### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4533592

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
JINHONG PARK	12/13/2016
HYOUNGSUK LEE	12/13/2016
JONG MOON YOON	07/17/2017
BOHYON KIM	12/13/2016
SOON CHANG HONG	12/13/2016

#### **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:	15123572

#### **CORRESPONDENCE DATA**

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Address Line 4: FALLS CHURCH, VIRGINIA 22042

	_ <del>_</del>
ATTORNEY DOCKET NUMBER:	0808-0499PUS1
NAME OF SUBMITTER:	BRIAN OLIVE
SIGNATURE:	/brian olive/
DATE SIGNED:	08/03/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).
	•

Total Attachments: 5

PATENT REEL: 043183 FRAME: 0052

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source=2017-08-03\_Dec\_and\_Assignment\_with\_Substitute\_Statement\_0808-0499PUS1#page1.tif source=2017-08-03\_Dec\_and\_Assignment\_with\_Substitute\_Statement\_0808-0499PUS1#page2.tif source=2017-08-03\_Dec\_and\_Assignment\_with\_Substitute\_Statement\_0808-0499PUS1#page3.tif source=2017-08-03\_Dec\_and\_Assignment\_with\_Substitute\_Statement\_0808-0499PUS1#page4.tif source=2017-08-03\_Dec\_and\_Assignment\_with\_Substitute\_Statement\_0808-0499PUS1#page5.tif

PATENT REEL: 043183 FRAME: 0053

## BIRCH, STEWART, KOLASCH & BIRCH, LLP

P.O. Box 747 • Falls Church, Virginia 22040-0747 Telephone: (703) 205-8000 • Facsimile: (703) 205-8050 • Email: mailroom@bskb.com

# DECLARATION AND ASSIGNMENT FOR PATENT AND DESIGN APPLICATIONS

UNITED STATES PATENT RIGHTS, OR
UNITED STATES PLUS ALL FOREIGN PATENT RIGHTS

	United States Plus all Foreign Patent Richts						
Title of Invention	→ BATTERY MODULE INCLUDING VOLTAGE SENSING MEMBER HAVING RECEPTACLI STRUCTURE						
કુ <sup>1</sup> જ	As a below named inventor (hereinafter designated as the undersigned), I hereby declare that:						
,	This declaration is directed to the application attached hereto.						
Application not Attached	If the application is not attached hereto, the application is as identified by the attorney docket number as set forth above and/or the following:						
Enter Appln. No.	<sup>⇔</sup> United States Application Number or PCT International Appln. No. 15/123,572						
Enter Filing Date	⇒ filed on September 02,2016						
	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 have reviewed and understand the contents of the above-identified application, including the claims.						
t V	I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations § 1.56.						
,	WHEREAS, the undersigned has invented certain new and useful improvements described in thapplication identified.						
Insert Name of Assignee	** WHEREAS, LG CHEM, LTD.						
Insert Address of Assignee	♦ of 128, Yeoui-daero, Yeongdeungpo-gu, Seoul 07336, Republic of Korea,						
	its heirs, successors, legal representatives and assigns (hereinafter designated as the Assignee) is desirou of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent(s that may be granted therefor in the United States of America and						
Check Box If Appropriate	⇒ ☐ in any foreign countries.						
	NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged the undersigned has sold, assigned and transferred, and by these presents does (do) sell, assign and transfer unto said Assignee the full and exclusive right to the said invention in the United States of America, its territories, dependencies and possessions and the entire right, title and interest in and to an and all Letters Patent(s) which may be granted therefor in the United States of America, its territories dependencies and possessions, and if the box above is designated, in any and all foreign countries; and to any and all divisions, reissues, continuations, conversions and extensions thereof for the full term of terms for which the same may be granted.						

BSKB-DECASSIGN(09-12)

PATENT & LG Chem REEL: 043183 FRAME: 0054

Attorney Docket No.: 0808-0499PUS1

The undersigned agrees to execute all papers necessary in connection with this application and any continuing, divisional, conversion or reissue applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

The undersigned agrees to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation, division, conversion or reissue thereof or Letters Patent(s) or reissue patent issued thereon and to cooperate with the Assignee in every way possible in obtaining and producing evidence and proceeding with such interference.

The undersigned agrees to execute all papers and documents and to perform any act which may be necessary in connection with claims or provisions of the International Convention for the Protection of Industrial Property or similar agreements.

The undersigned agrees to perform all affirmative acts which may be necessary to obtain a grant of (a) valid United States of America patent(s) or a grant of (a) valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

The undersigned hereby authorizes and requests the Patent and Trademark Office Officials in the United States of America and in any foreign countries to issue any and all Letters Patent(s) resulting from said application or any continuing, divisional conversion or reissue applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has the full right to convey the entire interest herein assigned, and that he has not executed, and will not execute, any agreement in conflict herewith.

The undersigned hereby grants the law firm of Birch, Stewart, Kolasch & Birch, LLP the power to insert any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

The undersigned hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

The undersigned hereby acknowledges 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.

In witness whereof, executed by the undersigned on the date opposite the undersigned name.

LEGAL NAME OF INVENTOR	, , ,
threntor's Name	Date: 13/12/2016
Inventor's Signature & Signature: park jin Hong.	
An application data sheet (PTO/SB/14 or equivalent), including naming the eu-	ntire inventive entity, must accompany this form. the attached page(s) to list additional inventors.
Additional inventors are being named on the 1_supplemental sheet(s) at	ttached hereto.

PATENT © LG Chem



# SUPPLEMENTAL SHEET FOR DECLARATION AND ASSIGNMENT

# ADDITIONAL INVENTOR(S) Supplemental Sheet Page 1 of 1

	LEGALNA	AME OF JOINT INVENTOR, IF ANY		
inventor's Name — ~	Inventor:		_	13/12/2016
inventor's Signature 🗢	Signature:	<u></u>		
	LEGAL N	ame of joint inventor, if any		
Inventor's Name	Inventor:	Jong Moon YOON	Date:	
inventor's Signature ←	Signature:			<u></u>
	LEGAL N	AME OF JOINT INVENTOR, IF ANY		
•	⇔inventor:			13/12/2016
Inventor's Signature	<sup>©</sup> Signature:	745m	,	
	LEGAL N	AME OF JOINT INVENTOR, IF ANY		
		Soon Chang HONG	Date: .	13/12/20/6
Inventor's Signature	<sup>o</sup> Signature:	4		
	LEGALN	ame of joint inventor, if any		
Inventor's Name	olinventor:		Date:	
Inventor's Signature	⇔Signature:	***		
	LEGAL N	AME OF JOINT INVENTOR, IF ANY		,
Inventor's Name	**Inventor:		Date:	
Inventor's Signature	⇔Signature:	<u></u>		
•	LEGALN	AME OF JOINT INVENTOR, IF ANY		•
Inventor's Name	olinventor:		Date:	
Inventor's Signature	⇒Signature:		<b></b>	
•	LEGAL N	iame of joint inventor, if any		
Inventor's Name	™Inventor:		Date:	<del></del>
Inventor's Signature	⇔Signature:		<del></del>	iiiiiiiii.

HSKB-DECASSION\(09-12)



PATENT REEL: 043183 FRAME: 0056

Attorney Docket No.: 0808-0499PUS1

Doc code: Oath

Document Description: Oath or declaration filed

PTO/AIA/02 (07-13) Approved for use through 01/31/2014. OMB 0551-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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### SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)

Title of Invention	BATTERY MODULE INCLUDING VOLTA	GE SENSING MEMBER HAVI	ING RECEPTACLE STRUCTU	RE
This stateme	ent is directed to:			
The atta	ached application,			
OR				
<b>V</b> ∪nîted 8	States application or PCT international	application number 15/123	,572 filed on	September 2, 2016
	ME of inventor to whom this sul		ies:	
l	Name (first and middle (if any)) and Fa	amily Name or Surname)		
Jong Moon Y		***************************************		
Residence (e	except for a deceased or legally incapa	acitated inventor):	T	
City Daejeon		State	Country KR	
	ss (except for a deceased or legally incapa	***************************************	JOODING V	
Research Par	k, LG Chem, Ltd., 188, Munji-ro, Yuseong-	gu		
*****	NOOCONNO AMERICA III.	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y		
City Daejeon		State	Zip. 34122	Country KR
I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application.				
The above-i	dentified application was made or auth	orized to be made by me.		
I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.				
Relationship to the inventor to whom this substitute statement applies:				
Legal Representative (for deceased or legally incapacitated inventor only),				
✓ Assignee,				
Person to whom the inventor is under an obligation to assign,				
Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or				
Joint Inventor.				

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTQ-9199 and select option 2.

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### SUBSTITUTE STATEMENT

Circumstances permittin	g execution of this substit	lute statement:	(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1		
Inventor is deceased,					
Inventor is und	er legal incapacity,				
✓ Inventor canno	t be found or reached afte	er diligent effort, or			
Inventor has re	fused to execute the oath	or declaration under 37 CI	FR 1.63.		
If there are joint invento	rs, please check the appr	opriate box below:			
An application or is currently s	data sheet under 37 CFR submitted.	1.76 (PTO/AIA/14 or equiv	valent) naming the enti	re inventive entity has been	
OR					
Statement Sup	data sheet under 37 CFR plemental Sheet (PTO/AL ttached. See 37 CFR 1.8	A/11 or equivalent) namino	valent) has not been su the entire inventive er	ibmitted. Thus, a Substitute titly and providing inventor	
	190-1100-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	WARNING:	***************************************		
Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identify theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.					
PERSON EXECUTING TI	IIS SUBSTITUTE STATE	MENT:			
Name: Min Ho KIM	Name: Min Ho KIM Date (Optional):				
	minha.				
APPLICANT NAME AND	TITLE OF PERSON EXE	CUTING THIS SUBSTITU	TE STATEMENT:		
If the applicant is a junsuo	entity, list the applicant n	ame and the title of the sig	nec		
Applicant Name: LG CHE	VI, LTD.				
Title of Person Executing This Substitute Statemen					
Residence of the signer	supplied above, is aumor (unless provided in an	ized to act on behalf of the application data sheet, P	applicant. TO/AIA/14 or equivale	intl:	
Daejeon	-				
City		State	Country	Republic of	
Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent)					
188, Munji-ro, Yuseong-gu					
Daejeon		**************************************	34122	Korea, Republic of	
City	Sta	te	Zio	Country	
Note: Use an additional P	TO/AIA/02 form for each i	inventor who is deceased,	legally incapacitated, o	annot be found or reached	
after diligent effort, or has refused to execute the oath or declaration under 37 GFR 1.63.					

[Page 2 of 2]

**RECORDED: 08/03/2017**