502692270 02/24/2014

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT2738876

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
TETSUYA NISHIZUKA	02/12/2014
MASAHIKO TAKAHASHI	02/11/2014

RECEIVING PARTY DATA

Name:	TOKYO ELECTRON LIMITED	
Street Address:	3-1, AKASAKA 5-CHOME, MINATO-KU	
City:	ТОКУО	
State/Country:	JAPAN	
Postal Code:	107-6325	

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	14187609	

CORRESPONDENCE DATA

Fax Number: (860)286-0115 **Phone**: 860-286-2929

Email: usptopatentmail@cantorcolburn.com

Correspondence will be sent via US Mail when the email attempt is unsuccessful.

Correspondent Name: CANTOR COLBURN LLP
Address Line 1: 20 CHURCH STREET
Address Line 2: 22ND FLOOR

Address Line 4: HARTFORD, CONNECTICUT 06103

ATTORNEY DOCKET NUMBER:	BPL0041USC
NAME OF SUBMITTER:	JAEGYOO JANG
Signature:	/Jaegyoo Jang/
Date:	02/24/2014 PATENT
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502692270 REEL: 032280 FRAME: 0414

This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

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> PATENT REEL: 032280 FRAME: 0415

DECLARATION AND ASSIGNMENT

Title of Invention: SEMICONDUCTOR DEVICE MANUFACTURING METHOD

As a below named inventor, I hereby declare that:

This declaration is directed to:

[A] i ne ar	tached application (Attorney Docket Number <u>BPL0041USC)</u> , or
[] 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 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 application, including the claims,

I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR Section 1.56.

Whereas, each undersigned inventor has made certain inventions, improvements, and discoveries (herein referred to as the "INVENTION") disclosed in the above-identified patent application (herein referred to as the ("APPLICATION");

Whereas, TOKYO ELECTRON LIMITED, a corporation of Japan having a place of business at 3-1, Akasaka 5-chome, Minato-ku, Tokyo 107-6325, Japan (herein referred to as "ASSIGNEE"), desires to acquire, and each undersigned inventor desires to grant to ASSIGNEE, the entire worldwide right, title, and interest in and to the INVENTION and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned inventor (herein referred to ASSIGNOR") hereby sells or has sold, assigns or has assigned, and otherwise transfers or has transferred to the ASSIGNEE, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the INVENTION, the APPLICATION, and any and all other patent applications and patents for the INVENTION which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, continuations-in-part, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, each undersigned inventor hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the INVENTION, to ASSIGNEE, its successors, legal representatives, and assigns, the entire worldwide right, fitle, and interest in and to the same to be held and enjoyed by ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made; and each undersigned inventor agrees to execute any and all

BPL0041USC

documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the INVENTION, the APPLICATION, and all related patents and applications, in ASSIGNEE, its successors, legal representatives, and assigns, whenever requested by ASSIGNEE, its successors, legal representatives, and assigns.

I hereby acknowledge that any willful false statement made in this declaration is punishable under18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Legal Name of In	ventor: Tetsuya NISHIZUKA	
Signature:	Terrya Walijah	Feb. 12, 2019 Date:
Legal Name of In	ventor: Masahiko TAKAHASHI	
Signature:		Date:

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[X] The attached application (Attorney Docket Number <u>BPL0041USC</u>), or
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The above-identified application was made or authorized to be made by me.

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Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned inventor (herein referred to ASSIGNOR") hereby sells or has sold, assigns or has assigned, and otherwise transfers or has transferred to the ASSIGNEE, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the INVENTION, the APPLICATION, and any and all other patent applications and patents for the INVENTION which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, continuations-in-part, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, each undersigned inventor hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the INVENTION, to ASSIGNEE, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made; and each undersigned inventor agrees to execute any and all

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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.

Legal Name of Inventor: Tetsuya NISHIZUKA	
Signature:	Date:
Legal Name of Inventor: Masahiko TAKAHASHI	
Signature: Masolula Fahahan	Date: 2/11/2014

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RECORDED: 02/24/2014

PATENT REEL: 032280 FRAME: 0419