### 505764462 11/08/2019

### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5811278

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
MASAYUKI KITAMURA	10/11/2019
TAKAYUKI BEPPU	10/11/2019
TOMOTAKA ARIGA	10/11/2019

#### **RECEIVING PARTY DATA**

Name:	TOSHIBA MEMORY CORPORATION
Street Address:	1-1, SHIBAURA 1-CHOME, MINATO-KU
City:	TOKYO
State/Country:	JAPAN

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16567269

#### **CORRESPONDENCE DATA**

**Fax Number:** (703)413-2220

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.

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Correspondent Name: OBLON, ET AL.

Address Line 1: 1940 DUKE STREET

Address Line 4: ALEXANDRIA, VIRGINIA 22314

ATTORNEY DOCKET NUMBER:	525235US
NAME OF SUBMITTER:	ANDREW TRUMPLER
SIGNATURE:	/Andrew Trumpler/
DATE SIGNED:	11/08/2019
	This document serves as an Oath/Declaration (37 CFR 1.63).

#### **Total Attachments: 3**

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PATENT 505764462 REEL: 050958 FRAME: 0147

### DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

Title of	SUBSTRATE TREATMENT APPARATUS AND MANUFACTURING	
Invention	METHOD OF SEMICONDUCTOR DEVICE	
As the below named inve	entor, I hereby declare that:	
This declaration   The		
is directed to:   United States application or PCT international application number _16/567,269_ filed onSeptember 11,2019		
he above-identified application was made or authorized to be made by me.		
I believe that I am the or	iginal inventor or an original joint inventor of a claimed invention in the application.	
WHEREAS, TOSHIBA MEMORY CORPORATION (hereinafter referred to as "ASSIGNEE") having a place of business at: 1-1, Shibaura 1-Chome, Minato-Ku, Tokyo, Japan is desirous of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be granted therefore in the United States and its territorial possessions and in any and all foreign countries;		
NOW, THEREFORE, in consideration of the sum of FIVE DOLLARS (\$5.00), the receipt whereof is hereby acknowledged, and for other good and valuable consideration, I, by these presents do sell, assign and transfer unto said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries (including the right to claim priority under the terms of the International Convention and other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations, substitutions and renewals thereof.		
I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the assignee of my entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its (his) successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me had this Assignment and sale not been made.		
Further, I agree that I will communicate to said ASSIGNEE or its (his) representatives any facts known to me respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, substitute, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths, and, generally do everything possible to aid said ASSIGNEE, its (his) successors and assigns, to obtain and enforce proper protection for said invention in the United States and its territorial possessions and in any and all foreign countries.		
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		
Inventor: Masayuki KITAMURA  Signature: Masayuki KITAMURA  Date: Ot. 11, 2019		
Signature: Maray	1 tamura	

OBLON, McCLELLAND, MAIER & NEUSTADT, L.L.P.

ATTORNEYS AT LAW 1940 DUKE STREET ALEXANDRIA, VIRGINIA 22314

> PATENT REEL: 050958 FRAME: 0148

Toshiba's Ref: MJG10015849-US-A

# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

Title of Invention	SUBSTRATE TREATMENT APPARATUS AND MANUFACTURING METHOD OF SEMICONDUCTOR DEVICE
As the below named inver	ntor, I hereby declare that:
This declaration   The attached application, or is directed to:   United States application or PCT international application number _16/567,269 filed onSeptember 11,2019	
The above-identified appl	ication was made or authorized to be made by me.
I believe that I am the orig	ginal inventor or an original joint inventor of a claimed invention in the application.
WHEREAS, TOSHIBA MEMORY CORPORATION (hereinafter referred to as "ASSIGNEE") having a place of business at: 1-1, Shibaura 1-Chome, Minato-Ku, Tokyo, Japan is desirous of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be granted therefore in the United States and its territorial possessions and in any and all foreign countries;	
NOW, THEREFORE, in consideration of the sum of FIVE DOLLARS (\$5.00), the receipt whereof is hereby acknowledged, and for other good and valuable consideration, I, by these presents do sell, assign and transfer unto said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries (including the right to claim priority under the terms of the International Convention and other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations, substitutions and renewals thereof.	
I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the assignee of my entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its (his) successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me had this Assignment and sale not been made.	
Further, I agree that I will communicate to said ASSIGNEE or its (his) representatives any facts known to me respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, substitute, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths, and, generally do everything possible to aid said ASSIGNEE, its (his) successors and assigns, to obtain and enforce proper protection for said invention in the United States and its territorial possessions and in any and all foreign countries.	
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	
Inventor: Takayuki BEPPU Date: Oct. 11, 2019	
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OBLON, McCLELLAND, MAIER & NEUSTADT, L.L.P.

ATTORNEYS AT LAW 1940 DUKE STREET ALEXANDRIA, VIRGINIA 22314

> PATENT REEL: 050958 FRAME: 0149

Toshiba's Ref: MJG10015849-US-A

## DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE

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I believe that I am the orig	ginal inventor or an original joint inventor of a claimed invention in the application.	
WHEREAS, TOSHIBA MEMORY CORPORATION (hereinafter referred to as "ASSIGNEE") having a place of business at: 1-1, Shibaura 1-Chome, Minato-Ku, Tokyo, Japan is desirous of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be granted therefore in the United States and its territorial possessions and in any and all foreign countries;		
NOW, THEREFORE, in consideration of the sum of FIVE DOLLARS (\$5.00), the receipt whereof is hereby acknowledged, and for other good and valuable consideration, I, by these presents do sell, assign and transfer unto said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions and in all foreign countries (including the right to claim priority under the terms of the International Convention and other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations, substitutions and renewals thereof.		
I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the assignee of my entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its (his) successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held by me had this Assignment and sale not been made.		
Further, I agree that I will communicate to said ASSIGNEE or its (his) representatives any facts known to me respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, substitute, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths, and, generally do everything possible to aid said ASSIGNEE, its (his) successors and assigns, to obtain and enforce proper protection for said invention in the United States and its territorial possessions and in any and all foreign countries.		
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		
Inventor: Tomotaka ARIGA Date: Oct. 11 . 2019		
Signature: Tomotake Ariga		

OBLON, McCLELLAND, MAIER & NEUSTADT, L.L.P.

ATTORNEYS AT LAW 1940 DUKE STREET ALEXANDRIA, VIRGINIA 22314

> PATENT REEL: 050958 FRAME: 0150

**RECORDED: 11/08/2019**