503890542 06/27/2016

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3937191

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KWAN-YONG LIM	06/22/2016
RYAN RYOUNG-HAN KIM	06/22/2016
MOTOI ICHIHASHI	06/22/2016
YOUNGTAG WOO	06/22/2016
DEEPAK NAYAK	06/22/2016

RECEIVING PARTY DATA

Name:	GLOBALFOUNDRIES INC.	
Street Address:	PO BOX 309	
Internal Address:	UGLAND HOUSE	
City:	GRAND CAYMAN	
State/Country:	CAYMAN ISLANDS	
Postal Code:	KY1-1104	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15193867

CORRESPONDENCE DATA

Fax Number: (518) 452 - 5579

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: 518-452-5600 wfr@hrfmlaw.com Email: WAYNE F. REINKE **Correspondent Name:** Address Line 1: 5 COLUMBIA CIRCLE

Address Line 2: HESLIN ROTHENBERG FARLEY & MESITI P.C.

Address Line 4: ALBANY, NEW YORK 12203

ATTORNEY DOCKET NUMBER:	3718.320/HALB138
NAME OF SUBMITTER:	WAYNE F. REINKE
SIGNATURE:	/Wayne F. Reinke/
DATE SIGNED:	06/27/2016
This document serves as an Oath/Declaration (37 CFR 1.63).	

REEL: 039020 FRAME: 0356

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Total Attachments: 5

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COMBINED DECLARATION and ASSIGNMENT (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	VËRTICAL CHANNEL TRANSISTOR-BASED SEMICONDUCTOR MEMORY STRUCTURE	
	DECLARATION	
As the below	named inventor, I hereby declare that:	
This declaration The attached application, or is directed to:		
	United States application or PCT international application number filed on	
The above-identified application was made or authorized to be made by me.		
I believe that	am the original inventor or an original joint inventor of a claimed invention in the application.	
I hereby acka fine or impris	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by onment of not more than five (5) years, or both.	
I have review Trademark O	ed and understand the contents of the application and am aware of the duty to disclose to the US Patent and flice all information known to me to be material to patentability as defined in 37 CFR § 1.56.	
	ASSIGNMENT	
For good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, I hereby sell, assign, transfer, to GLOBALFOUNDRIES Inc. having a business address of PO Box 309, Ugland House, Grand Cayman KYI-1104 its successors and assigns, absolutely and forever, my entire right, title and interest in and to the invention listed above, together with the Application, any and all Patents that may issue in the United States and/or any foreign countries, and any reissues, re-examinations, renewals, continuations, continuation-in-parts, divisionals or extensions thereof that may be issued or granted, and all right, title and interest to the inventions contained in said Patents and Applications, for the United States and all foreign countries, and all the rights and privileges relating thereto including but not limited to the priority rights arising from said Applications, the right to recover and take all such proceedings as may be necessary for the recovery of damages or otherwise in respect of past, present and future infringement, and the right to apply for, take and maintain patents on said inventions.		
If any portion of this Combined Declaration or Assignment is held unenforceable, then remaining portions hereof shall nevertheless remain in full force and effect.		
LEGAL NAN	IB OF INVENTOR	
Inventor	Kwan-Yong LIM Date: 5/22/20/6	
Signature:		
Note: An appli Use an addition	cation data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. (al form for each additional inventor.	

COMBINED DECLARATION and ASSIGNMENT (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	VERTICAL CHANNEL TRANSISTOR-BASED SEMICONDUCTOR MEMORY STRUCTURE	
	DECLARATION	
As the below	named inventor, I hereby declare that:	
This declaration is directed to:		
	United States application or PCT international application number filed on	
The above-ide	entified 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.	
	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by comment of not more than five (5) years, or both.	
	ed and understand the contents of the application and am aware of the duty to disclose to the US Patent and fice all information known to me to be material to patentability as defined in 37 CFR § 1.56.	
	ASSIGNMENT	
For good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, I hereby sell, assign, transfer, to GLOBALFOUNDRIES Inc. having a business address of PO Box 309, Ugland House, Grand Cayman KY1-1104 its successors and assigns, absolutely and forever, my entire right, title and interest in and to the invention listed above, together with the Application, any and all Patents that may issue in the United States and/or any foreign countries, and any reissues, re-examinations, renewals, continuations, continuation-in-parts, divisionals or extensions thereof that may be issued or granted, and all right, title and interest to the inventions contained in said Patents and Applications, for the United States and all foreign countries, and all the rights and privileges relating thereto including but not limited to the priority rights arising from said Applications, the right to recover and take all such proceedings as may be necessary for the recovery of damages or otherwise in respect of past, present and future infringement, and the right to apply for, take and maintain patents on said inventions.		
	of this Combined Declaration or Assignment is held unenforceable, then remaining portions hereof eless remain in full force and effect.	
LEGAL NAM	E OF INVENTOR	
Inventor:	Ryan Ryoung-Han KIM Date:	
Signature:		
	ration data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form.	

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COMBINED DECLARATION and ASSIGNMENT (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	VERTICAL CHANNEL TRANSISTOR-BASED SEMICONDUCTOR MEMORY STRUCTURE
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	United States application or PCT international application number filed on
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I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.
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I have review Trademark O	red and understand the contents of the application and am aware of the duty to disclose to the US Patent and ffice all information known to me to be material to patentability as defined in 37 CFR § 1.56.
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If any portion of this Combined Declaration or Assignment is held unenforceable, then remaining portions hereof shall nevertheless remain in full force and effect.	
LEGAL NAM	ME OF INVENTOR
Inventor:	Motoi ICHIHASHI Date: have 22, 20/6
Signature:	
Note: An appl Use an addition	lication data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. nal form for each additional inventor.

COMBINED DECLARATION and ASSIGNMENT (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

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As the below	named inventor, I hereby declare that:	
This declarati	This declaration The attached application, or	
is directed to.		or PCT international application number filed on
The above-id	entified application was made or authori	zed 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 ackn fine or impris	nowledge that any willful false statement somment of not more than five (5) years,	made in this declaration is punishable under 18 U.S.C. 1001 by or both.
I have reviewed and understand the contents of the application and am aware of the duty to disclose to the US Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR § 1.56.		
	· ·	ASSIGNMENT
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If any portion of this Combined Declaration or Assignment is held unenforceable, then remaining portions hereof shall nevertheless remain in full force and effect.		
LEGAL NAM	ME OF INVENTOR	\$ \$
Inventor:	Youngtag WOO	Date: 6/22/2016
Signature:	- <u>Da C//4</u>	
	lication data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form.

COMBINED DECLARATION and ASSIGNMENT (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

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Inventor: Signature	: Dayan
Note: An app Use an addition	dication data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Onal form for each additional inventor.

PATENT REEL: 039020 FRAME: 0362

RECORDED: 06/27/2016