#### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4594970

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

#### **CONVEYING PARTY DATA**

| Name             | Execution Date |
|------------------|----------------|
| TATSUYA NAKAMURA | 06/19/2017     |
| MASAKI KATAGIRI  | 06/15/2017     |
| YASUNOBU NOGUCHI | 06/20/2017     |
| HIROFUMI OOGURI  | 06/20/2017     |

#### **RECEIVING PARTY DATA**

| Name:           | JAPAN ATOMIC ENERGY AGENCY  |  |  |
|-----------------|-----------------------------|--|--|
| Street Address: | 4-49, MURAMATSU, TOKAI-MURA |  |  |
| City:           | NAKA-GUN, IBARAKI           |  |  |
| State/Country:  | JAPAN                       |  |  |
| Postal Code:    | 319-1184                    |  |  |

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

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 14659674 |

#### **CORRESPONDENCE DATA**

**Fax Number:** (202)628-8844

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.

**Phone:** 202-624-2500

Correspondent Name: CROWELL & MORING LLP

Address Line 1: 1001 PENNSYLVANIA AVENUE, NW

Address Line 4: WASHINGTON, D.C. 20004

| ATTORNEY DOCKET NUMBER:                                    | 103881.67634US |
|--|----------------|
| NAME OF SUBMITTER: KARLA I. ARIAS                          |                |
| SIGNATURE: /Karla I. Arias, reg. no. 72,679/               |                |
| DATE SIGNED:   | 09/14/2017     |
| This document serves as an Oath/Declaration (37 CFR 1.63). |                |

**Total Attachments: 4** 

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PATENT REEL: 043593 FRAME: 0680

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> PATENT REEL: 043593 FRAME: 0681

Title of Invention:



### ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

ZNS Fluorescent Material and Manufacturing Method Thereof

| This assignment and declaration are directed to (check | one):          |    |
|--|----------------|----|
| the application identified above by the attorney       |                |    |
| PCT International Application Number                   | , filed        | di |
| ☑ United States Application No. 14/659,674, filed      | March 17, 2015 |    |

#### ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, as a below named inventor I have sold and assigned, and by these presents hereby sell and assign, unto:

Name of Assignee: Japan Atomic Energy Agency

Address of Assignee: 4-49, Muramatsu, Tokai-mura, Naka-gun, Ibaraki 319-1184 Japan

(hereinafter ASSIGNEE) all my right, title and interest for the United States, its territories and possessions in and to the above-identified invention and United States patent application, including any and all divisions or continuations thereof, and in and to any and all Letters Patent of the United States which may issue on any such application or for said invention, including any and all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its successors or assigns to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by me had this Assignment not been made.

I hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue any and all such Letters Patent to said ASSIGNEE, its successors or assigns in accordance herewith.

I warrant and covenant that I have the full and unencumbered right to sell and assign the interests herein sold and assigned and that I have not executed and will not execute any document or instrument in conflict herewith.

I further covenant and agree that I will communicate to said ASSIGNEE, its successors, legal representatives or assigns all information known to me relating to said invention or patent application and that I will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent which may be granted therefor or thereon, including reissues or extensions, in said ASSIGNEE, its successors or assigns, or to assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing Letters Patent of the United States for said invention.

#### DECLARATION

As a below named inventor, I hereby declare that:

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.

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.

Signature: Inventor:

Tatsuya Nakamura Tatsuya NAKAMURA

June 19,2017

### ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

| Title of Invention:  | ZNS Fluorescent Material and Manufacturing Method Thereof   |  |  |  |
|--|---|--|--|--|
| the application  | eclaration are directed to (check one) identified above by the attorney dock nal Application Number pplication No. 14/659,674, filed Mar  | et no. and title of invention  |  |  |
|  | ASSIGNM   | ENT  |  |  |
|  |   | ency of which are hereby acknowledged, as a<br>se presents hereby sell and assign, unto:   |  |  |
| Name of Assignee:  | Japan Atomic Energy Agency  |  |  |  |
| Address of Assignee:   | 4-49, Moramatsu, Tokai-mura, N  | laka-gan, Ibaraki 319-1184 Japan   |  |  |
| and to the above-identi<br>continuations thereof, a<br>such application or for<br>enjoyed by said ASSIC  | ified invention and United States pate<br>and in and to any and all Letters Pater<br>said invention, including any and all<br>INEE, its successors or assigns to the<br>y be granted as fully and entirely as v | he United States, its territories and possessions in<br>out application, including any and all divisions or<br>nt of the United States which may issue on any<br>reissues or extensions thereof, to be held and<br>full end of the term or terms for which any and al<br>would have been held and enjoyed by me had this   |  |  |
|  | request the Director of the U.S. Pater<br>ASSIGNEE, its successors or assigns   | nt and Trademark Office to issue any and all such in accordance herewith.  |  |  |
|  |   | ed right to sell and assign the interests herein sold<br>ute any document or instrument in conflict  |  |  |
| or assigns all informati<br>and deliver any papers,<br>acts deemed necessary<br>perfect title to said invo<br>all Letters Patent which<br>ASSIGNEE, its succes | on known to me relating to said invert, make all rightful oaths, testify in any or desirable by said ASSIGNEE, its sention, to said application including donated therefor or thereon,                          | ASSIGNEE, its successors, legal representatives ntion or patent application and that I will execute y legal proceedings and perform all other lawful successors, legal representatives or assigns to livisions and continuations thereof and to any and including reissues or extensions, in said GNEE, its successors, legal representatives or I the United States for said invention. |  |  |
|  | DECLARA   | <u>rion</u>  |  |  |
| As a below named inve  | entor, I hereby declare that:   |  |  |  |
| The above-identified a   | pplication was made or authorized to  | be made by me.   |  |  |
| I believe that I am the  | original inventor or an original joint i  | nventor of a claimed invention in the application.   |  |  |
|  | that any willful false statement made<br>onment of not more than five (5) year  | in this declaration is punishable under 18 U.S.C. s, or both.  |  |  |
| Signature: Juga<br>Inventor: Masal   | aaki Kategizi<br>ki KATAGIRI  | Jung/5, 2017<br>DATE   |  |  |

PATENT REEL: 043593 FRAME: 0683

# ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63 (For Use with Signed Application Data Sheet)

| Title of Invention:  | ZNS Fluorescent Material and Manufacturing Method Thereof  |  |  |
|--|--|--|--|
| the application i  | claration are directed to (check one): dentified above by the attorney docket no. and title of invention al Application Number   |  |  |
|  | ASSIGNMENT   |  |  |
|  | consideration, the receipt and sufficiency of which are hereby acknowledged, as a have sold and assigned, and by these presents hereby sell and assign, unto:  |  |  |
| Name of Assignce:  | Japan Atomic Energy Agency   |  |  |
| Address of Assignce:   | 4-49, Muramatsu, Tokai-mura, Naka-gun, Ibaraki 319-1184 Japan  |  |  |
| and to the above-identificontinuations thereof, a such application or for enjoyed by said ASSIG  | E) all my right, title and interest for the United States, its territories and possessions in fied invention and United States patent application, including any and all divisions or and in and to any and all Letters Patent of the United States which may issue on any said invention, including any and all reissues or extensions thereof, to be held and NEE, its successors or assigns to the full end of the term or terms for which any and all be granted as fully and entirely as would have been held and enjoyed by me had this ade. |  |  |
|  | equest the Director of the U.S. Patent and Trademark Office to issue any and all such SSIGNEE, its successors or assigns in accordance herewith.   |  |  |
|  | that I have the full and unencumbered right to sell and assign the interests herein sold have not executed and will not execute any document or instrument in conflict   |  |  |
| I further covenant and agree that I will communicate to said ASSIGNEE, its successors, legal representatives or assigns all information known to me relating to said invention or patent application and that I will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent which may be granted therefor or thereon, including reissues or extensions, in said ASSIGNEE, its successors or assigns, or to assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing Letters Patent of the United States for said invention. |  |  |  |
|  | <u>DECLARATION</u>   |  |  |
| As a below named inve  | ntor, I hereby declare that:   |  |  |
| 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.   |  |  |  |
|  | hat any willful false statement made in this declaration is punishable under 18 U.S.C. nment of not more than five (5) years, or both.   |  |  |
| Signature: 40<br>Inventor: Vásun   | runobu Rogachi Jun. 20, 2017  obu NOGUCHI DATE   |  |  |

**PATENT** REEL: 043593 FRAME: 0684

## ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63 (For Use with Signed Application Data Sheet)

| Title of Invention:   | ZNS Fluorescent M   | laterial and Manufacturing  | g Method Thereof  |
|---|---|---|---|
| PCT Internation   | dentified above by th<br>al Application Numb  | I to (check one):<br>te attorney docket no. and<br>ter, fileo<br>),674, filed March 17, 201   |   |
|   |   | ASSIGNMENT  |   |
|   |   |   | nich are hereby acknowledged, as a hereby sell and assign, unto:  |
| Name of Assignee:   | Japan Atomic Ene  | rgy Agency  |   |
| Address of Assignee:  | 4-49, Muramatsu,  | Tokai-mura, Naka-gun,   | Ibaraki 319-1184 Japan  |
| and to the above-identi<br>continuations thereof, a<br>such application or for<br>enjoyed by said ASSIG   | fied invention and Ur<br>and in and to any and<br>said invention, includ<br>NEE, its successors of<br>the granted as fully a                            | nited States patent applicated all Letters Patent of the Ulfing any and all reissues of assigns to the full end of  | States, its territories and possessions in tion, including any and all divisions or inted States which may issue on any rextensions thereof, to be held and f the term or terms for which any and all been held and enjoyed by me had this  |
|   |   | of the U.S. Patent and Tradisors or assigns in accorda  | lemark Office to issue any and all such nee herewith.   |
|   |   |   | sell and assign the interests herein sold cument or instrument in conflict  |
| or assigns all information and deliver any papers, acts deemed necessary perfect title to said inveall Letters Patent which ASSIGNEE, its success | on known to me relat<br>make all rightful oat<br>or desirable by said A<br>antion, to said applica<br>a may be granted ther<br>sors or assigns, or to a | ing to said invention or paths, testify in any legal pro<br>ASSIGNEE, its successors<br>tion including divisions a<br>efor or thereon, including<br>assist said ASSIGNEE, its | SE, its successors, legal representatives atent application and that I will execute ceedings and perform all other lawful, legal representatives or assigns to and continuations thereof and to any and reissues or extensions, in said a successors, legal representatives or d States for said invention. |
|   | , poo   | DECLARATION   |   |
| As a below named inve   | ntor, I hereby declare  | e that  |   |
| The above-identified ap   | oplication was made o   | or authorized to be made b  | by me.  |
| I believe that I am the o   | original inventor or ar   | n original joint inventor of  | a claimed invention in the application.   |
|   |   | statement made in this dec<br>nan five (5) years, or both.  | claration is punishable under 18 U.S.C.   |
| Signature: 14 Inventor: Hiroft  | irofumi   | Poquri  | Jun. 20. 2017   |

**PATENT REEL: 043593 FRAME: 0685** 

RECORDED: 09/14/2017