

<b>PATENT ASSIGNMENT COVER SHEET</b>
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EPAS ID: PAT5952803

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
NATHAN A. OTTINGER	01/31/2019
Z. GERALD LIU	02/06/2019
RAFAEL ERNESTO VASQUEZ LOMBARDO	01/30/2019
KRISHNA PRADEEP CHILUMUKURU	02/05/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CUMMINS EMISSION SOLUTIONS INC.
<b>Street Address:</b>	500 JACKSON STREET
<b>City:</b>	COLUMBUS
<b>State/Country:</b>	INDIANA
<b>Postal Code:</b>	47201
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16750987
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(312)832-4700
<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>	312-832-4500
<b>Email:</b>	rfernandez@foley.com,jolsen@foley.com
<b>Correspondent Name:</b>	ROBERTO J. FERNANDEZ/FOLEY & LARDNER LLP
<b>Address Line 1:</b>	321 NORTH CLARK STREET, SUITE 3000
<b>Address Line 4:</b>	CHICAGO, ILLINOIS 60654
<b>ATTORNEY DOCKET NUMBER:</b>	106389-5914
<b>NAME OF SUBMITTER:</b>	ROBERTO J. FERNANDEZ
<b>SIGNATURE:</b>	/ Roberto J. Fernandez /
<b>DATE SIGNED:</b>	02/07/2020
<b>Total Attachments: 6</b>	
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**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, Indiana 47201

(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

**REMANUFACTURABLE SENSING ASSEMBLIES AND METHODS OF  
REMANUFACTURE**

as set forth in this United States Patent Application

*check one*      executed concurrently herewith,  
                   executed on \_\_\_\_\_,  
                   Serial No. 62/797,737 Filed 1/28/2019

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.

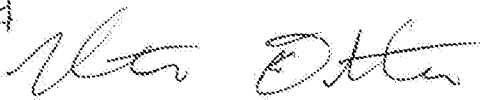
ASSIGNOR HEREBY AGREES (a) to communicate to ASSIGNEE, its successors and assigns, or their representative or agents, all facts and information known or available to ASSIGNOR respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, 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 31<sup>st</sup> day of January, 2019



NATHAN A. OTTINGER

State of Colorado  
County of Carmer

On 1-31-19 before me, Stacy Bogenhagen Asst. Manager  
*Date Here insert Name and Title of the Officer (Notary Public)*

personally appeared NATHAN A. OTTINGER  
Name(s) of Signer(s)

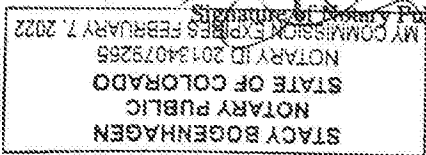
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/their executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s),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



Place Notary Seal Above

Executed this 6th day of Feb, 2019.

Z. Gerald Liu  
Z. GERALD LIU

State of Wisconsin  
County of Dane

On 2/6/19, before me, Darcy Prokopec Admin. Asst.  
*Date Here insert Name and Title of the Officer (Notary Public)*

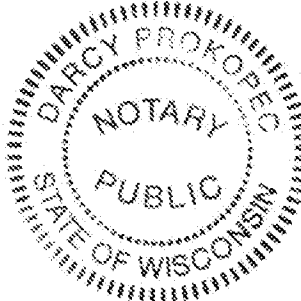
personally appeared Z. GERALD LIU  
Name(s) of Signer(s)

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.

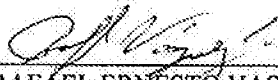
WITNESS my hand and official seal.

Signature Darcy Prokopec  
Signature of Notary Public 8/30/20



Place Notary Seal Above

Executed this 30 day of January, 2019.

  
\_\_\_\_\_  
RAFAEL ERNESTO VASQUEZ LOMBARDO

State of Indiana  
County of Bartholomew )

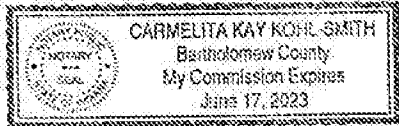
On January 30, 2019 before me, Carmelita Kay Kohl-Smith/Notary Public  
Date Here insert Name and Title of the Officer (Notary Public)

personally appeared RAFAEL ERNESTO VASQUEZ LOMBARDO  
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 Carmelita Kay Kohl-Smith  
Signature of Notary Public



Place Notary Seal Above

Executed this 5<sup>th</sup> day of Feb, 2019.

*Krishna Pradeep Chilumukuru*  
KRISHNA PRADEEP CHILUMUKURU

State of Indiana  
County of Bartholomew

On February 5<sup>th</sup>, before me, Jennifer R. Howe  
*Date* *Here insert Name and Title of the Officer (Notary Public)*

personally appeared KRISHNA PRADEEP CHILUMUKURU  
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 *Jennifer R. Howe*  
Signature of Notary Public

Place Notary Seal Above  
JENNIFER R HOWE  
Seal  
Notary Public - State of Indiana  
Bartholomew County  
My Commission Expires Jun 1, 2024