

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4932695

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
HONGLIU DU	12/14/2016
JOSEPH R. ROBEY	04/23/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CATERPILLAR INC.
<b>Street Address:</b>	100 NE ADAMS ST.
<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>	15380708
<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>	309-636-2223
<b>Email:</b>	US_Docket_Clerk@cat.com
<b>Correspondent Name:</b>	CATERPILLAR INC.
<b>Address Line 1:</b>	100 NE ADAMS STREET
<b>Address Line 2:</b>	AH 9510
<b>Address Line 4:</b>	PEORIA, ILLINOIS 61629
<b>ATTORNEY DOCKET NUMBER:</b>	16-1811-62185/478117US
<b>NAME OF SUBMITTER:</b>	KRISTEN M. WILLIAMS
<b>SIGNATURE:</b>	/Kristen M. Williams/
<b>DATE SIGNED:</b>	04/25/2018
<b>Total Attachments: 3</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:

#### ENERGY RECOVERY SYSTEM AND METHOD FOR HYDRAULIC TOOL

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;

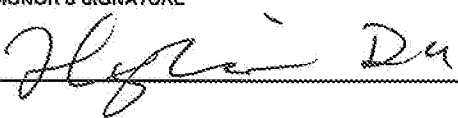
NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, 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 Assignee or the attorneys/representatives of Assignee to insert here in parentheses the country, application number, and official filing date (United States Application No. 15/380,708, filed December 15, 2016).

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

1. FULL NAME OF SOLE OR FIRST ASSIGNOR <b>Hongliu DU</b>	ASSIGNOR'S SIGNATURE 	DATE <b>12/14/2016</b>
ADDRESS <b>3604 Kestral Dr., Naperville, IL 60564</b>		CITIZENSHIP <b>U.S.A.</b>

1. WITNESS NAME Frank Breier	WITNESS SIGNATURE <i>Frank Breier</i>	DATE 14/Dec/16
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2. WITNESS NAME Joseph Demarchi	WITNESS SIGNATURE <i>Joseph Demarchi</i>	DATE 13/14/16
ADDRESS 227 S. Maple St. Frankfort, IL 60423		CITIZENSHIP USA

2. FULL NAME OF SECOND ASSIGNOR, IF ANY Joseph R. ROBEY	ASSIGNOR'S SIGNATURE	DATE
ADDRESS 1004 Ranchwood Dr., Shorewood, IL 60404		CITIZENSHIP

1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

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ADDRESS		CITIZENSHIP

1. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

2. WITNESS NAME	WITNESS SIGNATURE	DATE
ADDRESS		CITIZENSHIP

2. FULL NAME OF SECOND ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
Joseph R. ROBEY	<i>Joseph R Robey</i>	4-23-2018
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1. WITNESS NAME	WITNESS SIGNATURE	DATE
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2. WITNESS NAME	WITNESS SIGNATURE	DATE
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