504100477 11/17/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

SUBMISSION TYPE: NEW ASSIGNMENT NATURE OF CONVEYANCE: ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YONG YI	11/14/2016
BOGDAN BALEA	11/14/2016
ERIC PAUL SPAETH	11/14/2016

RECEIVING PARTY DATA

Name:	CATERPILLAR INC.
Street Address:	100 N.E. ADAMS STREET
City:	PEORIA
State/Country:	ILLINOIS
Postal Code:	61629-9510

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15353960

CORRESPONDENCE DATA

Fax Number: (309)675-1236

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: 3096362223

Email: US Docket Clerk@cat.com

CATERPILLAR INC./SMITHAMUNDSEN LLC INTEL **Correspondent Name:**

Address Line 1: 100 N.E. ADAMS STREET

Address Line 2: AH 9510

Address Line 4: PEORIA, ILLINOIS 61629-9510

ATTORNEY DOCKET NUMBER: 16-1506 **NAME OF SUBMITTER:** KELLY J. SMITH SIGNATURE: /Kelly J. Smith/ **DATE SIGNED:** 11/17/2016

Total Attachments: 4

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> **REEL: 040355 FRAME: 0372** 504100477

PATENT

EPAS ID: PAT4147146

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PATENT REEL: 040355 FRAME: 0373

SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 16-1506 Client Ref. No. 16-1506

ASSIGNMENT

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

COMPACT DESIGN EXHAUST AFTERTREATMENT SYSTEM WITH NOX SENSOR

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 Street, 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, IWE HEREBY author	rize the attorneys/representatives that	I/WE have empowered to prosecute this
application to insert here in parenthe	eses the country, application number, and $\frac{11-17-2016}{}$).	and official filing date (US
Application No. 15353960 , file	ed	**

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

1. FULL NAME OF SOLE OR FIRST ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Yong YI		11/14/2016
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Page 1 of 4

SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 16-1506 Client Ref. No. 16-1506

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SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 16-1506 Client Ref. No. 16-1506

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SOLE/JOINT INVENTION (Worldwide Rights) Attorney Docket No. 16-1506 Client Ref. No. 18-1506

3. FULL NAME OF THIRD ASSIGNOR, IF ANY	ASSIGNOR'S SIGNATURE	DATE
Eric Paul SPAETH		4/14/16
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TO DEPOSITOR VOLUME		
1. WITNESS NAME BLAW SCHUTZ	WITNESS SIGNATURE	11/14/16
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2: WITNESS NAME	WITNESS SIGNATURE	DATE
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PATENT REEL: 040355 FRAME: 0377