

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4488720

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
JING JIN	04/21/2016
YAO GE	04/21/2016
BATAKRISHNA MANDAL	04/21/2016
<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>	77032-3219
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15541448
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(713)658-2553
<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>	7136581818
<b>Email:</b>	esther.moron@chamberlainlaw.com
<b>Correspondent Name:</b>	COLLIN A. ROSE
<b>Address Line 1:</b>	1200 SMITH ST., 14TH FLOOR
<b>Address Line 2:</b>	CHAMBERLAIN HRDLICKA
<b>Address Line 4:</b>	HOUSTON, TEXAS 77002
<b>ATTORNEY DOCKET NUMBER:</b>	140846-033603US
<b>NAME OF SUBMITTER:</b>	ESTHER MORON
<b>SIGNATURE:</b>	/Esther Moron/
<b>DATE SIGNED:</b>	07/03/2017
<b>Total Attachments: 6</b>	
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ASSIGNMENT

For good and valuable consideration given to me by Halliburton Energy Services, Inc., and any other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I, Jing Jin ("ASSIGNOR"), having jointly or solely made an invention in "Ultrasonic Transducers with Piezoelectric Material Embedded in Backing" ("INVENTION"), while in the employ or hire either as an employee or consultant of Halliburton Energy Services, Inc., a Corporation organized and existing under the laws of the State of Delaware, doing business at 3000 N. Sam Houston Parkway E., Houston, Texas 77032-3219 ("ASSIGNEE"), do hereby assign, sell, and convey to ASSIGNEE, its successors, and assigns, ASSIGNOR's entire right, title, and interest throughout the world in and to:


1. Said INVENTION in "Ultrasonic Transducers with Piezoelectric Material Embedded in Backing;"
2. Utility provisional patent application on said INVENTION entitled, "Ultrasonic Transducers with Piezoelectric Material Embedded in Backing," filed as:<sup>1</sup>  
  
US Provisional Patent Application No. 62/165,755 on May 22, 2015  
Attorney's Reference No. 140846-033600US;
3. Patent Cooperation Treaty patent application on said INVENTION entitled, "Ultrasonic Transducers with Piezoelectric Material Embedded in Backing," filed as:<sup>1</sup>  
  
PCT Patent Application No. PCT/US2016/028475 on April 20, 2016  
Attorney's Reference No. 140846-033602WO
4. All applications for patent or like protection on the INVENTION that have now been or may in the future be made anywhere in the world, including any continuation, continuation-in-part, and any other utility applications;
5. All patents and like protection that have now been or may in the future be granted on the INVENTION anywhere in the world;
6. All substitutions, divisions, continuations, continuations-in-part, renewals, reissues, extensions, and the like of the applications and patents and like grants, including without limitation, those obtained or permissible under past, present, and future laws and statutes;

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<sup>1</sup> ASSIGNOR further authorizes the handling attorneys to insert the serial number and filing date of the patent application identified by the listed file number as soon as it is known as well as to attach and update a schedule of any further application serial numbers or patent numbers related to the INVENTION as they become known.

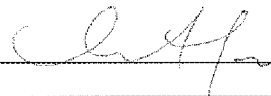
7. All rights of action on account of past, present, and future unauthorized use of the INVENTION and for infringement of the patents and like protection anywhere in the world;
8. The right in ASSIGNEE to file in its name applications for patents and like protection for the INVENTION in any country or countries in the world; and
9. All rights of priority associated with the INVENTION, applications, patents, and like protection anywhere in the world.

ASSIGNOR covenants that ASSIGNOR, its heirs, legal representatives, assigns, administrators, and executors will, at the expense of ASSIGNEE, its successors, and assigns, execute all papers and perform such other acts as may be reasonably necessary to give ASSIGNEE, its successors, and assigns, the full benefit of this Assignment. Further, ASSIGNOR warrants that the INVENTION is not encumbered by another assignment or obligation of assignment to a third-party and that ASSIGNOR has the full ability and authority to assign and encumber the INVENTION.

ASSIGNOR:   
Name: Jing Jin

Date: 21/04/2016

Witnessed By:




Signature

Cheryl Choo  
Printed Name of Witness

Date: 21/04/2016

Witnessed By:



Signature

Xiang Xu  
Printed Name of Witness

Date: 21/04/2016

## ASSIGNMENT

For good and valuable consideration given to me by Halliburton Energy Services, Inc., and any other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I, Yao Ge ("ASSIGNOR"), having jointly or solely made an invention in "Ultrasonic Transducers with Piezoelectric Material Embedded in Backing" ("INVENTION"), while in the employ or hire either as an employee or consultant of Halliburton Energy Services, Inc., a Corporation organized and existing under the laws of the State of Delaware, doing business at 3000 N. Sam Houston Parkway E., Houston, Texas 77032-3219 ("ASSIGNEE"), do hereby assign, sell, and convey to ASSIGNEE, its successors, and assigns, ASSIGNOR's entire right, title, and interest throughout the world in and to:

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ASSIGNOR:                     Guzuo                      
 Name: Yao Ge

Date:                     21/04/2016                    

Witnessed By:

                    Wend                    

Signature

                    Wei Li                      
 Printed Name of Witness

Date: Apr. 21. 2016

Witnessed By:

                    FAN YIJING                    

Signature

                    FAN YIJING                      
 Printed Name of Witness

Date: 21/04/2016

## ASSIGNMENT

For good and valuable consideration given to me by Halliburton Energy Services, Inc., and any other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I, Batakrishna Mandal (“ASSIGNOR”), having jointly or solely made an invention in “Ultrasonic Transducers with Piezoelectric Material Embedded in Backing” (“INVENTION”), while in the employ or hire either as an employee or consultant of Halliburton Energy Services, Inc., a Corporation organized and existing under the laws of the State of Delaware, doing business at 3000 N. Sam Houston Parkway E., Houston, Texas 77032-3219 (“ASSIGNEE”), do hereby assign, sell, and convey to ASSIGNEE, its successors, and assigns, ASSIGNOR’s entire right, title, and interest throughout the world in and to:

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ASSIGNOR: Batakrishna Mandal  
 Name: Batakrishna Mandal

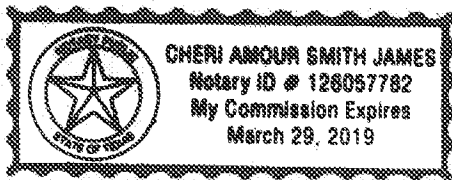
Date: 4/21/2016

THE STATE OF: TEXAS  
 COUNTY OF: Harris

Before me, the undersigned authority, on this day personally appeared Batakrishna Mandal, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 21<sup>st</sup> day of April, 2016.

[Signature]  
 Notary Public in and for the State of Texas



My commission expires: March 29, 2019

[SEAL]