PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5677828

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DEREK BASSETT	07/24/2019
ANTONIO ROTONDARO	08/14/2019
IHSAN SIMMS	07/24/2019
TRACE HURD	08/19/2019

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16517097

CORRESPONDENCE DATA

Fax Number:

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: 512.424.1000

Email: TEHIPDocket@us.tel.com

Correspondent Name: TOKYO ELECTRON U.S. HOLDINGS, INC.

Address Line 1: 2400 GROVE BLVD.

Address Line 4: AUSTIN, TEXAS 78741

ATTORNEY DOCKET NUMBER:	181007US02
NAME OF SUBMITTER: JORDAN GREGGERSEN	
SIGNATURE:	/Jordan Greggersen/
DATE SIGNED:	08/20/2019
This document serves as an Oath/Declaration (37 CFR 1.63).	
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Total Attachments: 6

PATENT REEL: 050107 FRAME: 0666

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PATENT REEL: 050107 FRAME: 0667

DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR NONPROVISIONAL UTILITY OR DESIGN PATENT APPLICATION

ETCHING OF SILICON NITRIDE AND SILICA DEPOSITION CONTROL IN 3D NAND STRUCTURES

is declaratio	n and assignment is	directed to:		
	and a section of the section of the section of	1. A. Colorado Baltaria Resourción Actividade	and the second s	
The atta	ached application has	ring a docket numb	per and title identified ab	ove, o
The atta	ached application has States application nu 16/517,097	ring a docket numb mber or PCT intern filed on	per and title identified ab national application num July 19, 2019	ove, i ber

I believe that I am the original inventor or an original joint inventor of a claimed invention in the above-identified application.

I have reviewed and understand the contents of the above-identified 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 C.F.R. § 1.56.

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.

Assignor(s): The Assignor(s) is/are the undersigned inventor(s). The inventor(s) named below has/have made certain inventions, improvements, and/or discoveries (herein referred to as the "Invention") disclosed in the above-identified patent application.

Assignee: The Assignee is Tokyo Electron Limited, a corporation of Japan having a place of business at Tokyo, Japan (herein referred to as the "ASSIGNEE"). The term "ASSIGNEE" used herein includes successors, legal representatives, and assigns of the ASSIGNEE. The ASSIGNEE desires to acquire the entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents obtained from the Invention.

As an undersigned inventor, I hereby assign to the ASSIGNEE my entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefrom in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, 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, I hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Patent, granted for the invention, to the ASSIGNEE, and I authorize and request foreign patent authorities to issue any foreign patent, granted for the Invention, to the ASSIGNEE. The entire worldwide right, title, and interest in and to the same to be held and enjoyed by the ASSIGNEE, 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. I agree to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or

Page 1 of 2

perfecting title to the Invention and all related patents and applications, for the ASSIGNEE, whenever requested by the ASSIGNEE.

As an undersigned inventor, I acknowledge prior and ongoing obligations to sell, assign, and/or transfer my rights in the Invention to the ASSIGNEE. I have not sold, assigned, or otherwise transferred my rights in the Invention to another, and I am under no obligation to sell, assign, or otherwise transfer my rights in the Invention to another. I also hereby grant the ASSIGNEE, the right to insert in this Declaration and Assignment any further identification (including, but not limited to, patent application number and filing date) which may be necessary or desirable for recording this Declaration and Assignment.

(1) Legal name of Inventor:	Derek Bassett
Inventor's Signature:	Date: 24 dw 2014
Residence City/State/Country:	Austin, TX, US
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US
Mailing Address:	1403 With Elm Co. Cadan Papel, TX 78613 WS
Citizenship:	USA
(2) Legal name of Inventor:	Antonio Rotondaro
Inventor's Signature:	Date:
Residence City/State/Country:	Austin, TX, US
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US
Mailing Address:	
Citizenship:	
(3) Legal name of Inventor:	Ihsan Simms
Inventor's Signature:	Jhn L Date: 7-34-19
Residence City/State/Country:	Austin, TX, US
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US
Mailing Address:	8801 Coffle Baron Path Austin TX78747
Citizenship:	<u> </u>
(4) Legal name of Inventor:	Trace Hurd
Inventor's Signature:	Date:
Residence City/State/Country:	Austin, TX, US
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US
Mailing Address:	
Citizenship:	

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ETCHING OF SILICON NITRIDE AND SILICA DEPOSITION CONTROL IN 3D NAND STRUCTURES

As a below named inventor, I hereby dec	clare that:	
This declaration and assignment is direc	ted to:	
The attached application having a United States application number 16/517,097	a docket nun or PCT inte filed on	nber and title identified above, or irnational application number July 19, 2019

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 above-identified application.

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Inventor's Signature:	Date:	
Residence City/State/Country:	Austin, TX, US	***************************************
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US	
Mailing Address:		
Citizenship:		
(2) Legal name of Inventor:	Antonio Rotondaro	
Inventor's Signature:	Date:	B - 14 - 2019
Residence City/State/Country:	The second secon	
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US	
Mailing Address:		
Citizenship:	<u>OSA</u>	
(3) Legal name of inventor:	Ihsan Simms	
Inventor's Signature:	Date:	
Residence City/State/Country:	Austin, TX, US	***************************************
Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US	
Mailing Address:		
Citizenship:		***************************************
(4) Legal name of Inventor:	Trace Hurd	
Inventor's Signature:	Date:	
Residence City/State/Country:	Austin, TX, US	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
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As a be	low named inventor, I hereby	y declare that:		
This de	claration and assignment is o	directed to:		
	The attached application hav United States application nur 16/517,097		er and title identified above, or ational application number July 19, 2019	
The abo	ove-identified application was	s made or authorize	ed to be made by me.	
	e that I am the original invent tified application.	or or an original joi	nt inventor of a claimed inventio	n in
I have n	eviewed and understand the	contents of the ab-	ove-identified application, includ	ina

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Citizenship:	
(2) Legal name of Inventor:	Antonio Rotondaro
Inventor's Signature:	Date:
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Mailing Address:	
Citizenship:	
(3) Legal name of Inventor:	Ihsan Simms
Inventor's Signature:	Date:
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Mailing Address:	
Citizenship:	
(4) Legal name of Inventor:	Trace Hurd
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Mailing Address:	2400 Grove Blvd., Austin, TX 78741, US
Mailing Address:	
Citizenship:	U S À

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