  
Signature: Jin Hong Chen  
Name (printed): Jin Hong Chen



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In consideration of my continued employment with Aramco Services Company ("ASC" or the "Company"), I have executed this Assignment of Intellectual Property ("Assignment") relating to the Intellectual Property more fully described in the document identified by ASC Tracking No. 0171 ("Invention Disclosure"), and agree to the following:

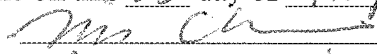
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7. I understand and agree that this Assignment shall be binding upon me during and after my assignment by the Company and upon my heirs, executors, administrators and assigns.

Signature:   
Name (printed): YANZE ZHAO  
Dated this 25 day of Aug, 2016

Witnessed by me on this 25 day of August, 2016  
Signature:   
Name (printed): Jinhong Chen