

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4278135

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JONG MO JUNG	01/09/2017
JONGHYUN CHAE	06/19/2015
CHUL HAENG LEE	11/17/2016
GEUN CHANG CHUNG	02/13/2017
YOUNG CHEOL CHOI	01/06/2017
YOUNG GEUN CHOI	01/11/2017
SEUNG JAE YOON	01/11/2017
RECEIVING PARTY DATA	
Name:	LG CHEM, LTD.
Street Address:	128, YEOUI-DAERO
Internal Address:	YEONGDEUNGPO-GU
City:	SEOUL
State/Country:	KOREA, REPUBLIC OF
Postal Code:	07336
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	14429694
CORRESPONDENCE DATA	
Fax Number:	(908)654-7866
<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>	
Phone:	(908) 654-5000
Email:	assignment@lerner david.com
Correspondent Name:	LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP
Address Line 1:	600 SOUTH AVENUE WEST
Address Line 4:	WESTFIELD, NEW JERSEY 07090
ATTORNEY DOCKET NUMBER:	LGCHEM 3.3F-634
NAME OF SUBMITTER:	TRACI KRAUSS
SIGNATURE:	/Traci Krauss/

DATE SIGNED:

02/16/2017

Total Attachments: 14

source=LGCHEM 3.3F-634 Assignment#page1.tif
source=LGCHEM 3.3F-634 Assignment#page2.tif
source=LGCHEM 3.3F-634 Assignment#page3.tif
source=LGCHEM 3.3F-634 Assignment#page4.tif
source=LGCHEM 3.3F-634 Assignment#page5.tif
source=LGCHEM 3.3F-634 Assignment#page6.tif
source=LGCHEM 3.3F-634 Assignment#page7.tif
source=LGCHEM 3.3F-634 Assignment#page8.tif
source=LGCHEM 3.3F-634 Assignment#page9.tif
source=LGCHEM 3.3F-634 Assignment#page10.tif
source=LGCHEM 3.3F-634 Assignment#page11.tif
source=LGCHEM 3.3F-634 Assignment#page12.tif
source=LGCHEM 3.3F-634 Assignment#page13.tif
source=LGCHEM 3.3F-634 Assignment#page14.tif

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	Attorney Docket Number: LGCHEM 3.3F-634 (E)
Title of Invention	LITHIUM SECONDARY BATTERY
<p>As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:</p> <p>This declaration is directed to:</p> <div style="margin-left: 40px;"> <input type="checkbox"/> The attached application, or <input checked="" type="checkbox"/> United States application or PCT International application number <u>14/429,694</u> filed on <u>March 19, 2015</u> </div>	
<p>The above-identified application was made or authorized to be made by me/us.</p> <p>I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>I/We 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.</p> <p>WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.</p> <p>AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.</p> <p>NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.</p>	
<p>FULL NAME OF INVENTOR(S)</p> <p>Inventor one: <u>Yourim Yoon</u> Date: _____</p> <p>Signature: _____</p>	
<p><input checked="" type="checkbox"/> Additional inventors or a legal representative are being named on <u>1</u> additional form(s) attached hereto.</p> <p style="text-align: center;">PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.</p>	



DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: <u>[Signature]</u>	Date: <u>Jan 09, 2017</u>
Inventor three: <u>Jonghyun Chae</u> Signature: _____	Date: _____
Inventor four: <u>Chul Haeng Lee</u> Signature: _____	Date: _____
Inventor five: <u>Geun Chang Chung</u> Signature: _____	Date: _____
Inventor six: <u>Young Cheol Choi</u> Signature: _____	Date: _____
Inventor seven: <u>Young Geun Choi</u> Signature: _____	Date: _____
Inventor eight: <u>Seung Jae Yoon</u> Signature: _____	Date: _____
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
WARNING: According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56." Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.	



**DECLARATION AND ASSIGNMENT FOR
UTILITY OR DESIGN APPLICATIONS****Attorney Docket Number:** LGCHEM 3.3F-634 (E)**Title of Invention** LITHIUM SECONDARY BATTERY

As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:

This declaration
is directed to:☐ The attached application, or☒ United States application or PCT international application number 14/429,694filed on March 19, 2015

The above-identified application was made or authorized to be made by me/us.

I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I/We 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.

WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.

AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.

NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.

FULL NAME OF INVENTOR(S)Inventor one: Yourim Yoon

Date: _____

Signature: _____

☒ Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.**PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.**

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: _____	Date: _____
Inventor three: <u>Jonghyun Chae</u> Signature: <u>Jonghyun Chae</u>	Date: <u>6. 19. 2015</u>
Inventor four: <u>Chul Haeng Lee</u> Signature: _____	Date: _____
Inventor five: <u>Geun Chang Chung</u> Signature: _____	Date: _____
Inventor six: <u>Young Cheol Choi</u> Signature: _____	Date: _____
Inventor seven: <u>Young Geun Choi</u> Signature: _____	Date: _____
Inventor eight: <u>Seung Jae Yoon</u> Signature: _____	Date: _____
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
<p align="center">WARNING:</p> <p>According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56."</p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.</p>	



**DECLARATION AND ASSIGNMENT FOR
UTILITY OR DESIGN APPLICATIONS****Attorney Docket Number:** LGCHEM 3.3F-634 (E)**Title of Invention**

LITHIUM SECONDARY BATTERY

As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:

This declaration
is directed to:☐ The attached application, or☒ United States application or PCT international application number 14/429,694filed on March 19, 2015

The above-identified application was made or authorized to be made by me/us.

I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I/We 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.

WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.

AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.

NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.

FULL NAME OF INVENTOR(S)Inventor one: Yourim Yoon

Date: _____

Signature: _____

☒ Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.**PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.**

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: _____	Date: _____
Inventor three: <u>Jonghyun Chae</u> Signature: _____	Date: _____
Inventor four: <u>Chul Haeng Lee</u> Signature: <u>[Signature]</u>	Date: <u>Nov. 17, 2016</u>
Inventor five: <u>Geun Chang Chung</u> Signature: _____	Date: _____
Inventor six: <u>Young Cheol Choi</u> Signature: _____	Date: _____
Inventor seven: <u>Young Geun Choi</u> Signature: _____	Date: _____
Inventor eight: <u>Seung Jae Yoon</u> Signature: _____	Date: _____
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
WARNING: According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56." Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.	

**DECLARATION AND ASSIGNMENT FOR
UTILITY OR DESIGN APPLICATIONS****Attorney Docket Number:** LGCHEM 3.3F-634 (E)**Title of Invention**

LITHIUM SECONDARY BATTERY

As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:

This declaration
is directed to:☐

The attached application, or

☒

United States application or PCT international application number

14/429,694

filed on March 19, 2015

The above-identified application was made or authorized to be made by me/us.

I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I/We 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.

WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.

AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.

NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.

FULL NAME OF INVENTOR(S)

Inventor one: Yourim Yoon

Date: _____

Signature: _____

☒

Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.

PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: _____	Date: _____
Inventor three: <u>Jonghyun Chae</u> Signature: _____	Date: _____
Inventor four: <u>Chul Haeng Lee</u> Signature: _____	Date: _____
Inventor five: <u>Geun Chang Chung</u> Signature: <u>[Signature]</u>	Date: <u>FEB 13. 2017</u>
Inventor six: <u>Young Cheol Chol</u> Signature: _____	Date: _____
Inventor seven: <u>Young Geun Choi</u> Signature: _____	Date: _____
Inventor eight: <u>Seung Jae Yoon</u> Signature: _____	Date: _____
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
WARNING: According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56." Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.	



**DECLARATION AND ASSIGNMENT FOR
UTILITY OR DESIGN APPLICATIONS****Attorney Docket Number:** LGCHEM 3.3F-634 (E)**Title of Invention** LITHIUM SECONDARY BATTERY

As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:

This declaration
is directed to:☐ The attached application, or☒ United States application or PCT international application number 14/429,694filed on March 19, 2015

The above-identified application was made or authorized to be made by me/us.

I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I/We 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.

WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.


AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.

NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.

FULL NAME OF INVENTOR(S)Inventor one: Yourim Yoon Date: _____

Signature: _____

☒ Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.**PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.**

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: _____	Date: _____
Inventor three: <u>Jonghyun Chae</u> Signature: _____	Date: _____
Inventor four: <u>Chul Haeng Lee</u> Signature: _____	Date: _____
Inventor five: <u>Geun Chang Chung</u> Signature: _____	Date: _____
Inventor six: <u>Young Cheol Choi</u> Signature: <u></u>	Date: <u>January 6, 2017</u>
Inventor seven: <u>Young Geun Choi</u> Signature: _____	Date: _____
Inventor eight: <u>Seung Jae Yoon</u> Signature: _____	Date: _____
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
<p>WARNING:</p> <p>According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56."</p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.</p>	

**DECLARATION AND ASSIGNMENT FOR
UTILITY OR DESIGN APPLICATIONS****Attorney Docket Number:** LGCHEM 3.3F-634 (E)**Title of Invention** LITHIUM SECONDARY BATTERY

As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:

This declaration
is directed to:☐ The attached application, or☒ United States application or PCT international application number 14/429,694filed on March 19, 2015

The above-identified application was made or authorized to be made by me/us.

I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I/We 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.

WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.

AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.

NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.

FULL NAME OF INVENTOR(S)Inventor one: Yourim Yoon Date: _____

Signature: _____

☒ Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.

PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: _____	Date: _____
Inventor three: <u>Jonghyun Chae</u> Signature: _____	Date: _____
Inventor four: <u>Chul Haeng Lee</u> Signature: _____	Date: _____
Inventor five: <u>Geun Chang Chung</u> Signature: _____	Date: _____
Inventor six: <u>Young Cheol Choi</u> Signature: _____	Date: _____
Inventor seven: <u>Young Geun Choi</u> Signature: <u>[Signature]</u>	Date: <u>1/11/2019</u>
Inventor eight: <u>Seung Jae Yoon</u> Signature: _____	Date: _____
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
WARNING: According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56." Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.	

**DECLARATION AND ASSIGNMENT FOR
UTILITY OR DESIGN APPLICATIONS****Attorney Docket Number:** LGCHEM 3.3F-634 (E)**Title of Invention** LITHIUM SECONDARY BATTERY

As the below named inventor(s) (hereinafter designated as the undersigned), I/We hereby declare that:

This declaration
is directed to:☐ The attached application, or☒ United States application or PCT international application number 14/429,694filed on March 19, 2015

The above-identified application was made or authorized to be made by me/us.

I/We believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I/We 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.

WHEREAS, the undersigned as a sole inventor (if only one name is listed below) or as a joint inventor (if plural names are listed below) has invented certain new and useful improvements in the application identified above.

AND, WHEREAS LG Chem, Ltd., (hereinafter referred to as assignee), a corporation of Korea whose mailing address is 128, Yeoui-daero; Yeongdeungpo-gu; Seoul; REPUBLIC OF KOREA 150-721 is desirous of acquiring the entire right, title and interest in the same.

NOW, THEREFORE, in consideration of the sum of one dollar, the receipt whereof is acknowledged, and other good and valuable consideration, the undersigned hereby sell(s), assign(s) and set(s) over to said assignee my/our entire right, title and interest for the United States of America and all other countries in and to said invention and the aforesaid utility patent application and all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries, for said invention, including without limitation all applications and patents for said invention claiming priority or benefit of the aforesaid utility application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said improvements or resulting therefrom to said assignee herein, as assignee of the entire interest therein; and the undersigned for me/us and my/our legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, reissue and other applications for Letters Patent on said improvements and all assignments thereof to said assignee or its assigns, to communicate to said assignee or its representatives all facts known to the undersigned respecting said improvements, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by said assignee.

FULL NAME OF INVENTOR(S)Inventor one: Yourim Yoon

Date: _____

Signature: _____

☒ Additional inventors or a legal representative are being named on 1 additional form(s) attached hereto.**PLEASE SEE THE WARNINGS ON THE LAST PAGE OF THIS FORM.**

DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATIONS	ADDITIONAL INVENTOR(S) Supplemental Sheet
Inventor two: <u>Jong Mo Jung</u> Signature: _____	Date: _____
Inventor three: <u>Jonghyun Chae</u> Signature: _____	Date: _____
Inventor four: <u>Chul Haeng Lee</u> Signature: _____	Date: _____
Inventor five: <u>Geun Chang Chung</u> Signature: _____	Date: _____
Inventor six: <u>Young Cheol Choi</u> Signature: _____	Date: _____
Inventor seven: <u>Young Geun Choi</u> Signature: _____	Date: _____
Inventor eight: <u>Seung Jae Yoon</u> Signature: <u><i>Seung Jae Yoon</i></u>	Date: <u>2017. 1. 11</u>
Inventor nine: _____ Signature: _____	Date: _____
Inventor ten: _____ Signature: _____	Date: _____
WARNING: According to 37 C.F.R. 1.63 (c), "[a] person may not execute an oath or declaration unless the 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 be material to patentability as defined in 1.56." Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity 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.	