505924183 02/19/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5970901

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YOUNG-JIN KIM	07/15/2019
SUN-YOUNG CHA	07/11/2019

RECEIVING PARTY DATA

Name:	LG CHEM, LTD.	
Street Address:	128, YEOUI-DAERO, YEONGDEUNGPO-GU	
City:	SEOUL	
State/Country:	KOREA, REPUBLIC OF	
Postal Code:	07336	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16640184

CORRESPONDENCE DATA

Fax Number: (202)739-3001

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: 2027393000

Email: patents@morganlewis.com, jovelita.faroog@morganlewis.com

Correspondent Name: COLLIN W. PARK

Address Line 1: MORGAN, LEWIS & BOCKIUS LLP
Address Line 2: 1111 PENNSYLVANIA AVENUE NW

Address Line 4: WASHINGTON, D.C. 20004

ATTORNEY DOCKET NUMBER:	121594-5074	
NAME OF SUBMITTER:	ROBERT J. GOODELL	
SIGNATURE:	/Robert J. Goodell/	
DATE SIGNED:	02/19/2020	

Total Attachments: 4

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> PATENT REEL: 051860 FRAME: 0427

505924183

Attorney Docket No.

COMBINED DECLARATION & ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION		
Title	APPARATUS AND METHOD FOR ESTIMATING STATE OF CHARGE OF SECONDARY BATTERY	
DECLARATION		
As a below na	ned inventor, I hereby declare that:	
This declaration	n is directed to:	
D1	The attached application, or	
U.S. application or PCT international application number <u>PCT/KR2018/011072</u> filed on <u>September 19, 2018.</u>		
The above-ide	ntified application was made or authorized to be made by me.	
believe that	am the original inventor or an original joint inventor of a claimed invention in the application.	
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.		
Note to Inventor: 37 C.F.R. § 1.63(c) states: A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 1.56.		
ASSIGNMENT		
WHEREAS, I ha	eve made an invention described and/or claimed in the above-identified application; and	
WHEREAS, LG CHEM, LTD., a corporation of the Republic of Korea whose post office address is 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, 07336, Republic of Korea (hereinafter referred to as the "Assignee"), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application of United States Letters Patent on this invention and the Letters Patent to be issued upon this application;		
NOW THEREFORE, be it known that, for good and valuable consideration the receipt of which from the Assignee is hereby acknowledged, I have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, and its lawful successors and assigns, my entire right, title, and interest in and to this invention and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority on the basis of such applications, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Director of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent of this invention to the Assignee, and its successors and assigns, in accordance with the terms of this Assignment:		

Morgan, Lewis & Bocklus LLP



COMBINED DECLARATION & ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment;

AND, I HEREBY further covenant and agree that I will, without further consideration, communicate with the Assignee, and its successors and assigns, any facts known to me 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, and its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid the Assignee, and its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, and its successors and assigns.

IN TESTIMONY WHEREOF, I have hereunto set my hands.	
First Inventor (Full Legal Name): KIM, Young-Jin Signature:	Date:
Second Inventor (Full Legal Name): CHA, Sun-Young Signature:	Date:
Third Inventor (Full Legal Name): Signature:	
Fourth Inventor (Full Legal Name): Signature:	
Fifth Inventor (Full Legal Name): Signature:	Date:
Sixth Inventor (Full Legal Name): Signature:	Date:
Seventh inventor (Full Legal Name): Signature:	Date:

Morgan, Lewis & Bockius LLP



PATENT REEL: 051860 FRAME: 0429

COMBINED DECLARATION & ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION	
Title	APPARATUS AND METHOD FOR ESTIMATING STATE OF CHARGE OF SECONDARY BATTERY
DECLARATION	
As a below nar	ned inventor, I hereby declare that:
This declaratio	n is directed to:
The attached application, or	
U.S. application or PCT international application number <u>PCT/KR2018/011072</u> filed on <u>September 19, 2018.</u>	
The above-identified application was made or authorized to be made by me.	
I believe that I	am the original inventor or an original joint inventor of a claimed invention in the application.
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.	
Note to Inventor: 37 C.F.R. § 1.63(c) states: A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in § 1.56.	
ASSIGNMENT	
WHEREAS, I ha	ave made an invention described and/or claimed in the above-identified application; and
WHEREAS, LG CHEM, LTD., a corporation of the Republic of Korea whose post office address is 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, 07336, Republic of Korea (hereinafter referred to as the "Assignee"), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application of United States Letters Patent on this invention and the Letters Patent to be issued upon this application;	
NOW THEREFORE, be it known that, for good and valuable consideration the receipt of which from the Assignee is hereby acknowledged, I have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, and its lawful successors and assigns, my entire right, title, and interest in and to this invention and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority on the basis of such applications, and all applications for Letters Patent which may hereafter be filled for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Director of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent of this invention to the Assignee, and its successors and assigns, in accordance with the terms of this Assignment:	

Morgan, Lewis & Bockius LLP



COMBINED DECLARATION & ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment;

AND, I HEREBY further covenant and agree that I will, without further consideration, communicate with the Assignee, and its successors and assigns, any facts known to me 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, and its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid the Assignee, and its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, and its successors and assigns.

IN TESTIMONY WHEREOF, I have hereunto set my hand	S.
First Inventor (Full Legal Name): KIM, Young-Jin	
Signature:	Date:
Second Inventor (Full Legal Name): CHA, Sun-Young	
Signature:	Date:
Third Inventor (Full Legal Name):	
Signature:	Date:
Fourth Inventor (Full Legal Name):	
Signature:	Date:
Fifth Inventor (Full Legal Name):	
Signature:	Date:
Sixth Inventor (Full Legal Name):	
Signature:	Date:
Seventh Inventor (Full Legal Name):	
Signature:	Date:

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PATENT REEL: 051860 FRAME: 0431

RECORDED: 02/19/2020