505649707 08/30/2019

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:			NEW ASSIGNMENT				
NATURE OF CONVEYA	NCE:	,	ASSIGNMENT				
CONVEYING PARTY	ΔΤΑ						
		Ν	lame		Execution	Date	
KONSTANTIN KHIVAN	ITSEV				08/23/2019		
JANOS SZANYI					08/29/2019		
NICHOLAS R. JAEGEF	RS				08/23/2019		
LIBOR KOVARIK					08/23/2019		
FENG GAO					08/23/2019		
YONG WANG					08/30/2019		
RECEIVING PARTY D	ΑΤΑ						
Name:	DERE	K H. MA	AUGHAN				
Street Address:	P.O. B	OX 999), K1-53				
City:	RICHL	AND					
tate/Country: WASHINGTON							
Postal Code:	99352						
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ASSIGNMENT OF PATENT RIGHTS

Konstantin Khivantsev Janos Szanyi Nicholas R. Jaegers Libor Kovarik Feng Gao Yong Wang

To Battelle Memorial Institute

WHEREAS, we, Konstantin Khivantsev of Richland, County of Benton, State of Washington; Janos Szanyi of Richland, County of Benton, State of Washington; Nicholas R. Jaegers of Richland, County of Benton, State of Washington; Libor Kovarik of West Richland, County of Benton, State of Washington; Feng Gao of Framingham, County of Middlesex, State of Massachusetts; and Yong Wang of Richland, County of Benton, State of Washington; hereinafter INVENTORS, are the original inventors of certain inventions related to, HIGH-CAPACITY, LOW-TEMPERATURE, PASSIVE NOx AND CO ADSORBERS AND METHODS FOR MAKING SAME including those, described and claimed in various disclosures and patent applications including:

U.S. Patent Application No. 16/546,641 filed August 21, 2019, Entitled: High-Capacity, Low-Temperature, Passive NOx and CO Adsorbers and Methods for Making Same

Provisional Application No. 62/720,535, filed August 21, 2018, Entitled: High-Capacity, Low-Temperature, CO and Passive NOx Adsorbers and Methods for Making Same

; collectively referred to hereinafter as INVENTIONS.

For which we hereby authorize to be made any and all applications for Patent in the United States and any other country for such INVENTIONS.

WHEREAS Battelle Memorial Institute, a corporation of Ohio, organized and existing under the laws of the State of Ohio, and having a place of business in the City of Richland,

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Washington, has by prior agreement acquired all right, title, and interest in the said INVENTIONS and in all patents or patent applications sought or obtained therefor;

NOW, THEREFORE, be it known to all those who may be concerned, that for and in consideration of the sum of One Dollar (\$1.00) each, and other good and valuable considerations, the receipt of which is hereby acknowledged, We the INVENTORS do hereby reaffirm said assignment and do hereby confirm by these presents the sale, assignment and transfer unto the said Battelle Memorial Institute, the entire right, title, and interest in and to the INVENTIONS shown, described, or claimed herein, and the full and exclusive right, title, and interest to any and all patents and patent applications that show, describe or claim said INVENTIONS including but not limited to those applications referenced herein, and in and to any extensions, continuations, including continuations in part, reissues, divisions, or renewals thereof; and We each do hereby authorize and request the Commissioner of Patents or other proper Officer, to issue such Letters Patent, or any of them to the said Battelle Memorial Institute, as the assignee of my entire right, title, and interest in and to the same for the sole use and benefit of the said Battelle Memorial Institute, and its successors or assigns.

We each further covenant and agree that we each will, at the request and expense of the said Battelle Memorial Institute, execute such other and further assurances of title as may be necessary or proper to fully convey the interest herein sought to be conveyed; and that each of us will, at the request and expense of the said Battelle Memorial Institute, execute such application papers as may be desired by the said Battelle Memorial Institute, for the filing of any division or renewal of the application herein conveyed, or for reissues or extensions (including continuations or continuations in part applications), or any Letters Patent that may be granted upon said application, and will execute such Supplemental Oaths and Preliminary Statements, or other papers as desired by the said Battelle Memorial Institute.

We each further reaffirm the assignment unto the said Battelle Memorial Institute, the whole right, title, and interest to the invention disclosed in all patent applications, and priority document throughout all countries including but not limited to those foreign to the United States, and do hereby authorize the said Battelle Memorial Institute to apply for any and all patents therefor in its own name in any such countries where such procedure is proper and to claim the

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benefit of International Conventions and agree to execute applications of the said invention in the several countries where it is necessary that the same be executed by the inventors, and to execute assignments of such applications and the patents to be obtained therefor to the said Battelle Memorial Institute, the assignee herein, as well as all other necessary papers.

We do further hereby acknowledge that any willful false statements made in this assignment is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years or both.

Accepted by Battelle Memorial Institute: Executed at Richland, State of Washington, this day of An 2019. Derek H Maughan Intellectual Property Legal Services STATE OF Washington SS. COUNTY OF Benton

This <u>30</u> day of <u>Aug</u>., 2019, before me personally came the above-named Allan C. Tuan, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



Executed at Richland, State of Washington, this 23rd day of August, 2019.

- Page 3 of 9 -

Konstantin Khivantsev

STATE OF Washington)) ss. COUNTY OF Benton)

This 23^{vd} day of August, 2019, before me personally came the above-named Konstantin Khivantsev, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.

Notary Public for the State of Washington My commission expires: 1 29/20 [SEAL]

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Executed at Richland,	State of Washington,	this <u>29</u>	day of	Aug	ust	, 2019.
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Sareseno.	$\left(\right)$	Jaine	
Janos Szanyi	£	Artus -	

STATE OF Washington))ss.COUNTY OF Benton)

This 29^{10} day of 4200, 2019, before me personally came the above-named Janos Szanyi, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



Page 5 of 9

Executed at Richland, State of Washington, this 23 day of Avgu 5t, 2019.

Mun Nicholas R. Jaegors

STATE OF Washington **COUNTY OF Benton**

SS.

This 230° day of August, 2019, before me personally came the above-named Nicholas R. Jaegers, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.

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Notary Public for the State of Washington

My commission expires: 1/29/20

Executed at Richland, State of Washington, this <u>11</u> day of <u>August</u> , 2019.

Libor Kovari

STATE OF Washington SS. COUNTY OF Benton

This <u>23</u>¹ day of <u>August</u>, 2019, before me personally came the above-named Libor Kovarik, who executed the foregoing instrument in my presence, and who acknowledged to me that she executed the same of her own free will for the purposes set forth therein.

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Notary Public for the State of Washington My commission expires: 12920

[SEAL]

Executed at <u>Richland</u>, State of <u>Washington</u>, this <u>23rol</u> day of <u>August</u>, 2019.

re G

Feng Gao

STATE OF <u>WASHINGTON</u>)) ss. COUNTY OF <u>Benton</u>)

This <u>23</u>^o day of <u>August</u>, 2019, before me personally came the above-named Feng Gao, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.

Notary Public for the State of Washington

My commission expires: 1/29/20



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Executed at Richland, State of Washington, this 30th day of August _, 2019.

Yong Wang

STATE OF Washington) SS. COUNTY OF Benton

This 30th day of August, 2019, before me personally came the above-named Yong Wang, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



Notary Public for the State of Washington My commission expires: 1/29/20

[SEAL]