

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4857345

|                                                                                                                                                                                                 |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>SUBMISSION TYPE:</b>                                                                                                                                                                         | NEW ASSIGNMENT                   |
| <b>NATURE OF CONVEYANCE:</b>                                                                                                                                                                    | ASSIGNMENT                       |
| <b>CONVEYING PARTY DATA</b>                                                                                                                                                                     |                                  |
|                                                                                                                                                                                                 |                                  |
| <b>Name</b>                                                                                                                                                                                     | <b>Execution Date</b>            |
| TATSUHIKO KOIDE                                                                                                                                                                                 | 03/05/2018                       |
| HIROYASU IIMORI                                                                                                                                                                                 | 03/01/2018                       |
| SHINSUKE KIMURA                                                                                                                                                                                 | 03/01/2018                       |
| <b>RECEIVING PARTY DATA</b>                                                                                                                                                                     |                                  |
| <b>Name:</b>                                                                                                                                                                                    | TOSHIBA MEMORY CORPORATION       |
| <b>Street Address:</b>                                                                                                                                                                          | 1-1, SHIBAURA 1-CHOME, MINATO-KU |
| <b>City:</b>                                                                                                                                                                                    | TOKYO                            |
| <b>State/Country:</b>                                                                                                                                                                           | JAPAN                            |
| <b>Postal Code:</b>                                                                                                                                                                             | 105-0023                         |
| <b>PROPERTY NUMBERS Total: 1</b>                                                                                                                                                                |                                  |
| <b>Property Type</b>                                                                                                                                                                            | <b>Number</b>                    |
| <b>Application Number:</b>                                                                                                                                                                      | 15915559                         |
| <b>CORRESPONDENCE DATA</b>                                                                                                                                                                      |                                  |
| <b>Fax Number:</b>                                                                                                                                                                              | (703)413-2220                    |
| <i>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.</i> |                                  |
| <b>Phone:</b>                                                                                                                                                                                   | (703) 413-3000                   |
| <b>Email:</b>                                                                                                                                                                                   | mkocijanski@oblon.com            |
| <b>Correspondent Name:</b>                                                                                                                                                                      | OBLON, ET AL.                    |
| <b>Address Line 1:</b>                                                                                                                                                                          | 1940 DUKE STREET                 |
| <b>Address Line 4:</b>                                                                                                                                                                          | ALEXANDRIA, VIRGINIA 22314       |
| <b>ATTORNEY DOCKET NUMBER:</b>                                                                                                                                                                  | 511864US                         |
| <b>NAME OF SUBMITTER:</b>                                                                                                                                                                       | MEGHAN KOCIJANSKI                |
| <b>SIGNATURE:</b>                                                                                                                                                                               | /Meghan Kocijanski/              |
| <b>DATE SIGNED:</b>                                                                                                                                                                             | 03/08/2018                       |
| This document serves as an Oath/Declaration (37 CFR 1.63).                                                                                                                                      |                                  |
| <b>Total Attachments: 3</b>                                                                                                                                                                     |                                  |
| source=511864USASN#page1.tif                                                                                                                                                                    |                                  |
| source=511864USASN#page2.tif                                                                                                                                                                    |                                  |
| source=511864USASN#page3.tif                                                                                                                                                                    |                                  |

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

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Title of Invention</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>SUBSTRATE TREATMENT APPARATUS AND SUBSTRATE TREATMENT METHOD</b> |
| <p>As the below named inventor, I hereby declare that:</p> <p>This declaration <input checked="" type="checkbox"/> The attached application, or<br/>         is directed to: <input type="checkbox"/> United States application or PCT international application number _____<br/>         filed on _____</p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>WHEREAS, <u>TOSHIBA MEMORY CORPORATION</u> (hereinafter referred to as "ASSIGNEE")<br/>         having a place of business at: <u>1-1, Shibaura 1-Chome, Minato-Ku, Tokyo 105-0023, Japan</u> is desirous of<br/>         acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be<br/>         granted therefore in the United States and its territorial possessions and in any and all foreign countries;</p> <p>NOW, THEREFORE, in consideration of the sum of FIVE DOLLARS (\$5.00), the receipt whereof is hereby<br/>         acknowledged, and for other good and valuable consideration, I, by these presents do sell, assign and transfer unto<br/>         said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions<br/>         and in all foreign countries (including the right to claim priority under the terms of the International Convention and<br/>         other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and<br/>         interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial<br/>         possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations,<br/>         substitutions and renewals thereof.</p> <p>I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and<br/>         any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the<br/>         assignee of my entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its<br/>         (his) successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and<br/>         entirely as the same would have been held by me had this Assignment and sale not been made.</p> <p>Further, I agree that I will communicate to said ASSIGNEE or its (his) representatives any facts known to me<br/>         respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional,<br/>         continuation, substitute, renewal and reissue applications, execute all necessary assignment papers to cause any and<br/>         all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths, and, generally do everything<br/>         possible to aid said ASSIGNEE, its (his) successors and assigns, to obtain and enforce proper protection for said<br/>         invention in the United States and its territorial possessions and in any and all foreign countries.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C.<br/>         1001 by fine or imprisonment of not more than five (5) years, or both.</p> |                                                                     |
| <b>LEGAL NAME OF INVENTOR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                     |
| Inventor: <u>Tatsuhiko KOIDE</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Date: <u>Mar. 5, 2018</u>                                           |
| Signature: <u>Tatsuhiko Koide</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                     |

**OBLON, McCLELLAND, MAIER & NEUSTADT, L.L.P.**  
 ATTORNEYS AT LAW  
 1940 DUKE STREET  
 ALEXANDRIA, VIRGINIA 22314

**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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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Title of<br/>Invention</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>SUBSTRATE TREATMENT APPARATUS AND SUBSTRATE<br/>TREATMENT METHOD</b> |
| As the below named inventor, I hereby declare that:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                         |
| This declaration <input checked="" type="checkbox"/> The attached application, or<br>is directed to: <input type="checkbox"/> United States application or PCT international application number _____<br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                         |
| WHEREAS, <u>TOSHIBA MEMORY CORPORATION</u> (hereinafter referred to as "ASSIGNEE")<br>having a place of business at: <u>1-1, Shibaura 1-Chome, Minato-Ku, Tokyo 105-0023, Japan</u> is desirous of<br>acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be<br>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<br>acknowledged, and for other good and valuable consideration, I, by these presents do sell, assign and transfer unto<br>said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions<br>and in all foreign countries (including the right to claim priority under the terms of the International Convention and<br>other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and<br>interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial<br>possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations,<br>substitutions and renewals thereof. |                                                                         |
| I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and<br>any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the<br>assignee of my entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its<br>(his) successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and<br>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<br>respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional,<br>continuation, substitute, renewal and reissue applications, execute all necessary assignment papers to cause any and<br>all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths, and, generally do everything<br>possible to aid said ASSIGNEE, its (his) successors and assigns, to obtain and enforce proper protection for said<br>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.<br>1001 by fine or imprisonment of not more than five (5) years, or both.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                         |
| <b>LEGAL NAME OF INVENTOR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                         |
| Inventor: <u>Hiroyasu IIMORI</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Date: <u>Mar. 1, 2018</u>                                               |
| Signature: <u>Hiroyasu Imori</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                         |

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| <b>Title of<br/>Invention</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SUBSTRATE TREATMENT APPARATUS AND SUBSTRATE<br>TREATMENT METHOD |
| <p>As the below named inventor, I hereby declare that:</p> <p>This declaration <input checked="" type="checkbox"/> The attached application, or<br/>is directed to: <input type="checkbox"/> United States application or PCT international application number _____<br/>filed on _____.</p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>WHEREAS, <u>TOSHIBA MEMORY CORPORATION</u> (hereinafter referred to as "ASSIGNEE")<br/>having a place of business at: <u>1-1, Shibaura 1-Chome, Minato-Ku, Tokyo 105-0023, Japan</u> is desirous of<br/>acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be<br/>granted therefore in the United States and its territorial possessions and in any and all foreign countries;</p> <p>NOW, THEREFORE, in consideration of the sum of FIVE DOLLARS (\$5.00), the receipt whereof is hereby<br/>acknowledged, and for other good and valuable consideration, I, by these presents do sell, assign and transfer unto<br/>said ASSIGNEE, the full and exclusive right to the said invention in the United States and its territorial possessions<br/>and in all foreign countries (including the right to claim priority under the terms of the International Convention and<br/>other relevant International Treaties and Arrangements from the aforesaid application) and the entire right, title and<br/>interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial<br/>possessions and in any and all foreign countries and in and to any and all divisions, reissues, continuations,<br/>substitutions and renewals thereof.</p> <p>I hereby authorize and request the Patent Office Officials in the United States and its territorial possessions and<br/>any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the<br/>assignee of my entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its<br/>(his) successors and assigns, to the full end of the term for which said Letters Patent may be granted, as fully and<br/>entirely as the same would have been held by me had this Assignment and sale not been made.</p> <p>Further, I agree that I will communicate to said ASSIGNEE or its (his) representatives any facts known to me<br/>respecting said invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional,<br/>continuation, substitute, renewal and reissue applications, execute all necessary assignment papers to cause any and<br/>all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths, and, generally do everything<br/>possible to aid said ASSIGNEE, its (his) successors and assigns, to obtain and enforce proper protection for said<br/>invention in the United States and its territorial possessions and in any and all foreign countries.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C.<br/>1001 by fine or imprisonment of not more than five (5) years, or both.</p> |                                                                 |
| <p>LEGAL NAME OF INVENTOR</p> <p>Inventor: <u>Shinsuke KIMURA</u> Date: <u>Mar. 1, 2018</u></p> <p>Signature: <u>Shinsuke Kimura</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                 |

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