# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6040528

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
SHANG ZHANG	05/07/2019
GREG DANIEL BRUMBAUGH	05/05/2019
HAILUN NI	05/02/2019
GAETAN PIERRE LOUIS BARDY	05/07/2019
HAROLD GRAYSON WALTERS	05/08/2019

### **RECEIVING PARTY DATA**

Name:	LANDMARK GRAPHICS CORPORATION
Street Address:	3000 N. SAM HOUSTON PARKWAY E.
City:	HOUSTON
State/Country:	TEXAS
Postal Code:	77032

## **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16652619

### **CORRESPONDENCE DATA**

**Fax Number:** (972)480-8865

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.

**Phone:** 972-480-8800

**Email:** docket@pj-iplaw.com

Correspondent Name: HALLIBURTON ENERGY SERVICES, INC. C/O PA

Address Line 1: 14241 DALLAS PARKWAY

Address Line 2: SUITE 620

Address Line 4: DALLAS, TEXAS 75254

ATTORNEY DOCKET NUMBER:	2018-102933 U1 US
NAME OF SUBMITTER:	J. JOEL JUSTISS
SIGNATURE:	/J. Joel Justiss/
DATE SIGNED:	03/31/2020

Total Attachments: 6

PATENT REEL: 052276 FRAME: 0630

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PATENT REEL: 052276 FRAME: 0631 DOCKET NO: 2018-102933 U1 PCT PATENT

### ASSIGNMENT

For valuable consideration, Zhang, Shang, a resident of Tulsa, OK; Brumbaugh, Greg Daniel, a resident of Houston, TX; Ni, Hailun, a resident of Stanford, CA, Bardy, Gaetan Pierre Louis, a resident of Spring, TX, Walters, Harold Grayson, a resident of Tomball, TX, hereby, assigns to Landmark Graphics Corporation, a corporation of Delaware, having a place of business at 3000 N. Sam Houston Parkway E., Houston, Texas, 77032-3219, U.S.A., and its successors, assigns (collectively hereinafter called "the Assignee), the entire right, title and interest throughout the world in the inventions and improvements which are subject of a PCT Application entitled "SIMULATING HYDRAULIC FRACTURING GEOMETRY PROPAGATION USING A DIFFERENTIAL STRESS AND PATTERN-BASED MODEL" this assignment including said application, any and all United States and foreign applications and patents, utility models, and design registrations for any of said inventions or improvements; and the right to claim priority based on the filing date of said application under all treaties; and I hereby authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and I agree for myself and my respective heirs, legal representatives and assign, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

Shang Zhang

In the State of Oklahoma\_

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In the County of <u>ILL</u>

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On this ZZ, day of ZZ, 2019, before me personally came Shang Zhang, to me known to be the individual described herein and who executed the foregoing instrument and acknowledged execution of the same.

Notary Public in and for the State of

Oklahoma

OFFICIAL SEAL ROBERT A PERRY NOTARY PUBLIC STATE OF OR AHOSIA Continission & 080000041 My Commission Express 12-20-2019

Jy U. Druhy Greg Daniel Brumbaugh

In the State of Texas §

In the County of there's §

On this  $5^h$ , day of  $90^h$ , 2019, before me personally came Greg Daniel Brumbaugh, to me known to be the individual described herein and who executed the foregoing instrument and acknowledged execution of the same.

RAKIN PATEL
MY COMMISSION EXPIRES
AUGUST 21, 2022
NOTARY ID: 129931190

Notary Public in and for the State of Texas

PATENT REEL: 052276 FRAME: 0634

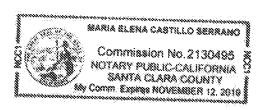
LLLII Hailun Ni

Lalifornia.
In the State of Texas

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In the County of *Ganta Clara* §

On this 474 day of 1854, 2019, before me personally came Hailun Ni, to me known to be the individual described herein and who executed the foregoing instrument and acknowledged execution of the same.



Maria Elesa Cruil Sous Town Notary Public in and for the State of Ferras

PATENT REEL: 052276 FRAME: 0635

Gaetan Pierre Louis Bardy

In the State of Texas

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In the County of 101/15

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On this \_\_\_\_\_, day of \_\_\_\_\_\_, 2019, before me personally came Gaetan Pierre Louis Bardy, to me known to be the individual described herein and who executed the foregoing instrument and acknowledged execution of the same.

CHRISTIAN MENDENHALL Notary ID #13144951-0 My Commission Expires February 13, 2022 Notary Public in and for the State of Texas

Harold Grayson Walters

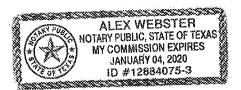
In the State of Texas

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In the County of

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On this day of way, 2019, before me personally came Harold Grayson Walters, to me known to be the individual described herein and who executed the foregoing instrument and acknowledged execution of the same.



Notary Public in and for the State of Texas

PATENT REEL: 052276 FRAME: 0637

**RECORDED: 03/31/2020**