502250920 03/03/2013

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT | |
|-----------------------|----------------|--|
| NATURE OF CONVEYANCE: | ASSIGNMENT | |

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------|----------------|
| Masanobu SHIRAKAWA | 02/26/2013 |

RECEIVING PARTY DATA

| Name: | abushiki Kaisha Toshiba | | |
|-----------------|----------------------------------|--|--|
| Street Address: | 1-1, Shibaura 1-chome, Minato-ku | | |
| City: | Tokyo | | |
| State/Country: | JAPAN | | |
| Postal Code: | 105-8001 | | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13783374 |

CORRESPONDENCE DATA

Fax Number: 7136234846

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

Phone: 713 623 4844

Email: psdocketing@pattersonsheridan.com, mguajardo@pattersonsheridan.com

Correspondent Name: Frederick D. Kim
Address Line 1: 3040 Post Oak Blvd

Address Line 2: Suite 1500

Address Line 4: Houston, TEXAS 77056

| ATTORNEY DOCKET NUMBER: | TAI/0199US |
|-------------------------|------------------|
| NAME OF SUBMITTER: | Frederick D. Kim |

Total Attachments: 2

source=TAI0199US_Assignment_20130303#page1.tif source=TAI0199US_Assignment_20130303#page2.tif

PATENT REEL: 029911 FRAME: 0150 OF \$40.00 13/833/4

ACG064228-USA-A

ASSIGNMENT FOR APPLICATION FOR PATENT

| | WHEREAS: | | | | |
|-----|---|--|--|--|--|
| Nam | Names and Addresses of Inventors: | | | | |
| | | | | | |
| 1) | Masanobu SHIRAKAWA Kanagawa-ken, Japan | | | | |

(hereinafter referred to as Assignors), have invented a certain invention entitled:

NONVOLATILE SEMICONDUCTOR MEMORY DEVICE

for which an application for Letters Patent in the United States:

| \boxtimes | is executed concurrently herewith. |
|-------------|------------------------------------|
| | was executed on |
| | was filed on under Serial No |

WHEREAS, Kabushiki Kaisha Toshiba, a Japanesecorporation, having a business address at 1-1, Shibaura 1-chome, Minato-ku, Tokyo, Japan (hereinafter collectively referred to as Assignee), are desirous of acquiring the entire right, title and interest in and to said application (hereinafter referred to as Application), and the invention disclosed therein (hereinafter referred to as Invention), and in and to all embodiments of the Invention, heretofore conceived, made or discovered by said Assignors, and in and to any and all patents, inventor's certificates and other forms of protection (hereinafter referred to as Patents) thereon granted in any and all countries and groups of countries.

NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignors to have been received in full from said Assignee:

- 1. Said Assignors hereby sell, assign, transfer and convey to Assignee the full and exclusive right, title and interest (a) in and to said Application and said Invention; (b) in and to all rights to apply for patents on said Invention in any and all countries pursuant to the International Convention for the Protection of Industrial Property or otherwise; (c) in and to any and all Applications filed and any and all Patents granted on said Invention in any and all countries and groups of countries, including each and every Application filed and each and every Patent granted on any application which is a conventional, division, substitution, continuation or continuation-in-part of said Application; and (d) in and to each and every reissue or extension of any of said Patents.
- 2. Said Assignors hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest to said Invention herein conveyed in any and all countries and groups of countries. Such cooperation by said Assignors shall include prompt production of pertinent facts and documents, giving testimony, execution of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any of said applications; (c) for filling and prosecuting substitute, conventional, divisional, continuing, continuation-in-part or additional applications covering said Invention; (d) for filling and prosecuting applications for reissuance of any of said Patents; (e) for interference or other priority proceedings involving said Invention; and (f) for legal proceedings involving said Invention and any application therefore and any Patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Assignors in providing such cooperation shall be paid for by said Assignee.
- 3. The term and covenants of this agreement shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Assignors, their respective heirs, legal representatives and assigns.

PATENT REEL: 029911 FRAME: 0151

| 4. | Said Assignors | hereby warrant | and represent | that they ha | ave not entere | d and | Will | not |
|----------------|------------------|------------------|------------------|--------------|----------------|-------|------|-----|
| enter into any | assignment, cont | act or understar | nding in conflic | t herewith. | | | | |

IN WITNESS WHEREOF, the said Assignors have executed and delivered this instrument to said Assignee on the dates indicated below.

teh 26,2013 (DATE) Thank Slinh Masanobu SHIRAKAWA

PATENT REEL: 029911 FRAME: 0152

104RECORDED: 03/03/2013