

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4163670

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|---|------------------------------------|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                     |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                         |
| <b>CONVEYING PARTY DATA</b>   |                                    |
| <b>Name</b>   | <b>Execution Date</b>              |
| NAOKI SHIMIZU   | 03/13/2014                         |
| JI HYAE BAE   | 05/23/2014                         |
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| <b>Street Address:</b>  | 2091, GYEONGCHUNG-DAERO, BUBAL-EUB |
| <b>City:</b>  | ICHEON-SI, GYEONGGI-DO             |
| <b>State/Country:</b>   | KOREA, REPUBLIC OF                 |
| <b>Postal Code:</b>   | 467-701                            |
| <b>PROPERTY NUMBERS Total: 1</b>  |                                    |
| <b>Property Type</b>  | <b>Number</b>                      |
| Application Number:   | 15365358                           |
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| <b>NAME OF SUBMITTER:</b>   | ALLYSON PLANDERS                   |
| <b>SIGNATURE:</b>   | /Allyson Planders/                 |

|   |            |
|---|------------|
| <b>DATE SIGNED:</b>   | 11/30/2016 |
| <b>Total Attachments: 4</b><br>source=13655CC1_Assign#page1.tif<br>source=13655CC1_Assign#page2.tif<br>source=13655CC1_Assign#page3.tif<br>source=13655CC1_Assign#page4.tif |            |

ASSIGNMENT

AMG066194-USA-B  
(13S0711)

In consideration of value received, I, having a residence as stated below above my name, the sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are listed below) of an invention described in an application for United States patent entitled:

SEMICONDUCTOR MEMORY DEVICE

have sold and assigned and do hereby sell and assign to

KABUSHIKI KAISHA TOSHIBA

a Japanese corporation, having a business address at  
1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan;

its successors, assigns or nominees, hereinafter referred to as "Assignee", my entire right, title and interest in and to said invention as disclosed, shown and described in said United States patent application:

(check one) ☒ executed concurrently herewith  
☐ executed on  
☐ Application No. 14/201,686 ; filed: March 7, 2014

and in and to all applications for patent and patents for invention including all divisions, reissues, continuations, substitutes and extensions thereof and all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property, including rights of priority, resulting from the filing of any of said applications; and I authorize and request any official whose duty is to issue patents, to issue any patent on said invention or resulting therefrom to said Assignee, and I agree that on request and without further consideration, but at the expense of said Assignee, I will communicate to said Assignee or its representatives all facts known to me respecting said invention and testify in any legal proceedings, sign all lawful papers, execute all divisional, continuing, continued prosecution, reissue, or other applications, make all rightful oaths and declarations, and generally do everything possible to aid said Assignee to obtain and enforce proper patent protection for said invention.

I hereby grant the following law firm the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the Rules of the U.S. Patent and Trademark Office for recordation of this document.

Holtz, Holtz, Goodman & Chick PC, 220 Fifth Avenue - 16th Floor, New York, N.Y.  
10001-7708

ASSIGNMENT

AMG066194-USA-B  
(13S0711)

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Naoki Shimizu

Date: 3/13/14

PATENT

REEL: 040470 FRAME: 0225

# ASSIGNMENT

(13S0711)

In consideration of value received, I, having a residence as stated below above my name, the sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are listed below) of an invention described in an application for United States patent entitled:

## SEMICONDUCTOR MEMORY DEVICE

have sold and assigned and do hereby sell and assign to

SK hynix Inc.

a Korean corporation, having a business address at

2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gyeonggi-do, Korea;

its successors, assigns or nominees, hereinafter referred to as "Assignee", my entire right, title and interest in and to said invention as disclosed, shown and described in said United States patent application:

(check one) ☒ executed concurrently herewith  
☐ executed on  
☐ Application No. 14/201,686, filed: March 7, 2014

and in and to all applications for patent and patents for invention including all divisions, reissues, continuations, substitutes and extensions thereof and all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property, including rights of priority, resulting from the filing of any of said applications; and I authorize and request any official whose duty is to issue patents, to issue any patent on said invention or resulting therefrom to said Assignee, and I agree that on request and without further consideration, but at the expense of said Assignee, I will communicate to said Assignee or its representatives all facts known to me respecting said invention and testify in any legal proceedings, sign all lawful papers, execute all divisional, continuing, continued prosecution, reissue, or other applications, make all rightful oaths and declarations, and generally do everything possible to aid said Assignee to obtain and enforce proper patent protection for said invention.

I hereby grant the following law firm the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the Rules of the U.S. Patent and Trademark Office for recordation of this document.

Holtz, Holtz, Goodman & Chick PC, 220 Fifth Avenue - 16th Floor, New York, N.Y.  
 10001-7708

ASSIGNMENT

(13S0711)

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Date:

May 23, 2014

SK hynix  
60445-136-092