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| PATENT ASSIGNMENT COVER SHEET |
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Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4693544

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| JEFFREY SMITH | 11/13/2017 |
| ANTON DE VILLIERS | 11/13/2017 |
| RECEIVING PARTY DATA | |
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| City: | TOKYO |
| State/Country: | JAPAN |
| Postal Code: | 107-6325 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 15812313 |
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| NAME OF SUBMITTER: | ANNA-ELISE ANDERSON |
| SIGNATURE: | /anna-elise anderson/ |
| DATE SIGNED: | 11/16/2017 |
| Total Attachments: 2 | |
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| source=507564USAssignment#page2.tif | |

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

Title of Invention: METHOD OF PREVENTING BULK SILICON CHARGE TRANSFER FOR
NANOWIRE AND NANOSLAB PROCESSING

As a below named inventor, I hereby declare that:

This declaration and assignment is directed to:

The attached application having a docket number and title identified above, or
United States application number or PCT international application number

_____ 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 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.

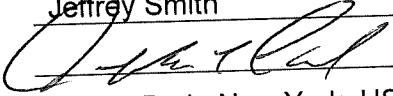
Assignor(s): The Assignor(s) is/are the undersigned inventor(s). The inventor(s) named below
has/have made certain inventions, improvements, and/or discoveries (herein referred to as the
"Invention") disclosed in the above-identified patent application.

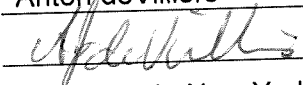
Assignee: The Assignee is **Tokyo Electron Limited**, a corporation of Japan having a place of
business at Tokyo, Japan (herein referred to as the "ASSIGNEE"). The term "ASSIGNEE" used
herein includes successors, legal representatives, and assigns of the ASSIGNEE. The
ASSIGNEE desires to acquire the 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 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.

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(2) Legal name of Inventor: Anton deVilliers
Inventor's Signature:  Date: 11/13/2017
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(3) Legal name of Inventor: _____
Inventor's Signature: _____ Date: _____
Residence City/State/Country: _____
Mailing Address: _____
Citizenship: _____