504557756 09/21/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SHANE O'CONNOR	03/30/2016
MICHAEL T. LYNCH	03/29/2016
RYAN M. JOHNSON	03/30/2016
RANDOLPH G. ZORAN	03/30/2016
ALEX A. BETHKE	04/01/2016
VICTOR C. CHEW	03/29/2016
ANDREW KOMISAREK	03/30/2016
MICHAEL BATES	03/30/2016
JACK ERICKSON	04/01/2016
DANIEL EDWARD NOVRESKE	04/01/2016
RYAN ROBERT WELCH	03/30/2016
CHAD CARIUS	03/30/2016
OSCAR CHAVIRA	03/29/2016
BRANDON LEEDY	03/30/2016
ERIC R. BUTLER	03/30/2016
WILLIAM J. RUNDE	03/30/2016
BUCKY WOODS	04/01/2016

RECEIVING PARTY DATA

Name:	CUMMINS EMISSION SOLUTIONS, INC.
Street Address:	500 JACKSON STREET
City:	COLUMBUS
State/Country:	INDIANA
Postal Code:	47201

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15559367

CORRESPONDENCE DATA

Fax Number: (202)672-5399

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

PATENT

REEL: 043646 FRAME: 0878

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 202-672-5300

Email: IPDocketing@foley.com, bgesiakowski@foley.com
Correspondent Name: JEFFREY J. MIKRUT - FOLEY & LARDNER, LLP

Address Line 1: 3000 K STREET, NW

Address Line 2: SUITE 600

Address Line 4: WASHINGTON, D.C. 20007

ATTORNEY DOCKET NUMBER:	106389-4643
NAME OF SUBMITTER:	JEFFREY J. MIKRUT
SIGNATURE:	/Jeffrey J. Mikrut/
DATE SIGNED:	09/21/2017

Total Attachments: 19

source=106389-4643 Executed Assignment#page1.tif source=106389-4643 Executed Assignment#page2.tif source=106389-4643 Executed Assignment#page3.tif source=106389-4643 Executed Assignment#page4.tif source=106389-4643_Executed_Assignment#page5.tif source=106389-4643 Executed Assignment#page6.tif source=106389-4643_Executed_Assignment#page7.tif source=106389-4643 Executed Assignment#page8.tif source=106389-4643 Executed Assignment#page9.tif source=106389-4643_Executed_Assignment#page10.tif source=106389-4643_Executed_Assignment#page11.tif source=106389-4643 Executed Assignment#page12.tif source=106389-4643 Executed Assignment#page13.tif source=106389-4643_Executed_Assignment#page14.tif source=106389-4643 Executed Assignment#page15.tif source=106389-4643 Executed Assignment#page16.tif source=106389-4643 Executed Assignment#page17.tif source=106389-4643 Executed Assignment#page18.tif source=106389-4643 Executed Assignment#page19.tif

> PATENT REEL: 043646 FRAME: 0879

ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor (hereinafter referred to singly and collectively as "ASSIGNOR") has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto

Cummins Emission Solutions, Inc. 500 Jackson Street Columbus, IN 47201 U.S.A.

(hereinafter referred to as "ASSIGNEE") its successors and assigns, the full and exclusive right, title and interest for the United States, its territories and possessions, and all foreign countries in and to this invention relating to

Integrated Aftertreatment System

as set forth i	n this United States Patent Application	
check one	[] executed concurrently herewith, [] executed on	
		FiledSeptember 18, 2017

as well as in and to (a) all improvements and modifications of the above-identified invention or inventions, (b) the above-identified application and all other applications for Letters Patent of the United States and countries foreign thereto for above-identified invention or inventions and all improvements and modifications thereof, (c) all Letters Patent which may issue from said applications in the United States and countries foreign thereto, (d) all divisions, continuations, reissues, and extensions of said applications and Letters Patent, and (e) the right to claim for any of said applications the full benefits and priority rights under the Patent Cooperation Treaty, the Paris Convention and any other international agreement; such right, title, and interest to be held and enjoyed by ASSIGNEE, its successors and assigns, to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by ASSIGNOR had this Assignment not been made.

ASSIGNOR HEREBY AUTHORIZES ASSIGNEE to file patent applications in any or all countries on the above-identified invention or inventions in the name of the undersigned or in the name of ASSIGNEE or otherwise as ASSIGNEE may deem advisable under the International Convention or otherwise.

ASSIGNOR HEREBY AUTHORIZES AND REQUESTS the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE as assignee of the entire interest, for the sole use and benefit of ASSIGNEE, its successors and assigns.

Page 1 of 19

ASSIGNOR HEREBY AGREES (a) to communicate to ASSIGNEE, its successors and assigns, or their representative or agents, all facts and information known or available to ASSIGNOR respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, opposition, revocation, extension, or infringement purposes or other legal, judicial, or administrative proceedings, whenever requested by ASSIGNEE; (b) to testify in person or by affidavit as required by ASSIGNEE, its successors and assigns, in any such proceeding in the United States or a country foreign thereto; (c) to execute and deliver, upon request by ASSIGNEE, all lawful papers including, but not limited to, original, divisional, continuation, and reissue applications, renewals, assignments, powers of attorney, oaths, affidavits, and declarations, depositions; and (d) to provide all reasonable assistance to ASSIGNEE, its successors and assigns, in obtaining and enforcing proper title in and protection for said invention or inventions, improvements, and modifications under the intellectual property laws of the United States and countries foreign thereto.

ASSIGNOR HEREBY REPRESENTS AND WARRANTS that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

ASSIGNOR HEREBY GRANTS to the law firm of Foley & Lardner LLP the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

ASSIGNOR UNDERSTANDS AND AGREES that the attorneys and agents of the law firm of Foley & Lardner LLP do not personally represent ASSIGNOR OR ASSIGNOR's legal interests, but instead represent the interests of ASSIGNEE; since said attorneys and agents cannot provide legal advice to ASSIGNOR with respect to this Assignment, ASSIGNOR acknowledges its right to seek its own independent legal counsel.

Executed this 30 day of MARCH . 20 16.

Shane O'CONNOR

State of Wisconsin)
County of Daye

On 3-30-19 before me,

Davey Prokepoc Adu. ASS Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>SHANE O'CONNOR</u>
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public

20-18 EXD

Executed this 29 day of MARCH, 20 10	<u>.</u> .
-	Michael Lynch
	•
State of WI) County of Towa)	
	Sue T Howdle Notury insert Name and Title of the Officer (Notary Public)
personally appeared MICHAEL T. LYNCH Name(s) of Signer(s)	
who proved to me on the basis of satisfactory evide to the within instrument and acknowledged to me that he/sh capacity(ies), and that by his/her/their signature(s) on the in- which the person(s) acted, executed the instrument.	ence to be the person(s) whose name(s) is/are subscribed e/their executed the same in his/her/their authorized strument the person(s), or the entity upon behalf of
I certify under PENALTY OF PERJURY that the f	oregoing paragraph is true and correct.
WITNESS my hand and official seal. Signature Signature of Notary Public	10-29-2017

Executed this 30 th day of Manch 2016.
RYAN M. JOHNSON
State of (Disconsiv) County of Dane On 3-30-16, before me. Date Date Name and Title of the Officer (Notary Public)
personally appeared <u>RYAN M. JOHNSON</u> Name(s) of Signer(s)
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.
Signature of Notary Public 2 3 19 EX

Executed this 30 day of March , 20/6 Randolph H. Joran

On 3-30-16 before me. Darce

personally appeared RANDOLPH G. ZORAN Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public 3-30-18 Exp

Executed this 1 day of April , 2016.

State of Colorado)
County of Boulder)

On 04 01 2016, before me, Wickolas Karian Kowsk Date Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>ALEX A. BETHKE</u> Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Signature of Notary Public

NICKOLAS KARICHKOWSKY
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20154039027
MY COMMISSION EXPIRES OCTOBER 2, 2019

Executed this 29 day of March, 20 16 VICTOR C. CHEW

State of Indiana)

County of Bartholomew)

On Marda 29,2016, before me, Carmelita Kay Kohl-Smith /Notary Public

Here insert Name and Title of the Officer (Notary Public)

personally appeared VICTOR C. CHEW Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

Signature Casmella Kay Koll Smill Signature of Notary Public

CARMELITA KAY KOHL-SMITH **Bartholomew County** My Commission Expires June 17, 2023

Executed this 30th day of March . 2016.

ADDREW KOMISAREK

State of Wiscons (N)
County of Sawe

On 5-30-10 before me, Yeve Prokopec Adm.

Date

Here insert Name and Title of the Officer (Notary Public.)

personally appeared <u>ANDREW KOMISAREK</u> Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature

Signature of Notary Public

Executed this 30 day of March , 20/6.

MICHAEL BATES

State of Indiana)

County of Bartholomew __)

On March 30, 2016, before me, Carmelita Kay Kohl-Smith /Notary Public

Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>MICHAEL BATES</u> Namc(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature Cameleto Kay Kolel Smile

Signature of Notary Idblic

NOTARY BEAL FOR SE

CARMELITA KAY KOHL-SMITH Bartholomew County My Commission Expires June 17, 2023

State of Indiana)

County of Bartholomew)

On April 1, 2016, before me, Carmelita Kay Kohl-Smith /Notary Public

Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>JACK ERICKSON</u>
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official scal.

Cianalura I

Signature of Notary Public

CARMELITA KAY KOHL-SMITH
Bartholomew County
My Commission Expires
June 17, 2023

State of Indiana)

County of Bartholomew

On April 1, 2016, before me, Carmelita Kay Kohl-Smith /Notary Public

Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>DANIEL EDWARD NOVRESKE</u> Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature All March

CARMELITA KAY KOHL-SMITH Bartholomew County My Commission Expires June 17, 2023

Executed this 30 day of March . 2016.

State of Wisconson)
County of Dane

On 3-30-16 before me. Day Cyty Col Adm. ASST.

Here insert Name and Title of the Officer (Notary Public)

personally appeared RYAN ROBERT WELCH Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official sea

Signature of Notary Public 3-30-18 exp.

Executed this 30 day of March , 2016.

State of Indiana)

County of Bartholomew)

On March 30, 2016, before me, Carmelita Kay Kohl-Smith /Notary Public

Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>CHAD CARIUS</u>
Name(s) of Signer(s)

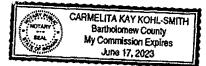
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and-official seal.

Signature _

Signature of Notary Public



Executed this 3 day of 29, 2016.

State of Indiana)

County of Bartholomew)

On March 29, 2016, before me. Carmelita Kay Kohl-Smith /Notary Public

Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>OSCAR CHAVIRA</u> Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/arc subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Carmelde Kay Kold Smith

Signature of Notary Public

CARMELITA KAY KOHL-SMITH
Bartholomew County
My Commission Expires
June 17, 2023

Executed this 30th, day of March . 2011	
	B Phot
value.	BRANDON LEEDY

State of Discovision

County of Dave

On 5-30-16 before me. Dave Provided Many Publich

Date

Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>BRANDON LEEDY</u>
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature A V V V V V

Signature of Notary\Public

Executed this 30 day of MARCH . 2016

State of Wisconsin)
County of Sane)

On 3-30-10, before me, Dav Ce, Pro 1000 Adv. ASS

personally appeared ERIC R. BUTLER Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Executed this 30 day of MARCH 20 / 6

WILLIAM J. RUNDE

State of Wisconsing
County of Dane

n 3-30-16 , before me,

Here insert Name and Title of the Officer (Notary Publ

personally appeared <u>WILLIAM J. RUNDE</u>
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Signature of Notary Public

WP.

State of Indiana)

County of Bartholomew)

On Hori I, 2016, before me, <u>Carmelita Kay Kohl-Smith /Notary Public</u>
Here insert Name and Title of the Officer (Notary Public)

personally appeared <u>BUCKY WOODS</u>

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY that the foregoing paragraph is true and correct.

WITNESS my hand and official scal.

Signature Camelle Kay Koll Sul

Signature of Notary Public

CARMELITA KAY KOHL-SMITH
Bartholomew County
My Commission Expires
June 17, 2023