

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3575856

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	VERTICLE, INC.	10/05/2015
RECEIVING PARTY DATA		
Name:	VERTICLE, INC.	
Street Address:	5TH FLOOR, WOORITECHNOLOGY BLDG.	
Internal Address:	1593 SANGAM-DONG, MAPO-GU	
City:	SEOUL	
State/Country:	KOREA, REPUBLIC OF	
Postal Code:	121-835	
PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	11117084
CORRESPONDENCE DATA		
Fax Number:		
<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>		
Email:	cmalone@mintz.com	
Correspondent Name:	MINTZ LEVIN/SPECIAL GROUP	
Address Line 1:	ONE FINANCIAL CENTER	
Address Line 4:	BOSTON, MASSACHUSETTS 02111	
ATTORNEY DOCKET NUMBER:	48097-501001US	
NAME OF SUBMITTER:	KONGSIK KIM	
SIGNATURE:	/Kongsik Kim/	
DATE SIGNED:	10/19/2015	
Total Attachments: 2		
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ASSIGNMENT	
Title of Invention	METHOD OF MAKING VERTICAL STRUCTURE SEMICONDUCTOR DEVICES INCLUDING FORMING HARD AND SOFT COPPER LAYERS
<p>We, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, confirm that we have sold and assigned, and do hereby assign, sell and transfer to the ASSIGNEE listed below: (1) our entire right, title and interest for the United States and in all countries, in and to any and all inventions, discoveries and applications which are disclosed in:</p> <p><input type="checkbox"/> The application attached hereto. <input checked="" type="checkbox"/> United States Application No. 11/117,084 filed on 04-27-2005. <input type="checkbox"/> Application No(s) and/or Patent No(s) listed in the attached.</p> <p>including any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof and any substitute applications therefor; (2) the full and complete right to file patent applications in the name of the ASSIGNEE, its designee, or in our name as the ASSIGNEE, or its designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right, title and interest in and to any Letters Patent which may issue thereon in the United States or in any country, and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the above inventions, discoveries and applications.</p>	
Name of Assignee	Address
VERTICLE, INC.	5TH FLOOR, WOORITECHNOLOGY BLDG. 1593 SANGAM-DONG, MAPO-GU SEOUL, KOREA, REPUBLIC OF 121-835
<p>We hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in the United States and throughout the world to the ASSIGNEE of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.</p> <p>We agree, at any time, upon the request of the ASSIGNEE, to execute and to deliver to the ASSIGNEE any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries, or applications and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.</p>	

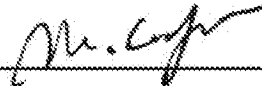
We further agree at any time to execute and to deliver upon request of the ASSIGNEE such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do the necessary to give full effect to and to perfect the rights of the ASSIGNEE under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

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

We further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

Any attorney or agent of record and any registered attorney or agent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111, telephone (617) 542-6000, is hereby authorized to insert, when known.

Signature of Assignor

Signature	
Date	October 5, 2015
Name of Assignor	Verticle, Inc.
Name of person who signs on behalf of Applicant (if Applicant is an organization)	Yoo, Myung cheol
Title of person who signs on behalf of Applicant (if Applicant is an organization)	President