

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4587583

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DINGDING CHEN	11/10/2016
BIN DAI	05/25/2017
CHRISTOPHER M. JONES	04/03/2017
JOHN A. QUIREIN	11/10/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	HALLIBURTON ENERGY SERVICES, INC.
<b>Street Address:</b>	3000 N. SAM HOUSTON PARKWAY E.
<b>City:</b>	HOUSTON
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	77032
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15557049
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(214)200-0853
<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>	214-651-5000
<b>Email:</b>	ipdocketing@haynesboone.com
<b>Correspondent Name:</b>	HAYNES AND BOONE, LLP
<b>Address Line 1:</b>	2323 VICTORY AVENUE, SUITE 700
<b>Address Line 2:</b>	IP SECTION
<b>Address Line 4:</b>	DALLAS, TEXAS 75219
<b>ATTORNEY DOCKET NUMBER:</b>	7523.1705US01
<b>NAME OF SUBMITTER:</b>	ERIKA VASQUEZ
<b>SIGNATURE:</b>	/Erika Vasquez/
<b>DATE SIGNED:</b>	09/11/2017
<b>Total Attachments: 6</b>	
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## ASSIGNMENT

WHEREAS, Dingding Chen (an "ASSIGNOR"), a citizen of the United States of America, residing at 11511 Bermondsey Drive, Houston, TX 77377, United States of America has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

WHEREAS, Bin Dai (an "ASSIGNOR"), a citizen of China, residing at 26126 W Lovegrass Lane, Spring, TX 77386, United States of America has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

WHEREAS, Christopher M. Jones (an "ASSIGNOR"), a citizen of the United States of America, residing at 3219 Cobblestone, Houston, TX, 77084, United States of America, has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

WHEREAS, John A. Quirein (an "ASSIGNOR"), a citizen of the United States of America, residing at 109 Skyline Road, Georgetown, TX 78628, United States of America, has developed and is the owner of certain inventions as embodied in and represented by the Intellectual Property, as defined below.

"Intellectual Property" shall collectively mean the technology developed by ASSIGNOR and generally titled:

### **AUTOMATED DOWNHOLE FLUID CLASSIFICATION USING PRINCIPAL SPECTROSCOPY COMPONENT DATA**

as well as any application related thereto, including, without limitation, the application(s):

\_\_\_ of even date filed herewith;

X filed on **November 4, 2016** and assigned application number **PCT/US2016/060577**.

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 3000 N. Sam Houston Parkway E., Houston, Texas 77032, 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 provisional, divisions or continuations

thereof, and any patents or similar registrations obtained for the 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, as well as all rights to claim priority to any of the foregoing 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 he will not undertake any activity to erode or challenge the ASSIGNEE'S rights in the Intellectual Property assigned hereunder.

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 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 the 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 10<sup>th</sup> day of November 2016.

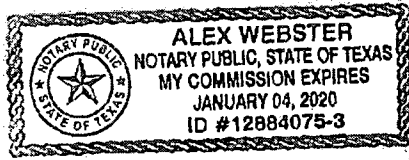
Inventor: Dingding Chen  
Dingding Chen

State of Texas §

County of Harris §

BEFORE ME, the undersigned authority, personally appeared this 10<sup>th</sup> day of November 2016, Dingding Chen 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]



Alex Webster

Notary Public Alex Webster

My Commission Expires: 1/4/2020

Executed and delivered this 25 day of may 2017.

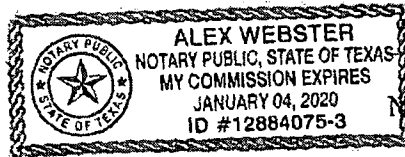
Inventor: Bin Dai  
Bin Dai

State of TX §

County of Harris §

BEFORE ME, the undersigned authority, personally appeared this 25<sup>th</sup> day of May 2017, Bin Dai, 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]



Alex Webster  
Notary Public Alex Webster  
My Commission Expires: 1/24/2020  
AW

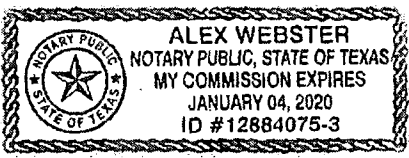
Executed and delivered this 3rd day of April 2017

Inventor: Christopher M. Jones  
Christopher M. Jones

State of Texas §  
County of Harris §

BEFORE ME, the undersigned authority, personally appeared this 3rd day of April 2017, ~~Christopher~~ Michael Jones 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 Alex Webster  
My Commission Expires: 1/4/2020

Executed and delivered this 10<sup>th</sup> day of November 2016.

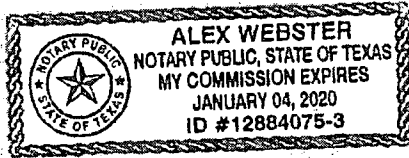
Inventor: John A. Quirein  
John A. Quirein

State of Texas §

County of Harris §

BEFORE ME, the undersigned authority, personally appeared this 10<sup>th</sup> day of November 2016, John A. Quirein, 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]



Alex Webster  
Notary Public Alex Webster

My Commission Expires: 1/4/2020