

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4357006

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
YANCHAI ZHANG	03/24/2017
VENKATA DANDIBHOTLA	03/24/2017
MAURICE DUST	03/24/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CATERPILLAR INC
<b>Street Address:</b>	100 NE ADAMS STREET
<b>City:</b>	PEORIA
<b>State/Country:</b>	ILLINOIS
<b>Postal Code:</b>	61629
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15481074
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>	317-777-7920
<b>Email:</b>	US_Docket_Clerk@cat.com
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<b>Address Line 4:</b>	PEORIA, ILLINOIS 61629
<b>ATTORNEY DOCKET NUMBER:</b>	16-2792
<b>NAME OF SUBMITTER:</b>	KELLY J. SMITH
<b>SIGNATURE:</b>	/Kelly J. Smith/
<b>DATE SIGNED:</b>	04/06/2017
<b>Total Attachments: 4</b>	
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## ASSIGNMENT

WHEREAS I/We, the below named inventor(s), [hereinafter referred to as Assignor(s)], have made an invention entitled:

### HYDRAULIC FRACTURING SYSTEM AND METHOD FOR OPTIMIZING OPERATION THEREOF

for which I/We will or have filed a patent application; and

WHEREAS, Caterpillar Inc., a corporation of Illinois whose post office address is 100 NE Adams St., Peoria, IL 61629 (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention, and in and to the patent application for this invention and any and all patents to be issued upon this application throughout the world;

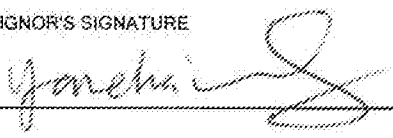
NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my/our entire right, title, and interest in and to this invention, and this application, and all divisions, and continuations thereof, and all patents which may be granted thereon, and all reissues thereof, as well as all rights to claim priority in any country or jurisdiction or patent office on the basis of this application, and all applications for patents which may hereafter be filed for this invention in any country or jurisdiction or patent office and all patents which may be granted on this invention in any country or jurisdiction or patent office, and all extensions, renewals, and reissues thereof; and I/We hereby authorize and request any official of any country or jurisdiction or patent office whose duty it is to issue patents on applications as described above, to issue all patents for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;


AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

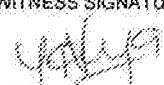
AND, I/WE HEREBY further covenant and agree that I/We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to me/us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in any country or jurisdiction or patent office, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns;

AND, I/WE HEREBY authorize the attorneys/representatives that I/WE have empowered to prosecute this application to insert here in parentheses the country, application number, and official filing date ( \_\_\_\_\_ Application No. \_\_\_\_\_, filed \_\_\_\_\_ ).

IN TESTIMONY WHEREOF, I/We have hereunto set our hands.

1. FULL NAME OF SOLE OR FIRST ASSIGNOR Yanchai Zhang	ASSIGNOR'S SIGNATURE 	DATE 03-24-17
ADDRESS 731 S. Breckenridge Dr., Dunlap, IL 61525		CITIZENSHIP P.R.CHINA

1. WITNESS NAME JAMES CHASE	WITNESS SIGNATURE 	DATE 3/24/2017
ADDRESS 14927 N IVY LAKE RD CHILlicothe, IL 61523		CITIZENSHIP USA

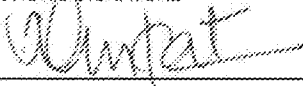
2. WITNESS NAME Navya Yadma	WITNESS SIGNATURE 	DATE 03/24/2017
ADDRESS 8936 N. Scrimshaw Dr, Apt #204 Peoria, IL 61615		CITIZENSHIP INDIA

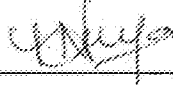
2. FULL NAME OF SECOND ASSIGNOR, IF ANY Venkata Dandibhotla	ASSIGNOR'S SIGNATURE	DATE
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3. FULL NAME OF THIRD ASSIGNOR, IF ANY Maurice Dust	ASSIGNOR'S SIGNATURE	DATE
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1. WITNESS NAME Navya Yadma	WITNESS SIGNATURE 	DATE 03/24/2017
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2. WITNESS NAME Zhengjie Cui	WITNESS SIGNATURE 	DATE 03/24/2017
ADDRESS 2215 W Willow Knolls Dr Apt 410 Peoria IL 61614		CITIZENSHIP China

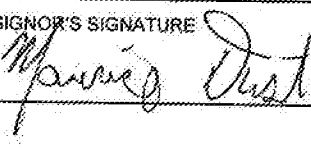
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2. FULL NAME OF SECOND ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
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