#### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3679128

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

#### **CONVEYING PARTY DATA**

| Name             | Execution Date |
|------------------|----------------|
| SIMI GEORGE      | 11/19/2015     |
| SALLY PUCILOWSKI | 11/19/2015     |
| NATHAN CARLIE    | 11/19/2015     |
| JOSEPH HAYDEN    | 11/23/2015     |

#### **RECEIVING PARTY DATA**

| Name:           | SCHOTT CORPORATION |
|-----------------|--------------------|
| Street Address: | 555 TAXTER ROAD    |
| City:           | ELMSFORD           |
| State/Country:  | NEW YORK           |
| Postal Code:    | 10523              |

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

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 14251853 |

#### **CORRESPONDENCE DATA**

**Fax Number:** (703)243-6410

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: 703-243-6333
Email: mail@mwzb.com
Correspondent Name: TIMIKA SNOWDEN

Address Line 1: MILLEN, WHITE, ZELANO & BRANIGAN, P.C. Address Line 2: 2200 CLARENDON BLVD., SUITE 1400

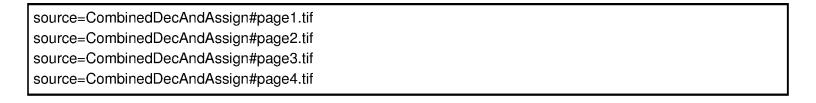
Address Line 4: ARLINGTON, VIRGINIA 22201

| ATTORNEY DOCKET NUMBER: | RDD-0033-D01   |
|-------------------------|--|
| NAME OF SUBMITTER:      | TIMIKA SNOWDEN   |
| SIGNATURE:              | /Timika Snowden/   |
| DATE SIGNED:            | 01/04/2016   |
|                         | This document serves as an Oath/Declaration (37 CFR 1.63). |
|                         |  |

**Total Attachments: 4** 

PATENT REEL: 037398 FRAME: 0796

503632498



PATENT REEL: 037398 FRAME: 0797

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

| Title of   | BROADENING THE RARE EARTH ION EMISSION BANDWIDTH, INCREASING   |
|--|--|
| Invention  | EMISSION CROSS SECTION, AND OR SHIFTING PEAK EMISSION WAVELENGTH IN ND   |
| As the helen see   | DOPED ALUMINATE OR SILICATE GLASSES sed inventor, I hereby declare that:   |
| As the oclow han   | ·  |
| This declaration   | The attached application, or   |
| is directed to:  | United States Application or PCT International Application number 14/251.853 filed on April 14, 2014   |
| The above-identit  | fied application was made or authorized to be made by me.  |
| I believe that I an  | n the original inventor or an original joint inventor of a claimed invention in the application.   |
| AND WHEREAS  | 3  |
| all patent(s) listed   | SCHOTT CORPORATION  555 Taxter Road  Elmsford, NY 10523  ed to as the ASSIGNEE, is desirous of acquiring the entire right, title, and interest in and to said invention and I above, including any and all earlier priority rights (U.S. and foreign), divisions and continuations thereof, I all renewals, reissues, reexaminations and extensions thereof. |
| NOW, WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged, ASSIGNOR hereby assigns, sells, and transfers to ASSIGNEE, its assigns and legal representatives, the entire and exclusive right, title and interest in and to said invention and patent(s), including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, and in and to any and all U.S. (including provisional) or foreign priority and/or convention rights or benefits accruing or to accrue with respect to the filling or securing of patents in the United States and/or any countries foreign thereto concerning said invention, SAID ASSIGNEE, its assigns and legal representatives to have, hold, exercise, and enjoy said invention and patent, including any and all earlier priority rights (U.S. and foreign), divisions and continuations thereof, any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, including the right to sue for damages occurring before the assignment, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such Letters Patent, including any and all renewals, reissues, reexaminations and extensions thereof, for the use and benefit of ASSIGNEE and its assigns and legal representatives, in as ample and beneficial a manner to all intents and purposes as the ASSIGNOR might or could have held and enjoyed the same, if the assignment had not been made. |  |
| AND ASSIGNOR hereby agrees to execute all papers that may be necessary to file applications in the United States and foreign countries for said invention and to assign the same to said ASSIGNEE, its assigns and legal representatives and to execute any other papers that may be needed in connection with securing Letters Patents thereon.   |  |
| AND ASSIGNOR authorizes and requests the Commissioner of Patents and Trademarks to issue a Letters Patent on any and all divisions and continuations thereof, to ASSIGNEE, its assigns and legal representatives, in accordance herewith.  |  |
| The undersigned hereby grant(s) the law firm of Millen, White, Zelano & Branigan, P.C. the power to insert on this assignment information which may be necessary or desirable in order for the United States Patent and Trademark Office to properly record this document.   |  |
| IN TESTIMONY WHEREOF this assignment is executed by ASSIGNOR   |  |
| 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.  |  |
| LEGAL NAME   |  |
| Inventor:  | Simi GEORGE Date: 11/19/2015   |
| Signature:   | Children and the second se   |

MILLEN, WHITE, ZELANO & BRANIGAN, P.C. ATTORNEYS AT LAW ARLINGTON COURTHOUSE PLAZA 2200 CLARENDON BOULEVARD | SUITE 1400 | ARLINGTON VA 22201 TELEPHONE: 703.243.6333 | Fax: 703.243.6410

EMAIL: MAIL@MWZB.COM

Effective, September 16, 2012

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

| Title of<br>Invention  | BROADENING THE RARE EARTH ION EMISSION BANDWIDTH, INCREASING EMISSION CROSS SECTION, AND OR SHIFTING PEAK EMISSION WAVELENGTH IN ND DOPED ALUMINATE OR SILICATE GLASSES   |
|--|---|
| As the below nan   | ned inventor, I hereby declare that:  |
| This declaration   | The attached application, or  |
| is directed to:  | United States Application or PCT International Application number 14/251,853 filed on April 14, 2014  |
| The above-identif  | fied 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.  |
| AND WHEREAS  | Š   |
| all patent(s) listed   | SCHOTT CORPORATION 555 Taxter Road Elmsford, NY 10523 ed to as the ASSIGNEE, is desirous of acquiring the entire right, title, and interest in and to said invention and l above, including any and all earlier priority rights (U.S. and foreign), divisions and continuations thereof, all renewals, reissues, reexaminations and extensions thereof.   |
| ASSIGNOR here right, title and int and all Letters Pathereof, and in an to accrue with resinvention, SAID including any and which may be graright to sue for darising from or agrenewals, reissues representatives, in   | WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged, by assigns, sells, and transfers to ASSIGNEE, its assigns and legal representatives, the entire and exclusive erest in and to said invention and patent(s), including any and all divisions and continuations thereof, and any tent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions d to any and all U.S. (including provisional) or foreign priority and/or convention rights or benefits accruing or spect to the filing or securing of patents in the United States and/or any countries foreign thereto concerning said ASSIGNEE, its assigns and legal representatives to have, hold, exercise, and enjoy said invention and patent, all earlier priority rights (U.S. and foreign), divisions and continuations thereof, any and all Letters Patent anted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, including the amages occurring before the assignment, with all the rights, powers, privileges and advantages in anywise opertaining thereto, for and during the term or terms of any and all such Letters Patent, including any and all so, reexaminations and extensions thereof, for the use and benefit of ASSIGNEE and its assigns and legal in as ample and beneficial a manner to all intents and purposes as the ASSIGNOR might or could have held and if the assignment had not been made. |
| AND ASSIGNOR hereby agrees to execute all papers that may be necessary to file applications in the United States and foreign countries for said invention and to assign the same to said ASSIGNEE, its assigns and legal representatives and to execute any other papers that may be needed in connection with securing Letters Patents thereon. |   |
| AND ASSIGNOR authorizes and requests the Commissioner of Patents and Trademarks to issue a Letters Patent on any and all divisions and continuations thereof, to ASSIGNEE, its assigns and legal representatives, in accordance herewith.  |   |
| The undersigned hereby grant(s) the law firm of Millen, White, Zelano & Branigan, P.C. the power to insert on this assignment information which may be necessary or desirable in order for the United States Patent and Trademark Office to properly record this document.   |   |
|  | IN TESTIMONY WHEREOF this assignment is executed by ASSIGNOR  |
|  | y acknowledge that any wiliful false statement made in this declaration is punishable under 18 U.S.C. 1001 by nent of not more than five (5) years, or both.  |
| LEGAL NAME (   | OF INVENTOR Sally PUCKLOWSKI Date: 19 November 2015   |
| Signature:   | Jaluaria se sa  |
|  | 8   |

Millen, White, Zelano & Branigan, P.C. Attorneys at Law Arlington Courthouse Plaza 2200 Clarendon Boulevard | Suite 1400 | Arlington VA 22201 Telephone: 703.243.6333 | Pax: 703.243.6410

Email: mail@mwzb.com

Our Ref: RDD-0033-D01

Effective, September 16, 2012

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

| Title of BROADENING THE RARE EARTH ION EMISSION BANDWIDTH, INCREASING   |  |
|---|--|
| Invention EMISSION CROSS SECTION, AND OR SHIFTING PEAK EMISSION WAVELENGTH IN ND  |  |
| DOPED ALUMINATE OR SILICATE GLASSES   |  |
| As the below named inventor, I hereby declare that:   |  |
| This declaration The attached application, or   |  |
| United States Application or PCT International Application number 14/251.853  Is directed to: Siled on April 14.2014  |  |
| 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.  |  |
| AND WHEREAS   |  |
| SCHOTT CORPORATION 555 Taxter Road Elmsford, NY 10523   |  |
| hereinafter referred to as the ASSIGNEE, is desirous of acquiring the entire right, title, and interest in and to said invention and all patent(s) listed above, including any and all earlier priority rights (U.S. and foreign), divisions and continuations thereof, including any and all renewals, reissues, reexaminations and extensions thereof.  |  |
| NOW, WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged, ASSIGNOR hereby assigns, sells, and transfers to ASSIGNEE, its assigns and legal representatives, the entire and exclusive right, title and interest in and to said invention and patent(s), including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, and in and to any and all U.S. (including provisional) or foreign priority and/or convention rights or benefits accruing or to accrue with respect to the filing or securing of patents in the United States and/or any countries foreign thereto concerning said invention, SAID ASSIGNEE, its assigns and legal representatives to have, hold, exercise, and enjoy said invention and patent, including any and all earlier priority rights (U.S. and foreign), divisions and continuations thereof, any and all Letters Patent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, including the right to sue for damages occurring before the assignment, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such Letters Patent, including any and all renewals, reissues, reexaminations and extensions thereof, for the use and benefit of ASSIGNEE and its assigns and legal representatives, in as ample and beneficial a manner to all intents and purposes as the ASSIGNOR might or could have held and enjoyed the same, if the assignment had not been made. |  |
| AND ASSIGNOR hereby agrees to execute all papers that may be necessary to file applications in the United States and foreign countries for said invention and to assign the same to said ASSIGNEE, its assigns and legal representatives and to execute any other papers that may be needed in connection with securing Letters Patents thereon.  |  |
| AND ASSIGNOR authorizes and requests the Commissioner of Patents and Trademarks to issue a Letters Patent on any and all divisions and continuations thereof, to ASSIGNEE, its assigns and legal representatives, in accordance herewith.   |  |
| The undersigned hereby grant(s) the law firm of Millen, White, Zelano & Branigan, P.C. the power to insert on this assignment information which may be necessary or desirable in order for the United States Patent and Trademark Office to properly record this document.  |  |
| IN TESTIMONY WHEREOF this assignment is executed by ASSIGNOR  |  |
| 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.   |  |
| LEGAL NAME OF INVENTOR 11/19/16   |  |
| Inventor: Nathan CARLIE Date: 1/13//8   |  |
| Signature: Carte Carte Si   |  |

Millen, White, Zelano & Branigan, P.C.
Attorneys at Law
Arlington Courthouse Plaza
2200 Clarendon Boulevard | Suite 1400 | Arlington VA 22201
Telephone: 703.243.6333 | Fax: 703.243.6410
Email: mail@mwzb.com

Our Ref: RDD-0033-D01

Effective, September 16, 2012

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

| Title of   | BROADENING THE RARE EARTH ION EMISSION BANDWIDTH, INCREASING  |
|--|---|
| Invention  | EMISSION CROSS SECTION, AND OR SHIFTING PEAK EMISSION WAVELENGTH IN ND  |
|  | DOPED ALUMINATE OR SILICATE GLASSES   |
| As the below nan   | ned invenior, I listoly declare that:   |
| This declaration   |   |
|  | United States Application or PCT International Application number 14/251.853  |
| is directed to:  | Eled on April 14, 2014  fied application was made or authorized to be made by me.   |
| I halieva that I ar  | ned application was made of administration of a claimed invention in the application.   |
| AND WHEREAS  |   |
| SCHOTT CORP  | 1   |
|  |   |
| 555 Taxter Road  |   |
| . 73   | nggg  |
| Elmsford, NY 10  | 1343  |
| hereinafter referr   | ed to as the ASSIGNEE, is desirous of acquiring the entire right, title, and interest in and to said invention and  |
| all patent(s) liste  | I above, including any and all earlier priority rights (U.S. and foreign), divisions and continuations thereof,   |
| including any and  | l all renewals, reissues, reexaminations and extensions thereof.  |
| 7.7.7.7.T  | WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged,  |
| NOW,   | by assigns, sells, and transfers to ASSIGNEE, its assigns and legal representatives, the entire and exclusive   |
| right title and in   | erest in and to said invention and patent(s), including any and all divisions and continuations thereof, and any  |
| and all Letters Pa   | tent which may be granted therefor, including any and all renewals, reissues, reexaminations and extensions   |
| thereof, and in ar   | ed to any and all U.S. (including provisional) or foreign priority and/or convention rights or benefits accruing or   |
| to accrue with re-   | spect to the filing or securing of patents in the United States and/or any countries foreign thereto concerning said  |
| invention, SAID  | ASSIGNEE, its assigns and legal representatives to have, hold, exercise, and enjoy said invention and patent, I all earlier priority rights (U.S. and foreign), divisions and continuations thereof, any and all Letters Patent |
| menuang any and  | nan earner priority rights (O.S. and ideeign), divisions and continuations diesect, any and an izeness rates<br>anted therefor, including any and all renewals, reissues, reexaminations and extensions thereof, including the  |
| right to sue for d   | amages occurring before the assignment, with all the rights, powers, privileges and advantages in anywise   |
| ensing from or a   | ppertaining thereto, for and during the term or terms of any and all such Letters Patent, including any and all   |
| renewals, reissue  | s, reexaminations and extensions thereof, for the use and benefit of ASSIGNEE and its assigns and legal   |
|  | n as ample and beneficial a manner to all intents and purposes as the ASSKINOR might or could have held and   |
| enjoyed the same   | , if the assignment had not been made.  |
| AND  | ASSIGNOR hereby agrees to execute all papers that may be necessary to file applications in the United States  |
|  | tries for said invention and to assign the same to said ASSIGNEE, its assigns and legal representatives and to  |
| execute any other  | r papers that may be needed in connection with securing Letters Patents thereon.  |
| -  |   |
|  | SSIGNOR authorizes and requests the Commissioner of Patents and Trademarks to issue a Letters Patent on   |
| any and all divisions and continuations thereof, to ASSIGNEE, its assigns and legal representatives, in accordance herewith. |   |
| The undersigned hereby grant(s) the law firm of Millen, White, Zelano & Branigan, P.C. the power to insert on this           |   |
|  | mation which may be necessary or desirable in order for the United States Patent and Trademark Office to  |
| properly record this document.   |   |
|  |   |
|  | IN TESTIMONY WHEREOF this assignment is executed by ASSIGNOR  |
| 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.   |   |
|  |   |
| LEGAL NAME OF INVENTOR   |   |
| Inventor: Joseph HAYDEN Date: November 23, 2015  |   |
| Signature January & F John   |   |
| Signature:   |   |
| F  | . 3   |

Millen, White, Zelano & Branigan, P.C.
Attorneys at Law
Arlington Courthouse Plaza
2200 Clarendon Boulevard | Suite 1400 | Arlington VA 22201
Telephone: 703.243.6333 | Fax: 703.243.6410

Email: mail@mwzb.com

Effective, September 16, 2012

PATENT REEL: 037398 FRAME: 0801

Our Ref: RDD-0033-D01

RECORDED: 01/04/2016