

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 030348-00126

First Inventor Alexander SHAIKEVITCH

Title LIGHT EMITTING DIODE WITH THIN...

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APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ **Fee Transmittal Form** (e.g., PTO/SB/17)
2. ☒ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 12]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** (35 U.S.C. 113) [Total Sheets 3]
5. **Oath or Declaration** [Total Sheets 4]
a. ☐ Newly executed (original or copy)
b. ☒ A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. ☒ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or
Computer Program (Appendix)
☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. - c. are required)
a. ☐ Computer Readable Form (CRF)
b. ☐ Specification Sequence Listing on:
i. ☐ CD-ROM or CD-R (2 copies); or
ii. ☐ Paper
c. ☐ Statements verifying identity of above copies

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ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
Name of Assignee _____
10. ☒ **37 CFR 3.73(b) Statement** ☒ **Power of Attorney**
(when there is an assignee)
11. ☐ **English Translation Document** (if applicable)
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
☐ Copies of citations attached
13. ☐ **Preliminary Amendment**
14. ☐ **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ **Other:** _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☒ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 12/611,364.....

Prior application information:

Examiner Vip PATELArt Unit: 2889

19. CORRESPONDENCE ADDRESS

☒ The address associated with Customer Number: 68543 OR ☐ Correspondence address below

Name			
Address			
City	State	Zip Code	
Country	Telephone	Email	

Signature	<u>Craig A. Gelfound</u>	Date	July 15, 2010
Name (Print/Type)	Craig A. Gelfound	Registration No. (Attorney/Agent)	41,032

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**
For FY 2009☒ Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)
462.00**Complete if Known**

Application Number	New Divisional Application
Filing Date	July 15, 2010
First Named Inventor	Alexander SHAIKEVITCH
Examiner Name	Vip PATEL
Art Unit	2889
Attorney Docket No.	030348-00126

METHOD OF PAYMENT (check all that apply)☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: 01-2300 Deposit Account Name: Arent Fox LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	330	165	540	270	220	110	462.00
Design	220	110	100	50	140	70	
Plant	220	110	330	165	170	85	
Reissue	330	165	540	270	650	325	
Provisional	220	110	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	52	26
Each independent claim over 3 (including Reissues)	220	110
Multiple dependent claims	390	195
Total Claims	Extra Claims	Fee (\$)
13 - 20 or HP = 0 x =		
HP = highest number of total claims paid for, if greater than 20.		
Indep. Claims	Extra Claims	Fee (\$)
2 - 3 or HP = 0 x =		
HP = highest number of independent claims paid for, if greater than 3.		
Multiple Dependent Claims		
	Fee (\$)	Fee Paid (\$)

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
15 - 100 = 0	0	0 / 50 =		

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): _____

SUBMITTED BY

Signature	<i>Craig A. Gelfound</i>	Registration No. (Attorney/Agent) 41,032	Telephone 213.629.7400
Name (Print/Type)	Craig A. Gelfound		Date July 15, 2010

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This is a Divisional Application which claims the benefit of pending U.S. Patent Application No. 12/611,364, filed on November 3, 2009. The disclosure of the prior application is hereby incorporated herein in its entirety by reference.

BACKGROUND

Field

[0002] The present disclosure relates to light emitting diodes with a thin phosphor layer.

Background

[0003] Solid state devices, such as light emitting diodes (LED)s, are attractive candidates for replacing conventional light sources such as incandescent and fluorescent lamps. LEDs have substantially higher light conversion efficiencies than incandescent lamps and longer lifetimes than both types of conventional light sources. In addition, some types of LEDs now have higher conversion efficiencies than fluorescent light sources and still higher conversion efficiencies have been demonstrated in the laboratory. Finally, LEDs require lower voltages than fluorescent lamps, and therefore, provide various power saving benefits.

[0004] LEDs produce light in a relatively narrow spectrum. To replace conventional lighting systems, LED-based sources that produce broad-spectrum (e.g., white) light are needed. One way to produce white light is to encapsulate blue or ultra-violet (UV) LEDs in a phosphor material. The phosphor material converts monochromatic light emitted from the blue or UV LEDs to white light.

[0005] The phosphor material is generally formed by introducing a suspension of phosphor particles into a carrier (e.g., silicone), encapsulating the LEDs in the carrier, and curing the carrier to provide a solid layer of material in which the phosphor particles will remain suspended. Unfortunately, silicone is a poor thermal conductor, and when illuminated, phosphors generate heat. Thus, when a phosphor-coated LED with a cured silicone carrier is used in a high-power application, the cured silicone may crack and/or have a reduced lifetime.

[0006] This property limits their use in high power LED applications which use temperature sensitive phosphor. Further, cracks in the phosphor and silicone composition reduce the efficiency of the device. Accordingly, there is a need in the art for simplified and improved processes for applying a phosphor material to LEDs and other solid state lighting devices.

SUMMARY

[0007] In one aspect of the disclosure, a method of manufacturing a film includes dispensing a mixture including phosphor and an uncurable fluid onto a surface, and at least partially drying the mixture. A curable fluid is dispensed onto the at least partially dried mixture, and the curable fluid is cured.

[0008] In another aspect of the disclosure, an article of manufacture is prepared by a process including dispensing a mixture including phosphor and an uncurable fluid onto a surface, and at least partially drying the mixture. A curable fluid is dispensed onto the at least partially dried mixture, and the curable fluid is cured.

[0009] In yet another aspect of the disclosure, an apparatus includes a phosphor bearing film including phosphor and a carrier, and a rigid film on the phosphor bearing film. The phosphor bearing film is 60%–80% phosphor.

[0010] In yet another aspect of the disclosure, an apparatus includes a phosphor bearing film including phosphor and an uncurable silicone carrier, and a cured silicone film on the phosphor bearing film. The cured silicone film is substantially free of phosphor.

[0011] It is understood that other aspects of the present invention will become readily apparent to those skilled in the art from the following detailed description, wherein it is shown and described only several aspects of a multilayer phosphor bearing film by way of illustration. As will be realized, the various aspects of the multilayer phosphor bearing film presented throughout this disclosure are capable of modification in various other respects, all without departing from the spirit and scope of the present invention. Accordingly, the drawings and the detailed description are to be regarded as illustrative in nature and not as restrictive.

BRIEF DESCRIPTION OF THE FIGURES

- [0012] Various aspects of the present invention are illustrated by way of example, and not by way of limitation, in the accompanying drawings, wherein:
- [0013] FIG. 1 is a flow chart illustrating an example of a process of manufacturing a film;
- [0014] FIG. 2 is a flow chart illustrating a detail of the process of FIG. 1; and
- [0015] FIG. 3 is a schematic illustration showing a cross section of a light emitting device.

DETAILED DESCRIPTION

- [0016] The present invention is described more fully hereinafter with reference to the accompanying drawings, in which various aspects of the present invention are shown. This invention, however, may be embodied in many different forms and should not be construed as limited to the various aspects of the present invention presented throughout this disclosure. Rather, these aspects are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the present invention to those skilled in the art.
- [0017] The various aspects of the present invention illustrated in the drawings may not be drawn to scale. Rather, the dimensions of the various features may be expanded or reduced for clarity. In addition, some of the drawings may be simplified for clarity. Thus, the drawings may not depict all of the components of a given apparatus (e.g., device) or method.
- [0018] Various aspects of the present invention will be described herein with reference to drawings that are schematic illustrations of idealized configurations of the present invention. As such, variations from the shapes of the illustrations as a result, for example, manufacturing techniques and/or tolerances, are to be expected. Thus, the various aspects of the present invention presented throughout this disclosure should not be construed as limited to the particular shapes of elements (e.g., regions, layers, sections, substrates, etc.) illustrated and described herein but are to include deviations in shapes that result, for example, from manufacturing. By way of example, an element illustrated or described as a rectangle may have rounded or curved features and/or a gradient concentration at its edges rather than a discrete change from one element to another. Thus, the elements illustrated in the drawings are schematic in nature and their shapes are not intended to illustrate the precise shape of an element and are not intended to limit the scope of the present invention.

[0019] It will be understood that when an element such as a region, layer, section, substrate, or the like, is referred to as being "on" another element, it can be directly on the other element or intervening elements may also be present. In contrast, when an element is referred to as being "directly on" another element, there are no intervening elements present. It will be further understood that when an element is referred to as being "formed" on another element, it can be grown, deposited, dispensed, etched, attached, connected, coupled, or otherwise prepared or fabricated on the other element or an intervening element.

[0020] Various elements may be shown in the drawings with a particular orientation. By way of example, the drawings may show one element on "top" of or "above" another element. Conversely, the drawings may show one element on the "bottom" of or "below" another element. It will be understood that present invention is intended to encompass different orientations of an apparatus in addition to the orientation depicted in the drawings. By way of example, if an apparatus in the drawings is turned over, elements described as "below" or "beneath" other elements would then be oriented "above" the other elements.

[0021] Unless otherwise defined, all terms (including technical and scientific terms) used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and this disclosure.

[0022] As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof. The term "and/or" includes any and all combinations of one or more of the associated listed items.

[0023] Various aspects of a multilayer phosphor bearing film for a solid state lighting device will now be presented. However, as those skilled in the art will readily appreciate, these aspects may be extended to other film applications without departing from the spirit and scope of the invention. The film may include a phosphor bearing layer with phosphor.

[0024] In many phosphor-coated light emitting diodes, the phosphor coating includes a suspension of phosphor particles in a silicone carrier, wherein the silicone carrier is cured to produce a solid layer in which the phosphor particles remain suspended. During use of the device, some of the light energy excites the phosphors and causes the emission of light at a different frequency. In addition, some of the light energy emitted from the LED is converted to heat. Thus, in high-power applications, a substantial amount of heat in the phosphor coating may be produced, potentially causing the silicone carrier to crack or otherwise reduce the lifetime of the device.

[0025] This issue may be addressed in part by utilizing a metallic package, which may include a metal or any metal-like structure with high thermal conductivity, for example, aluminum or copper, mounted on a heat sink. In this configuration, heat from the phosphor can travel downward, that is, through the LED die or directly through the package, to escape to the environment by way of the heat sink. However, in thick layers of phosphor suspended in a cured silicone carrier, the poor thermal conductivity of the silicone can limit the effectiveness of this configuration.

[0026] While thin phosphor layers may improve this situation, they are not without their own difficulties. A relatively thin phosphor layer may be created by suspending the phosphor within a low viscosity silicone (e.g., having a viscosity of 300–320 cP). However, the percentage of phosphor dispersed in this silicone is generally limited to 33–35%. Increases in phosphor concentration above this range may lead to difficulties in dispensing such as incomplete coverage of the die or dies, uneven surfaces, etc.

[0027] An improved thin layer of phosphor may be achieved by sedimentation. That is, the phosphor is dispensed into the package and/or onto the LED in a low viscosity silicone vehicle, and left (e.g., at room temperature) for a period of time to allow the phosphor to slowly sediment. As a result, a thin layer of phosphor is created on the die or dies, and on the surrounding areas, with a protective clear silicone layer on top. However, with this method, the sides of the dies are generally not covered with phosphor. It is well known that a significant portion of the light emitted by LED dies comes from the wall sides (e.g., up to 40%), so products produced utilizing this process may have inadequate efficiency. Further, a non-negligible

amount of the phosphor remains in the clear silicone layer, resulting in compromised strength and hardness and reduced effectiveness of thermal dissipation.

[0028] A further improvement to an apparatus having a thin phosphor layer may be achieved by utilizing a process such as electrophoresis, in which an electric field applied to the suspension of phosphor in the silicone creates motion of the phosphor toward the surfaces on which it is desired that they settle, allowing a portion of the phosphor to settle on the side walls of the die. However, this process utilizes specialized equipment and generally implies a high level of investment. Further, the process may result in an only partial sedimentation, wherein the clear silicone layer is relatively soft and/or flexible, and again, the thermal dissipation is less effective than desired.

[0029] Moreover, neither of these processes appears to be capable of producing a satisfactorily thin phosphor layer including a high concentration of phosphor. An article of manufacture produced according to the process described below includes a phosphor-bearing layer having a concentration that may be from 60% to 80% phosphor.

[0030] As generally depicted in the flow chart of FIG. 1, a representative embodiment of the present invention provides a process for manufacturing a film. Uncurable silicone 101 and treated silica 102 are combined to form mixture A 103. The uncurable silicone may be a silicone fluid having a low viscosity, which does not substantially harden when subjected to a curing process. In some embodiments, the uncurable fluid may be a fluid other than silicone that provides for a suitable viscosity and binding of the mixture. Treated silica 102 may be a silica powder that has been treated with a coating of organic molecules that improve the dispersion of the silica in the silicone fluid. In some embodiments, the silica 102 may not be treated, and in some embodiments the silica 102 may be omitted in its entirety. Phosphor 104 is added to mixture A 103 to produce mixture B 105. Phosphor 104 may be a powder or other phosphor particles. Phosphor 104 may include one or more colors or types of phosphor generally adapted to emit visible light when excited by radiation from a device such as an LED. In some embodiments, an additional step includes adding a small amount of curable silicone to the phosphor bearing mixture to enable a degree of hardening of a phosphor carrier during the curing process, described later.

- [0031] In block 106, mixture B 105 is stabilized by performing a sonication process. Sonication refers generally to the application of sound (e.g., ultrasound) energy to a composition, to agitate particles within the composition. This process stabilizes the mixture B 105, resulting in a substantially homogeneous suspension of phosphor in the silicone fluid.
- [0032] In block 107, the stabilized mixture is dispensed onto a surface. The surface may be portions of a packaged and wire-bonded light emitting device, including a top and side surfaces of an LED, and an inner surface of the package itself. Here, an inner surface may be an inside surface of a concave or enclosed package, or a top surface of a substantially flat package, etc. Because the mixture may be substantially homogeneous, and with the addition of the treated silica to improve the viscosity and flow of the mixture, a uniform, concentrated phosphor bearing film is formed. In some embodiments the phosphor bearing film may be of a uniform thickness on the top and side wall surfaces of the LED die, as well as other surfaces of the package.
- [0033] In block 108, the phosphor bearing film is at least partially dried. That is, heat and/or a partial vacuum may be applied to the film to evaporate at least a portion of at least one liquid constituent of the phosphor bearing film, such as the uncurable silicone 101. In some embodiments, partially drying as in block 108 results in a thick (i.e., highly viscous), paste-like semisolid film.
- [0034] In block 109, a coating is formed onto the partially dried phosphor bearing film. FIG. 2 is an expanded flow chart illustrating further details of block 109.
- [0035] Referring now to FIG. 2, in block 902, a curable silicone 901 is dispensed onto a surface of the partially dried phosphor bearing layer. The curable silicone 901 may be any suitable fluid such as silicone, which hardens or becomes more rigid when subjected to a curing process. In block 903, the film, including the partially dried phosphor bearing film and the curable silicone film, are subjected to a further drying process. That is, the partially dried phosphor bearing film is further dried by exposing the layers to a partial vacuum and/or a heightened temperature. In this way, at least one liquid constituent of the phosphor bearing film, such as the uncurable silicone, evaporates through the curable silicone film and the phosphor bearing film dries. In block 904, the film is subjected to a curing process, such that the curable silicone film hardens and forms a protective layer over the phosphor bearing film. The cured silicone film thus provides mechanical strength and protects the phosphor bearing film, while substantially not

hindering the transfer of heat from the phosphor bearing film downward through the die and/or package to a heat sink.

[0036] As a detailed example, a process for manufacturing a film includes mixing 6.24g of uncurable silicone fluid such as Dow Corning® OS-30 with 0.28g of treated silica such as Cab-o-sil® TS-720 in a centrifugal mixer for 3 to 5 minutes at 1000 to 3000 RPM. (Dow Corning is a registered trademark of Dow Corning Corporation; Cab-o-sil is a registered trademark of Cabot Corporation). 1g of phosphor is mixed into the mixture utilizing the same mixer. 0.12 to 0.16g of curable silicone such as Dow Corning® JCR6122 is added to the composition, which is then sonicated for 1 to 2 minutes, for example utilizing a Hielscher® UP-400S at a power of 70 to 90W. (Hielscher is a registered trademark of Dr. Hielscher GmbH). An amount, for example, a predetermined amount of the composition is dispensed into the package that includes a wire bonded LED die affixed to the package utilizing epoxy. The package is dried in a drying oven at 70C and 10 inches Hg for 10–12 minutes, that is, until the phosphor-bearing composition acquires a thick, paste-like semisolid form. The package is taken out of the drying oven, and a thin layer of curable silicone, such as JCR6122 is dispensed on top of the partially dried phosphor bearing layer. The package is then returned to the drying oven, and further dried for 30 minutes at 30 inches Hg and 70C. After the drying process, the package may be inspected for cracks in the phosphor bearing layer in and around the die area (minor cracking at a periphery of the inner surface of the package, for example, where a rubber ring is placed, may be acceptable). The package is then placed in a convection oven for 1 hour at 150C to cure the curable silicone.

[0037] FIG. 3 is a schematic illustration of an exemplary apparatus, showing a cross-section of a light emitting device. A light emitting diode 301 is coated with a film including a phosphor bearing layer 302 and a rigid layer 303. The light emitting diode may be a semiconductor device or any other suitable device for emitting light. The phosphor bearing layer 302 may include a high concentration of phosphor (e.g., from 60% to 80% phosphor), and may include treated silica and an uncurable fluid such as uncurable silicone. According to various embodiments, the phosphor bearing layer 301 is substantially dry, that is, substantial portions of the uncurable fluid have been removed from the layer. The rigid layer 303 may be a silicone material that has been subjected to a curing process such that it provides a mechanical protective layer over the phosphor bearing layer 302. In some embodiments, the rigid silicone layer 303 is substantially

free of phosphor, by virtue of it having been deposited after at least partially drying the phosphor bearing layer 302.

[0038] The LED 301 may be attached to a package 305 utilizing an adhesive 304. The adhesive may be any suitable material for fastening the die 301 to the package 305, such as epoxy. The package 305 may be any suitable material for potting or enclosing the light emitting device. In some embodiments, the package 305 is a metallic material, that is, any material with metal-like properties including a high thermal conductivity, thus enabling the dissipation of heat from the device to a heat sink 306. The heat sink 306 may be a thermally conductive apparatus for transferring heat from the light emitting device to the environment.

[0039] In the illustration, portions of the phosphor bearing film 302 are on an inner surface 307 of the package 305. Heat generated by the phosphor bearing layer 302 easily passes to the package 305 either at a direct point of contact at an inner surface 307 of the package 305, through the die 301, or through intermediate layers such as the epoxy layer 304.

[0040] The various aspects of a multilayer phosphor bearing film are provided to enable one of ordinary skill in the art to practice the present invention. Various modifications to, and alternative configurations of, the multilayer phosphor bearing films presented throughout this disclosure will be readily apparent to those skilled in the art, and the concepts disclosed herein may be extended to other lighting applications. Thus, the claims are not intended to be limited to the various aspects of this disclosure, but are to be accorded the full scope consistent with the language of the claims.

[0041] All structural and functional equivalents to the elements of the various aspects described throughout this disclosure that are known or later come to be known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the claims. Moreover, nothing disclosed herein is intended to be dedicated to the public regardless of whether such disclosure is explicitly recited in the claims. No claim element is to be construed under the provisions of 35 U.S.C. §112, sixth paragraph, unless the element is expressly recited using the phrase "means for" or, in the case of a method claim, the element is recited using the phrase "step for."

WHAT IS CLAIMED IS:

1. An apparatus comprising:
a phosphor bearing film comprising phosphor and a carrier, wherein the phosphor bearing film is 60%–80% phosphor; and
a rigid film on the phosphor bearing film.
2. The apparatus of claim 1 wherein the carrier comprises silicone.
3. The apparatus of claim 1 wherein the rigid film comprises a transparent cured silicone film.
4. The apparatus of claim 1 further comprising a light emitting device, wherein the phosphor bearing film is at least partially on the light emitting device.
5. The apparatus of claim 4, further comprising a metallic package, wherein the light emitting device is in the metallic package.
6. The apparatus of claim 5, wherein the phosphor bearing film is at least partially on a surface of the package.
7. The apparatus of claim 6, further comprising a heat sink, wherein the package is on the heat sink.
8. An apparatus comprising:
a phosphor bearing film comprising phosphor and a silicone carrier; and
a cured silicone film on the phosphor bearing film, the cured silicone film being substantially free of phosphor.

9. The apparatus of claim 8, wherein the phosphor bearing film is 60%–80% phosphor.

10. The apparatus of claim 8, further comprising a light emitting device, wherein the phosphor bearing film is at least partially on the light emitting device.

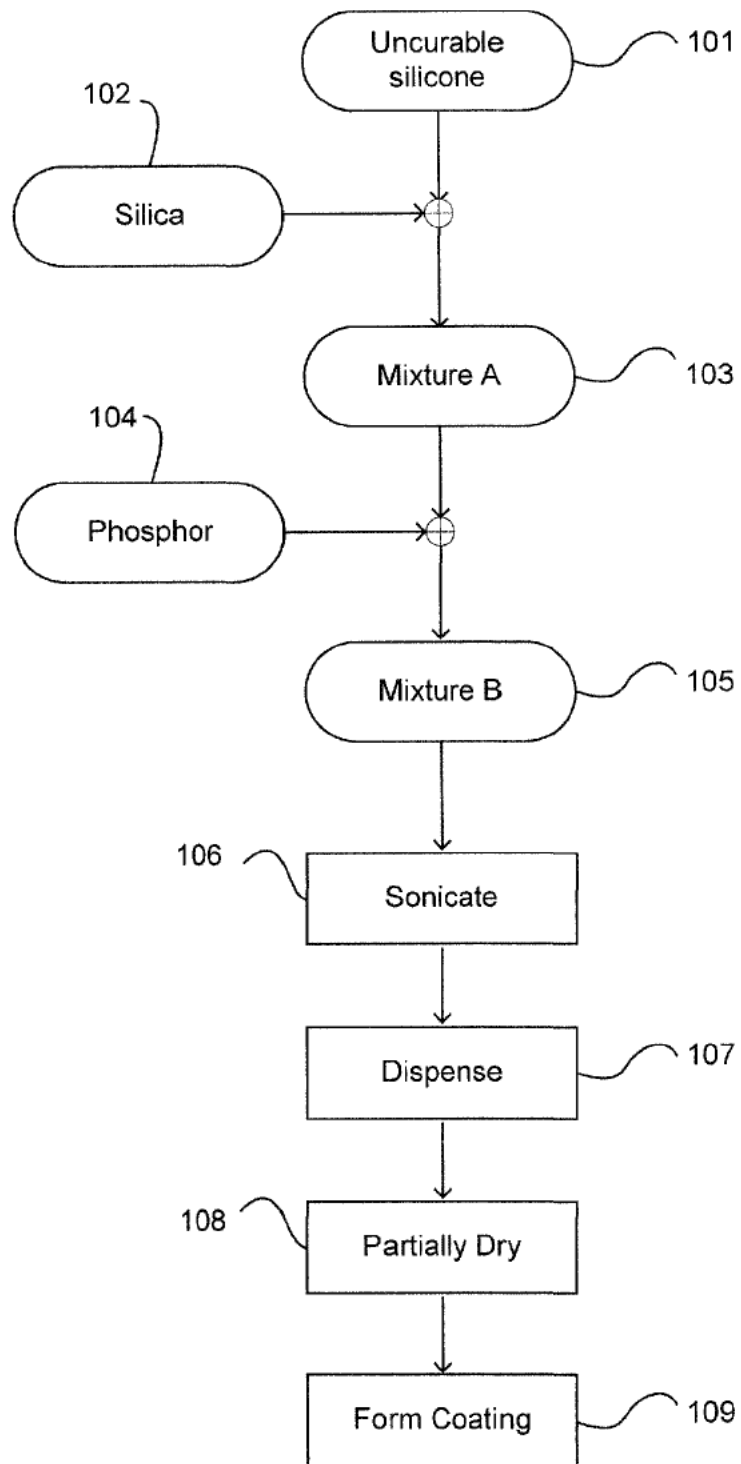
11. The apparatus of claim 10, further comprising a metallic package, wherein the light emitting device is in the metallic package.

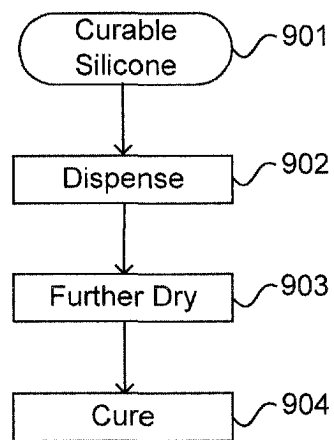
12. The apparatus of claim 11, wherein the phosphor bearing film is at least partially on a surface of the metallic package.

13. The apparatus of claim 12, further comprising a heat sink, wherein the package is on the heat sink.

ABSTRACT

A multiple layer film and a method of manufacturing the same, the film having a phosphor bearing layer including phosphor and a carrier, and a rigid protective layer. In some embodiments a mixture including phosphor and an uncureable fluid are dispensed onto a surface, and the mixture is at least partially dried. A curable fluid is dispensed onto the at least partially dried mixture, and the curable fluid is cured.

FIGURE 1

109
**FIGURE 2**

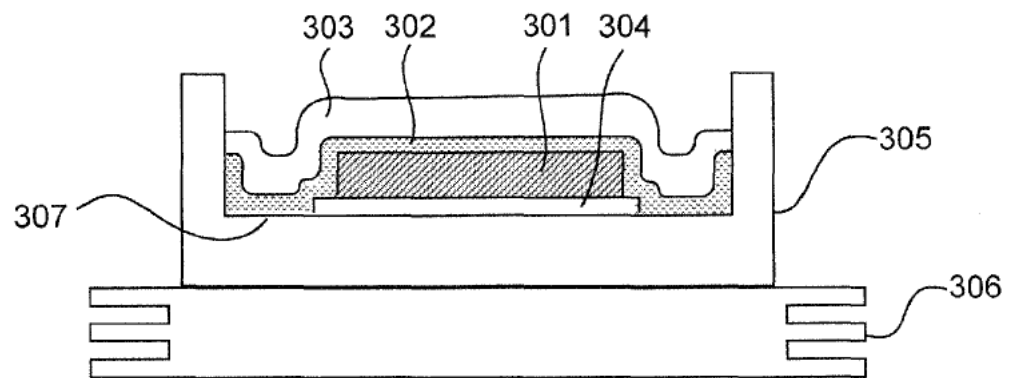


FIGURE 3

PTO/SB/01 (06-08)

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)		Attorney Docket Number	030348-00057
		First Named Inventor	SHAIKEVITCH, Alexander
		COMPLETE IF KNOWN	
☐ Declaration Submitted With Initial Filing OR ☒ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (f)) required)		Application Number	12/611,364
		Filing Date	November 03, 2009
		Art Unit	1794
		Examiner Name	To be assigned

I hereby declare that: (1) Each inventor's residence, mailing address, and citizenship are as stated below next to their name; and (2) I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

(Title of the invention)

the application of which

☐ Is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 11/03/2009 as United States Application Number or PCT International

Application Number 12/611,364 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Authorization To Permit Access To Application by Participating Offices

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified application, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified US application, and 3) any U.S. application from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 3]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing the form, call 1-800-PTO-9199 and select option 2

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www.FormsWorkflow.com

PTO/SB/01 (05-08)

Approved for use through 05/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION — Utility or Design Patent Application**Claim of Foreign Priority Benefits**

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐



Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 2 of 3]

PTO/SB/01 (06-08)

Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION — Utility or Design Patent ApplicationDirect all
correspondence to:The address
associated with
Customer Number:

68543

OR

Correspondence
address below

Name

Address

City

State

ZIP

Country

Telephone

Email

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: Patent Application Files. Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: Deposit Accounts and Electronic Funds Transfer Profiles.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:



A petition has been filed for this unsigned inventor

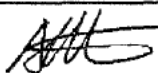
Given Name (first and middle (if any))

Alexander

Family Name or Surname

Shalkevitch

Inventor's Signature



Date

Feb. 19-2010

Residence: City

Sunnyvale

State

CA

Country

USA

Citizenship

USA CANADA

Mailing Address

1225 Bordeaux Drive

City

Sunnyvale

State

CA

Zip

94086

Country

USA



Additional inventors or a legal representative are being named on the 1 supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

[Page 3 of 3]

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PTO/SB/02A (07-07)

Approved for use through 06/30/2010, OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION	ADDITIONAL INVENTOR(S) Supplemental Sheet Page 1 of 1
--------------------	--

Name of Additional Joint Inventor, if any:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Rene		HELBING	
Inventor's Signature		Date 2/17/10	
Sunnyvale Residence: City	CA State	USA Country	USA GERMANY Citizenship R.F.
1225 Bordeaux Drive			
Mailing Address			
Sunnyvale City	CA State	94086 Zip	USA Country
Name of Additional Joint Inventor, if any:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country
Name of Additional Joint Inventor, if any:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.53. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

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Nichia Exhibit 1002

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	030348-00126
		Application Number	
Title of Invention	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1					
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Alex		SHAIKEVITCH		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Livermore	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)		CA			
Mailing Address of Applicant:					
Address 1		101 Portola Avenue			
Address 2					
City	Livermore	State/Province	CA		
Postal Code	94551-7555	Country	US		
Applicant 2					
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Rene		HELBING		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Livermore	State/Province		Country of Residence	US
Citizenship under 37 CFR 1.41(b)		DE			
Mailing Address of Applicant:					
Address 1		101 Portola Avenue			
Address 2					
City	Livermore	State/Province	CA		
Postal Code	94551-7555	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence information of this application.	

Add

Nichia Exhibit 1002

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	030348-00126
		Application Number	
Title of Invention	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM		
Customer Number	68543		
Email Address	laipdocket@arentfox.com	Add Email	Remove Email

Application Information:

Title of the Invention	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM		
Attorney Docket Number	030348-00126	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	3	Suggested Figure for Publication (if any)	1

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	68543		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Division of	12611364	2009-11-03
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			

Foreign Priority Information:

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	030348-00126
		Application Number	
Title of Invention	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM		

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

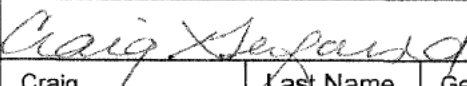
Remove			
Application Number	Country ¹	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☐ Yes ☒ No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1			
If the Assignee is an Organization check here. ☒			
Organization Name	Bridgelux, Inc.		
Mailing Address Information:			
Address 1	101 Portola Avenue		
Address 2			
City	Livermore	State/Province	CA
Country ¹	US	Postal Code	94551-7555
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the Add button.			

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.			
Signature			Date (YYYY-MM-DD)
First Name	Craig	Last Name	Gelfound
Registration Number		41032	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Alexander SHAIKEVITCH, et al.

Application No./Patent No.: 12/611,364

Filed/Issue Date: November 3, 2009

Titled: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

BRIDEGLUX, INC., a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 023813, Frame 0140, or for which a copy therefore is attached.

OR

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Craig A. Gelfound
Signature

July 15, 2010

Date

Craig A. Gelfound

Attorney of Record

Printed or Typed Name

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Nichia Exhibit 1002

Page 25

PTO/SB/81 (01-00)

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U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Application Number	12/611,364
	Filing Date	November 03, 2009
	First Named Inventor	Alexander Shaikevitch
	Title	LIGHT EMITTING DIODE WITH THIN MULTILAYER.
	Art Unit	1794
	Examiner Name	TBD
	Attorney Docket Number	030348.00057

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

68543

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

I am the:

☐ Applicant/Inventor.

OR

☒ Assignee of record of the entire interest. See 37 CFR 3.71.

Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____

SIGNATURE of Applicant or Assignee of Record

Signature	<i>Albert E. Hamois</i>	Date	12/18/09
Name	Albert E. Hamois, Jr.	Telephone	(408) 990-7549
Title and Company	Senior Associate General Counsel, Bridgelux Inc.		

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. The collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1480, Alexandria, VA 22313-1460.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

TOTAL P.001

Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM			
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH			
Filer:	Craig A. Gelfound/Linda S. Stetson			
Attorney Docket Number:				
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				462

Electronic Acknowledgement Receipt

EFS ID:	8023159
Application Number:	12836852
International Application Number:	
Confirmation Number:	3065
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH
Customer Number:	68543
Filer:	Craig A. Gelfound/Linda S. Stetson
Filer Authorized By:	Craig A. Gelfound
Attorney Docket Number:	
Receipt Date:	15-JUL-2010
Filing Date:	
Time Stamp:	14:25:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 462
RAM confirmation Number	640
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1		030348-00126_DivApp.PDF	2717693	yes	26
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal of New Application		1	2	
	Specification		3	11	
	Claims		12	13	
	Abstract		14	14	
	Drawings-only black and white line drawings		15	17	
	Oath or Declaration filed		18	21	
	Application Data Sheet		22	24	
	Assignee showing of ownership per 37 CFR 3.73(b).		25	25	
	Power of Attorney		26	26	
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	32933	no	2
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Warnings:					
Information:					
Total Files Size (in bytes):			2750626		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Date: 07/15/10

PTO/SB/06 (12-04)

Approved for use through 7/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number

12/836,852**APPLICATION AS FILED – PART I**

(Column 1)

(Column 2)

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(i))	13	minus 20 =
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$260 (\$130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

RATE (\$)	FEE (\$)
N/A	82
N/A	270
N/A	110
x\$26	
x\$110	
195	
TOTAL	462

RATE (\$)	FEE (\$)
N/A	
N/A	
N/A	
x\$52	
x\$220	
390	
TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

(Column 1)

(Column 2)

(Column 3)

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	*	Minus **	=
Independent (37 CFR 1.16(h))	*	Minus ***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

RATE (\$)	ADDI- TIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

RATE (\$)	ADDI- TIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

(Column 1)

(Column 2)

(Column 3)

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	*	Minus **	=
Independent (37 CFR 1.16(h))	*	Minus ***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

RATE (\$)	ADDI- TIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

RATE (\$)	ADDI- TIONAL FEE (\$)
X =	
X =	
N/A	
TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/836,852	07/15/2010	1715	462	030348-00126	13	2

CONFIRMATION NO. 3065

68543

Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

FILING RECEIPT



Date Mailed: 07/29/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Alexander SHAIKEVITCH, Livermore, CA;
Rene Helbing, Livermore, CA;

Assignment For Published Patent Application

Bridgelux, Inc., Livermore, CA

Power of Attorney: The patent practitioners associated with Customer Number 68543

Domestic Priority data as claimed by applicant

This application is a DIV of 12/611,364 11/03/2009

Foreign Applications

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 07/23/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/836,852**

Projected Publication Date: 05/05/2011

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

Preliminary Class

427

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER**Title 35, United States Code, Section 184****Title 37, Code of Federal Regulations, 5.11 & 5.15****GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

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NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126

68543
Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

CONFIRMATION NO. 3065
POA ACCEPTANCE LETTER



Date Mailed: 07/29/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/15/2010.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/dking/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126	3065
68543	7590	10/21/2010	EXAMINER	
Arent Fox LLP 555 West Fifth Street 48th Floor Los Angeles, CA 90013			PATEL, VIP	
			ART UNIT	PAPER NUMBER
			2889	
			NOTIFICATION DATE	DELIVERY MODE
			10/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LAIPDocket@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No. 12/836,852	Applicant(s) SHAIKEVITCH ET AL.	
	Examiner Vip Patel	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

Claims

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. An element such as light emitting diode is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976)..

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, it is not clear as to what exactly is "carrier". Dependent claims are indefinite for the same reasons since by their dependencies, it incorporate the same deficiency as their parent claim.

Allowable Subject Matter

Claims 1-13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims would be allowable since the prior art of record does not teach apparatus comprising combination of specific content of phosphor in phosphor and silicon carrier film and a rigid film

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vip Patel whose telephone number is (571) 272-2458. The examiner can normally be reached on 5.30am- 2pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, T. Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Vip Patel/
Primary Examiner
AU 2889**

Notice of References Cited	Application/Control No. 12/836,852		Applicant(s)/Patent Under Reexamination SHAIKEVITCH ET AL.	
	Examiner Vip Patel		Art Unit 2889	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,621,212	09-2003	Pennaz et al.	313/506
*	B	US-6,084,705	07-2000	Zieba et al.	359/350
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 12836852	Applicant(s)/Patent Under Reexamination SHAIKEVITCH ET AL.
	Examiner Vip Patel	Art Unit 2889

SEARCHED			
Class	Subclass	Date	Examiner
313	498, 502, 504, 506, 509, 512	10-18-10	/vp/

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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BIB DATA SHEET

CONFIRMATION NO. 3065

SERIAL NUMBER 12/836,852	FILING or 371(c) DATE 07/15/2010 RULE	CLASS 313	GROUP ART UNIT 2889	ATTORNEY DOCKET NO. 030348-00126		
APPLICANTS Alexander SHAIKEVITCH, Livermore, CA; Rene Helbing, Livermore, CA; ** CONTINUING DATA ***** This application is a DIV of 12/611,364 11/03/2009 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 07/23/2010						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged <u>/VIP PATEL/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 3	TOTAL CLAIMS 13	INDEPENDENT CLAIMS 2
ADDRESS Arent Fox LLP 555 West Fifth Street 48th Floor Los Angeles, CA 90013 UNITED STATES						
TITLE LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM						
FILING FEE RECEIVED 462	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit			

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: Confirmation No.: 3065
Alexander SHAIKEVITCH et al Group Art Unit: 2889
Application No.: 12/836,852 Examiner: V. Patel
Filed: July 15, 2010 Attorney Docket No.: 030348-00126
For: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

STATEMENT CORRECTING LARGE ENTITY STATUS UNDER 37 C.F.R. § 1.28(c)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

November 3, 2010

Sir:

It is respectfully submitted that the above-identified application is not entitled to claim small entity status and should claim large entity status. The initial filing was made in error and this paper corrects the same. Acknowledgement of large entity status by the U.S. Patent and Trademark Office is hereby requested.

The deficiency in fees paid is set forth below and is being corrected:

Type of Fee	Date Paid	Current Fee	Fee Paid	Deficiency
Basic Filing Fee	7/15/10	\$330	\$82	\$248
Basic Search Fee	7/15/10	\$540	\$270	\$270
Basic Examination Fee	7/15/10	\$220	\$110	\$110
TOTAL:				\$628

The Commissioner is hereby authorized to charge Deposit Account No. 01-2300, in the amount of Six Hundred Twenty-Eight Dollars (\$628.00) for payment of the required fees. In the event that any additional fees are due with respect to this paper,

please charge Deposit Account Number 01-2300, referencing Attorney Docket Number 030348-00126.

Respectfully submitted,



Craig A. Gelfound
Registration Number 41,032

Customer Number 68543
ARENT FOX LLP
Gas Company Tower
655 West Fifth Street, 48th Floor
Los Angeles, California 90013-1065
Telephone: 213-629-7400
Fax: 202-629-7401
e-mail: laipdocket@arentfox.com

CAG:mmg

Electronic Acknowledgement Receipt

EFS ID:	8758569
Application Number:	12836852
International Application Number:	
Confirmation Number:	3065
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH
Customer Number:	68543
Filer:	Craig A. Gelfound/Martina Galentine
Filer Authorized By:	Craig A. Gelfound
Attorney Docket Number:	030348-00126
Receipt Date:	03-NOV-2010
Filing Date:	15-JUL-2010
Time Stamp:	12:13:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	030348-00126_StatementCorrectingLargeEntityStatus.PDF	102152 5e27a4100e8f6faf2143e3e110347534602d58d8	no	2

Warnings:

Information:

Nichia Exhibit 1002

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. 030348.00126

In re patent application of:

Alexander Shaikevitch, et al.

Confirmation No.: 3065

Serial No.: 12/836,852

Art Unit: 2889

Filed: July 15, 2010

Examiner: Vip Patel

For: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

AMENDMENT UNDER 37 C.F.R. § 1.111

MAIL STOP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

January 20, 2011

SUBMISSION UNDER 37 CFR § 1.111

Sir:

In reply to the outstanding Non-Final Office Action dated October 21, 2010, please
amend the application as shown on the following pages:

Amendments to the Claims are reflected in the listing of claims which begins on page 2
of this paper.

Remarks begin on page 5 of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the Specification.

1. (Original) An apparatus comprising:
a phosphor bearing film comprising phosphor and a carrier, wherein the phosphor bearing film is 60%–80% phosphor; and
a rigid film on the phosphor bearing film.
2. (Original) The apparatus of claim 1 wherein the carrier comprises silicone.
3. (Original) The apparatus of claim 1 wherein the rigid film comprises a transparent cured silicone film.
4. (Original) The apparatus of claim 1 further comprising a light emitting device, wherein the phosphor bearing film is at least partially on the light emitting device.
5. (Original) The apparatus of claim 4, further comprising a metallic package, wherein the light emitting device is in the metallic package.
6. (Original) The apparatus of claim 5, wherein the phosphor bearing film is at least partially on a surface of the package.
7. (Original) The apparatus of claim 6, further comprising a heat sink, wherein the package is on the heat sink.
8. (Original) An apparatus comprising:
a phosphor bearing film comprising phosphor and a silicone carrier; and
a cured silicone film on the phosphor bearing film, the cured silicone film being substantially free of phosphor.

9. (Original) The apparatus of claim 8, wherein the phosphor bearing film is 60%–80% phosphor.

10. (Original) The apparatus of claim 8, further comprising a light emitting device, wherein the phosphor bearing film is at least partially on the light emitting device.

11. (Original) The apparatus of claim 10, further comprising a metallic package, wherein the light emitting device is in the metallic package.

12. (Original) The apparatus of claim 11, wherein the phosphor bearing film is at least partially on a surface of the metallic package.

13. (Original) The apparatus of claim 12, further comprising a heat sink, wherein the package is on the heat sink.

14. (New) An apparatus comprising:
a light emitting device;
a phosphor bearing film arranged with the light emitting device, the film comprising phosphor and a carrier, wherein the phosphor bearing film is 60%–80% phosphor; and
a rigid film on the phosphor bearing film.

15. (New) The apparatus of claim 14 wherein the carrier comprises silicone.

16. (New) The apparatus of claim 14 wherein the rigid film comprises a transparent cured silicone film.

17. (New) The apparatus of claim 14, further comprising a metallic package, wherein the light emitting device is in the metallic package.

18. (New) The apparatus of claim 17, wherein the phosphor bearing film is at least partially on a surface of the package.

19. (New) The apparatus of claim 17, further comprising a heat sink, wherein the package is on the heat sink.

REMARKS

Currently claims 1-13 are pending in this application, with claims 1 and 8 being independent.

New claims 14-19 have been added, with claim 14 being independent. Applicants submit that no new matter is added herein, as all limitations are well supported in the specification.

Claims 14-19 recite limitations substantially similar to claims 1-13, with the additional recitation of a light emitting device arranged with the phosphor bearing film and the rigid film.

In view of the foregoing amendments and the remarks that follow, Applicant respectfully requests reconsideration and a timely indication of allowance.

Claim Rejections - 35 U.S.C. § 112

The Examiner has rejected claims 1-13 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement.

According to the Office Action (page 2), “an element such as light emitting diode is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure.” Applicants respectfully traverse.

Claim 1 recites an invention comprising a phosphor bearing film and a rigid film on the phosphor bearing film. Preparation and/or use of the recited elements may be practiced without a requirement to associate such elements with a light emitting device. The Examiner has not established a prima facie case that such elements also require a light emitting device for the practice of the invention. Applicants therefore submit that Claims 1-13 are patentable under 35 U.S.C. 112, first paragraph.

The Examiner has rejected claims 1-7 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Examiner states that in claim 1, line 2, it is not clear as to what exactly is “carrier.” Dependent claims are rejected as indefinite for the same reasons by dependency on claim 1. Applicants respectfully traverse.

The term “carrier” is adequately described in the specification, e.g., “silicone,” “silicone carrier,” “uncurable silicone carrier.” Applicant respectfully submits that it is obvious to one of ordinary skill in the art from the context of the specification, and common language usage, that “carrier” is a medium for “carrying,” a another substance, which in this case is, for example, phosphor (see ¶s [0005], [0009], [0010], [0024], [0025], [0030] of the specification as filed). Therefore, it is respectfully submitted that claims 1-7 are patentable under 35 U.S.C. 112, second paragraph.

Allowable Subject Matter

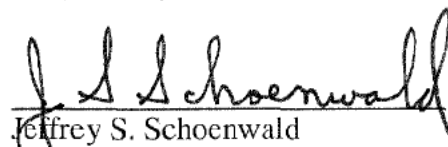
The Applicants appreciate the Examiners allowance of claims 1-13 subject to being responsive to the rejections under 35 U.S.C. 112, first and second paragraphs. New claims 14-19 recite a light emitting device with a phosphor bearing film arranged with the light emitting device and a rigid film on the phosphor bearing film. Applicants submit that the amendments and arguments made are responsive to the Examiner’s conditions for allowability. It is further submitted by the Applicants that new claims 14-19 are also responsive to the Examiner’s conditions for allowability.

Conclusion:

In view of the foregoing, Applicants submit that claims 1-19 in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

In the event that any fees are due with respect to this paper, please charge Deposit Account No. 01-2300, referencing Atty. Docket No. 030348-00126.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J. S. Schoenwald", written over a horizontal line.

Jeffrey S. Schoenwald
Reg. No. 60,602
Agent to Applicant

Customer No.: 68543
ARENT FOX LLP
555 West Fifth Street
48th Floor
Los Angeles, California 90013
Tel: (213) 629-7400
Fax: (213) 629-7401

JSS:lss

Electronic Acknowledgement Receipt

EFS ID:	9271397
Application Number:	12836852
International Application Number:	
Confirmation Number:	3065
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH
Customer Number:	68543
Filer:	Jeffrey Stuart Schoenwald/Linda S. Stetson
Filer Authorized By:	Jeffrey Stuart Schoenwald
Attorney Docket Number:	030348-00126
Receipt Date:	20-JAN-2011
Filing Date:	15-JUL-2010
Time Stamp:	15:14:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		030348-00126_ResponseTo2010-10-21_NFOA.PDF	339082 c10dfda259f7be0634bd41e702cb6c042dae0cd4	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Amendment Copy Claims/Response to Suggested Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	7
Warnings:			
Information:			
Total Files Size (in bytes):		339082	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/836,852		Filing Date 07/15/2010		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*	X \$	=	OR	X \$	=			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=		X \$	=			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	01/20/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X \$26 =	0	OR	X \$	=
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X \$110 =	0	OR	X \$	=
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=	OR	X \$	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=	OR	X \$	=
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/ANGELA WHITE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

68543 7590 02/18/2011
Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

EXAMINER

PATEL, VIP

ART UNIT

PAPER NUMBER

2889

DATE MAILED: 02/18/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/836,852

07/15/2010

Alexander SHAIKEVITCH

030348-00126

3065

TITLE OF INVENTION: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	05/18/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

68543 7590 02/18/2011
Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

12/836,852 07/15/2010 Alexander SHAIKEVITCH 030348-00126 3065

TITLE OF INVENTION: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional YES \$755 \$300 \$0 \$1055 05/18/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATEL, VIP	2889	313-498000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126	3065

68543 7590 02/18/2011
Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

EXAMINER

PATEL, VIP

ART UNIT	PAPER NUMBER
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2889

DATE MAILED: 02/18/2011

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	12/836,852	SHAIKEVITCH ET AL.	
	Examiner	Art Unit	
	Vip Patel	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1-20-11.
2. ☒ The allowed claim(s) is/are 8-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. ☐ Notice of Informal Patent Application 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____. 7. ☒ Examiner's Amendment/Comment 8. ☒ Examiner's Statement of Reasons for Allowance 9. ☐ Other ____. |
|--|---|

/vippatel/
primary examiner
au 2889

Examiner's Amendment

An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Mr. J Schoenwald on 1-24-11.

The application has been amended as follows:

In the claims:

Please, cancel claims 1-7.

In claim 8, in line 1, after "apparatus comprising:" insert ---a light emitting device; ----.

In claim 8, in line 2, after "bearing film", insert ---arranged with the light emitting device, the phosphor bearing film ---

In claim 10, line 1, delete "further comprising a light emitting device;".

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vip Patel whose telephone number is (571) 272-2458.

The examiner can normally be reached on 5.30am- 2pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2889

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Vip Patel/
Primary Examiner,
AU 2889**

Search Notes 	Application/Control No. 12836852	Applicant(s)/Patent Under Reexamination SHAIKEVITCH ET AL.
	Examiner Vip Patel	Art Unit 2889

SEARCHED			
Class	Subclass	Date	Examiner
313	498, 502, 504, 506, 509, 512	1-29-11	/vp/

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
searched	as above in uspgpub	1-29-11	/vp/

--	--

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
		Application Number	12/836,852		
		Filing Date	July 15, 2010		
		First Named Inventor	Alexander SHAIKEVITCH		
		Art Unit	2889		
		Examiner Name	Vip Patel		
		Attorney Docket Number	030348-00126		
Sheet	1	of	1		

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US 2009/0045422 A1	02-19-2009	Kato et al.	
		US 2002/0140338 A1	10-03-2002	Sluzky	
		US 2008/0308828 A1	12-18-2008	Kashiwagi et al.	
		US 5,408,026 A	04-18-1995	Cowan	
		US 2005/0101158 A1	05-12-2005	Farnworth et al.	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		International Search Report and Written Opinion for the International Application No. PCT/US2010/054965, dated March 14, 2011	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

From the INTERNATIONAL SEARCHING AUTHORITY

To:

CRAIG A. GELFOUND
ARENT FOX LLP
555 WEST 5TH STREET
48TH FLOOR
LOS ANGELES, CA 90013

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing
(day/month/year)**14 MAR 2011**Applicant's or agent's file reference
030348.00152**FOR FURTHER ACTION** See paragraphs 1 and 4 belowInternational application No.
PCT/US 10/54966International filing date
(day/month/year) **01 November 2010 (01.11.2010)**Applicant **BRIDGELUX, INC.**

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Name and mailing address of the ISA/
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer

Lee W. Young

PCT Helpdesk: 571-272-4300

Telephone No. PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 030348.00152	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US 10/54966	International filing date (day/month/year) 01 November 2010 (01.11.2010)	(Earliest) Priority Date (day/month/year) 03 November 2009 (03.11.2009)
Applicant BRIDGELUX, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II).

3. ☒ Unity of invention is lacking (see Box No. III).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 3
☒ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 10/54966

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

- Group I: Claims 1-21, drawn to a method of manufacturing a film.
- Group II: Claims 22-34, drawn to an apparatus.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

- The technical feature of Group I is the incurable liquid, which is not present in Group II.
- The technical feature of Group II is the carrier, which is not present in Group I.

Accordingly, unity of invention is lacking under PCT Rule 13.1.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-21

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 10/54966

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H01L 33/00 (2011.01)

USPC - 257/98

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - H01L 33/00 (2011.01)

USPC - 257/98

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC - 428/447; 438/29; 427/565,64; 257/98, E33.061

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Databases Searched: PubWEST(PGPB,USPT,USOC,EPAB,JPAB); Google Patents/Scholar

Search Terms: curable, incurable, drying, phosphor, silicon, viscous, cure, harden, semiconductor, light emitting diode, film

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/0045422 A1 (Kato et al.) 19 February 2009 (19.02.2009), para. [0346], [0348], [0354], [0386], [0599]	1-6, 8-17, 19-21

Y		7, 18
Y	US 2002/0140338 A1 (Sluzky) 3 October 2002 (03.10.2002), para. [0045]-[0046]	7, 18
A	US 2008/0308828 A1 (Kashiwagi et al.) 18 December 2008 (18.12.2008), entire document	1-21
A	US 5,408,026 A (Cowan) 18 April 1995 (18.04.1995), entire document	1-21
A	US 2005/0101158 A1 (Famworth et al.) 12 May 2005 (12.05.2005), entire document	1-21

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

2 March 2011 (02.03.2011)

Date of mailing of the international search report

14 MAR 2011

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: CRAIG A. GELFOUND
ARENT FOX LLP
555 WEST 5TH STREET
48TH FLOOR
LOS ANGELES, CA 90013

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

14 MAR 2011

Applicant's or agent's file reference
030348.00152

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US 10/54966

International filing date (day/month/year)

01 November 2010 (01.11.2010)

Priority date (day/month/year)

03 November 2009 (03.11.2009)

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - H01L 33/00 (2011.01)

USPC - 257/98

Applicant **BRIDGELUX, INC.**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

2 March 2011 (02.03.2011)

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (July 2009)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US 10/54966

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
 - ☐ on paper
 - ☐ in electronic form
 - b. (time)
 - ☐ in the international application as filed
 - ☐ together with the international application in electronic form
 - ☐ subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 10/54966

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:
- ☐ paid additional fees
- ☐ paid additional fees under protest and, where applicable, the protest fee
- ☐ paid additional fees under protest but the applicable protest fee was not paid
- ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

☐ complied with

☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-21, drawn to a method of manufacturing a film.

Group II: Claims 22-34, drawn to an apparatus.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical feature of Group I is the uncurable liquid, which is not present in Group II.

The technical feature of Group II is the carrier, which is not present in Group I.

Accordingly, unity of invention is lacking under PCT Rule 13.1.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

☐ all parts

☒ the parts relating to claims Nos. 1-21

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 10/54966

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	7, 18	YES
	Claims	1-6, 8-17, 19-21	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-21	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-6, 8-17, and 19-21 lack novelty under PCT Article 33(2) as being anticipated by US 2009/0045422 A1 (hereinafter Kato).

As per claims 1 and 12, Kato discloses a method of manufacturing a film (for an LED, abstract) and article of manufacture prepared by a process, comprising:
dispensing a mixture comprising phosphor and an uncurable fluid onto a surface (para. [0354] - phosphor mixture, para. [0386] - methods of making phosphor mixture, para. [0346] - the fluid is uncurable because when it is dried it remains in a state of viscous liquid);
at least partially drying the mixture (para. [0346] - mixture is partially dried);
dispensing a curable fluid onto the at least partially dried mixture ("Then the sealant liquid was cured under a predetermined temperature condition, so as to obtain a semiconductor light-emitting device comprising a transparent sealing layer (semiconductor light-emitting device member)." para. [0599]); and
curing the curable fluid (para. [0599] - sealant liquid was cured).

As per claims 2 and 13, Kato further discloses further drying the mixture after dispensing the curable fluid and prior to the curing of the curable fluid (para. [0346] - discloses the first drying step, para. [0348] - discloses the second drying step following the first drying step, but it is before the curing step in para. [0599]).

As per claims 3 and 14, Kato further discloses the that uncurable fluid comprises an uncurable silicone fluid (para. [0361], [0388] - example of a silicon phosphor mixture).

As per claims 4 and 15, Kato further discloses the that the curable fluid comprises a curable silicone fluid (para. [0414]silicon resin).

As per claims 5 and 16, Kato further discloses the that the curable fluid is transparent (para. [0419] - transparent liquid).

As per claims 6 and 17, Kato further discloses the that the mixture further comprises treated silica (para. [0213] - mixture containing silica).

As per claims 8 and 19, Kato further discloses applying at least a partial vacuum to the film during the at least partially drying the mixture (para. [0338] - high vacuum conditions, para. [0612] - vacuum deaeration step).

As per claims 9 and 20, Kato further discloses the that the surface comprises an inner surface of a package and a surface of a light emitting diode in the package (abstract, see drawings, such as FIG. 50 for example).

As per claims 10 and 21, Kato further discloses the that the surface of the light emitting diode comprises a side wall surface and a top wall surface of the light emitting diode (abstract, see drawings, such as FIG. 50 for example).

As per claims 11, Kato discloses a film manufactured by the method of claim 1 (para. [0141] - "formed into a film shape").

Claims 7 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Kato in view of US 2002/0140338 A1 (Sluzky).

As per claims 7 and 18, Kato discloses the method and corresponding manufacture as applied to claims 1 and 12, respectively, but Kato does not disclose sonicating the mixture prior to the dispensing of the mixture onto the surface. However, Sluzky discloses a method of making a film (abstract), comprising sonicating the mixture prior to the dispensing of the mixture onto the surface (para. [0045]-[0046] - sonicating a mixture of phosphor suspended in a slurry prior to drying). Thus, it would have been obvious to a person having ordinary skill in the art to use the sonicating techniques as taught by Sluzky in the method of Kato to suspend the phosphor particles in the fluid to achieve an improved uniformity in light emission.

Claims 1-21 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

SEARCH HISTORY

Application Number	PCT/US 10/54966
Search Conducted By	MK
Search Approved By	HHB

US/IPC Classifications Searched	IPC(8) - H01L 33/00 (2011.01) USPC - 257/98
Date Conducted	2 March 2011 (02.03.2011)

Documentation Searched	USPC - 428/447; 438/29; 427/565,64; 257/98, E33.061
Search Terms Used	curable, uncurable, drying, phosphor, silicon, viscous, cure, harden, semiconductor, light emitting diode, film
Date Conducted	2 March 2011 (02.03.2011)

Electronic Database Searched	PubWEST
Files Searched	PGPB,USPT,USOC,EPAB,JPAB
Date Conducted	2 March 2011 (02.03.2011)
Search Logic:	

<u>L32</u> L30 NOT L31	77	<u>L32</u>	<u>L32</u>
<u>L31</u> L30 and (semiconductor or LED\$1 or (light emitting diode\$1))	26	<u>L31</u>	<u>L31</u>
<u>L30</u> (silicon with (semisolid or viscous or "does not harden" or "does not fully harden") with (cure\$1 or curing or curable or dry\$3))	103	<u>L30</u>	<u>L30</u>
<u>L29</u> (silicon with semisolid with (cure\$1 or curing or curable or dry\$3))	27	<u>L29</u>	<u>L29</u>
<u>L28</u> L17 and (silicon with semisolid with (cure\$1 or curing or curable or dry\$3))	0	<u>L28</u>	<u>L28</u>
<u>L27</u> L26 and @pd<20091103	484	<u>L27</u>	<u>L27</u>
<u>L26</u> L21 and (film\$1 or layer\$1)	653	<u>L26</u>	<u>L26</u>

SEARCH HISTORY

<u>L25</u>	(LED\$1 or light emitting diode\$1) and (layer\$1 or film\$1) and uncurable	12	<u>L25</u>	<u>L25</u>
<u>L24</u>	L20 and uncurable	0	<u>L24</u>	<u>L24</u>
<u>L23</u>	L18 and phosphor\$4 and silicone and (cure\$1 or curing or curable or dry\$3) and (mix or mixture\$1) and (LED\$1 or light emitting diode\$1)	1	<u>L23</u>	<u>L23</u>
<u>L22</u>	L21 and L18	0	<u>L22</u>	<u>L22</u>
<u>L21</u>	L20 and phosphor\$4 and silicone and (cure\$1 or curing or curable or dry\$3) and (mix or mixture\$1)	674	<u>L21</u>	<u>L21</u>
<u>L20</u>	(LED or light emitting diode\$1) with (making or manufacturing)	24708	<u>L20</u>	<u>L20</u>
<u>L19</u>	phosphor\$4 and uncurable and silicone and (cure\$1 or curing or curable or dry\$3) and (mix or mixture\$1)	20	<u>L19</u>	<u>L19</u>
<u>L18</u>	7705093	1	<u>L18</u>	<u>L18</u>
<u>L17</u>	L16 and phosphor\$4	8	<u>L17</u>	<u>L17</u>
<u>L16</u>	uncurable and silicone and fluid\$3 and (cure\$1 or curing or curable or dry\$3)	32	<u>L16</u>	<u>L16</u>
<u>L15</u>	L14 and phosphor\$4	8	<u>L15</u>	<u>L15</u>
<u>L14</u>	curable and uncurable and silicone and fluid\$3	30	<u>L14</u>	<u>L14</u>
<u>L13</u>	curable and uncurable and silicone with fluid\$3	15	<u>L13</u>	<u>L13</u>
<u>L12</u>	(uncurable with silicone with fluid\$3) and (curable with silicone with fluid\$3)	1	<u>L12</u>	<u>L12</u>
<u>L11</u>	L10 and (curable with silicone with fluid\$3)	10	<u>L11</u>	<u>L11</u>
<u>L10</u>	L8 and (cure\$1 or curing or curable or dry\$3)	3772	<u>L10</u>	<u>L10</u>
<u>L9</u>	L8 and (uncurable with silicone with fluid)	1	<u>L9</u>	<u>L9</u>
<u>L8</u>	L7 and phosphor\$4	7077	<u>L8</u>	<u>L8</u>
<u>L7</u>	(L1 or L2 or L3 or L4 or L5 or L6)	32597	<u>L7</u>	<u>L7</u>
<u>L6</u>	427/565,64.ccls.	1649	<u>L6</u>	<u>L6</u>
<u>L5</u>	438/29.ccls.	2502	<u>L5</u>	<u>L5</u>
<u>L4</u>	428/447.ccls.	7253	<u>L4</u>	<u>L4</u>
<u>L3</u>	257/E33.061	687	<u>L3</u>	<u>L3</u>
<u>L2</u>	257/98.ccls.	6144	<u>L2</u>	<u>L2</u>
<u>L1</u>	H01L33/00.ipc.	18382	<u>L1</u>	<u>L1</u>
<u>L21</u>	20020140338	1	<u>L21</u>	<u>L21</u>
<u>L20</u>	L19 and 20090045422 and (dry\$3 or dried) and (viscous or viscosit\$3)	1	<u>L20</u>	<u>L20</u>
<u>L19</u>	L18 and @pd<20091103 and ((semisolid or viscous or "does not harden" or "does not fully harden") with dry\$3)	303	<u>L19</u>	<u>L19</u>
<u>L18</u>	L12 and @pd<20091103 and ((semisolid or viscous or "does not harden" or "does not fully harden") same dry\$3)	1698	<u>L18</u>	<u>L18</u>
<u>L17</u>	L12 and @pd<20091103 and ((semisolid or viscous or "does not harden" or "does not fully harden") same dry\$)	1839	<u>L17</u>	<u>L17</u>

SEARCH HISTORY

<u>L16</u>	L15 and uncurable	1	<u>L16</u>	<u>L16</u>
<u>L15</u>	L14 and ((semisolid or viscous or "does not harden" or "does not fully harden") with ((cure\$1 or curing or curable or dry\$3 or uncurable)))	504	<u>L15</u>	<u>L15</u>
<u>L14</u>	L13 and @pd<20091103	2250	<u>L14</u>	<u>L14</u>
<u>L13</u>	L12 and ((semisolid or viscous or "does not harden" or "does not fully harden") same ((cure\$1 or curing or curable or dry\$3 or uncurable)))	2589	<u>L13</u>	<u>L13</u>
<u>L12</u>	L11 and phosphor\$5	12870	<u>L12</u>	<u>L12</u>
<u>L11</u>	(semiconductor or LED\$1 or (light emitting diode\$1)) and (semisolid or viscous or "does not harden" or "does not fully harden")	45546	<u>L11</u>	<u>L11</u>
<u>L10</u>	L9 and (semiconductor or LED\$1 or (light emitting diode\$1))	1	<u>L10</u>	<u>L10</u>
<u>L9</u>	L8 and (semisolid or viscous or "does not harden" or "does not fully harden" or gel\$1)	1	<u>L9</u>	<u>L9</u>
<u>L8</u>	L7 and silicone	1	<u>L8</u>	<u>L8</u>
<u>L7</u>	L6 and phosphor\$4	1	<u>L7</u>	<u>L7</u>
<u>L6</u>	L1 and (cure\$1 or curing or curable or dry\$3)	1	<u>L6</u>	<u>L6</u>
<u>L5</u>	7705093	1	<u>L5</u>	<u>L5</u>
<u>L4</u>	20050101158	2	<u>L4</u>	<u>L4</u>
<u>L3</u>	5408026.pn.	1	<u>L3</u>	<u>L3</u>
<u>L2</u>	20080308828	2	<u>L2</u>	<u>L2</u>
<u>L1</u>	20060170332	1	<u>L1</u>	<u>L1</u>

Electronic Database Searched	Google
Files Searched	Scholar
Date Conducted	2 March 2011 (02.03.2011)
Search Logic:	
making LEDs uncurable phosphor silicon - Results 1 - 10 of about 384. (0.10 sec)	

Electronic Database Searched	Google
Files Searched	Patents
Date Conducted	2 March 2011 (02.03.2011)
Search Logic:	
Your search - making LEDs uncurable phosphor silicon - did not match any documents Patents 1 - 10 on making LEDs curable phosphor silicon. (0.07 seconds)	

SEARCH HISTORY

Electronic Patent Application Fee Transmittal

Application Number:	12836852			
Filing Date:	15-Jul-2010			
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM			
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH			
Filer:	Craig A. Gelfound/Angelin Hirano			
Attorney Docket Number:	030348-00126			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	9752620
Application Number:	12836852
International Application Number:	
Confirmation Number:	3065
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH
Customer Number:	68543
Filer:	Craig A. Gelfound/Angelin Hirano
Filer Authorized By:	Craig A. Gelfound
Attorney Docket Number:	030348-00126
Receipt Date:	28-MAR-2011
Filing Date:	15-JUL-2010
Time Stamp:	15:36:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 180
RAM confirmation Number	2463
Deposit Account	012300
Authorized User	GELFOUND,CRAIG

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		030348-00126_IDS.pdf	2411218 285309da359fdeadd7a9a139308ac20dd8fc62	yes	4
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	3	
	Information Disclosure Statement (IDS) Filed (SB/08)		4	4	
Warnings:					
Information:					
2	NPL Documents	030348-00126_ISRWO_PCTUS1 0054966_03142011.PDF	517485 d6f096f6e394f5c33a92a163411e872733b15ff6	no	12
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	30468 62db9fa63231dd1a8c04a0437fdff2846d79c25	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			2959171		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Attorney Docket No. 030348-00126

Alexander SHAIKEVITCH et al.

Confirmation No.: 3065

Application No.: 12/836,852

Art Unit: 2889

Filed: July 15, 2010

Examiner: Vip Patel

For: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Date: March 28, 2011

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the information item(s) listed on the attached Form PTO-SB08. Unless otherwise indicated herein, one copy of each item(s) is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the item(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- ☐ 1. This Information Disclosure Statement is being filed (a) within three months of the U.S. filing date, OR (b) before the mailing date of a first Office Action on the merits in the present application, OR (c) accompanies a Request for Continued Examination. No certification or fee is required.
- ☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection or Notice of Allowance.

LA/425054.1

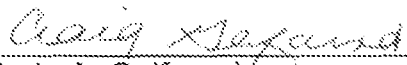
- ☐ a. I hereby certify that:
- ☐ (1) each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1). No fee is required.
- ☐ (2) no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, no item of information in this Information Disclosure Statement was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2). No fee is required.
- ☐ b. Since neither certification of paragraphs a(1) or a(2) above is being made, accompanying this statement is the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300 as needed to ensure consideration of the disclosed information.
- ☒ 3. This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Applicant(s) hereby petition(s) that the Information Disclosure Statement be considered. Accompanying this statement is the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300 as needed to ensure consideration of the disclosed information.
- ☒ a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).

☐ b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).

☒ 4. The references were cited in a counterpart foreign application. An English language version of the foreign search report is attached for the Examiner's information.

In the event that any fees are due with respect to this paper, please charge Deposit Account No. 01-2300 referencing Atty. Docket No. 030348.00126.

Respectfully submitted,


Craig A. Gelfound
Registration No.: 41,032

Customer No. 68543
ARENT FOX LLP
555 West Fifth Street, 48th Floor
Los Angeles, California 90013
Tel: (213) 629-7400
Fax: (213) 629-7401
Email: LAIPDocket@arentfox.com



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126	3065
68543	7590	04/07/2011	EXAMINER	
Arent Fox LLP 555 West Fifth Street 48th Floor Los Angeles, CA 90013			PATEL, VIP	
			ART UNIT	PAPER NUMBER
			2889	
			NOTIFICATION DATE	DELIVERY MODE
			04/07/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LAIPDocket@arentfox.com
Patent_Mail@arentfox.com

**UNITED STATES DEPARTMENT OF COMMERCE****U.S. Patent and Trademark Office**

Address : COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12836852	7/15/2010	SHAIKEVITCH ET AL.	030348-00126

Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

EXAMINER

Vip Patel

ART UNIT	PAPER
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2889	20110331
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DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Information disclosure submitted 3-28-11 has been considered. A copy of considered IDS has been included with this communication.

/Vip Patel/
Primary Examiner, Art Unit 2889

PTO/S&O&u (07-09)

Approved for use through 07/31/2012 OMB 0651-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	12/836,852
		Filing Date	July 15, 2010
		First Named Inventor	Alexander SHAIKEVITCH
		Art Unit	2889
		Examiner Name	Vip Patel
Sheet: 1 of 1	Attorney Docket Number	030348-00126	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US 2009/0045422 A1	02-19-2009	Kato et al.	
		US 2002/0140338 A1	10-03-2002	Sluzky	
		US 2008/0308828 A1	12-18-2008	Kashiwagi et al.	
		US 5,408,026 A	04-18-1995	Cowan	
		US 2005/0101158 A1	05-12-2005	Farnworth et al.	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		International Search Report and Written Opinion for the International Application No. PCT/US2010/054965, dated March 14, 2011	

Examiner Signature	/Vip Patel/	Date Considered	03/31/2011
--------------------	-------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /V.P./



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126

CONFIRMATION NO. 3065

PUBLICATION NOTICE



OC000000047511610

68543
Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

Title:LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

Publication No.US-2011-0101395-A1

Publication Date:05/05/2011

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

68543 7590 02/18/2011
 Arent Fox LLP
 555 West Fifth Street
 48th Floor
 Los Angeles, CA 90013

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Angelina Hirano (Electronically filed)	(Depositor's name)
<i>Angelina Hirano</i>	(Signature)
May 18, 2011	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126	3065

TITLE OF INVENTION: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	05/18/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATEL, VIP	2889	313-498000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Arent Fox LLP

2.

3.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Bridgelux, Inc.

Livermore, CA

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☒ Payment by credit card. XXXXXXXXXXXXXXXX
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 01-2300 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☒ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature

Craig A. Gelfound

Date May 18, 2011

Typed or printed name

Craig A. Gelfound

Registration No. 41,032

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Electronic Patent Application Fee Transmittal

Application Number:	12836852			
Filing Date:	15-Jul-2010			
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM			
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH			
Filer:	Craig A. Gelfound/Angelin Hirano			
Attorney Docket Number:	030348-00126			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	1501	1	1510	1510
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Nichia Exhibit 1002

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1810

Electronic Acknowledgement Receipt

EFS ID:	10122803
Application Number:	12836852
International Application Number:	
Confirmation Number:	3065
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH
Customer Number:	68543
Filer:	Craig A. Gelfound/Angelin Hirano
Filer Authorized By:	Craig A. Gelfound
Attorney Docket Number:	030348-00126
Receipt Date:	18-MAY-2011
Filing Date:	15-JUL-2010
Time Stamp:	19:33:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 1810
RAM confirmation Number	7827
Deposit Account	012300
Authorized User	GELFOUND,CRAIG

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	030348-00126_IssueFeeTransmittal.pdf	216945 6bdb3d734318a6ba6babfd66bdd852ac3a922bbe	no	1
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	32061 0b96f672ef4e89729507bd9d336bf5efec31e1bc	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			249006		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/836,852	07/05/2011	7973465	030348-00126	3065

68543 7590 06/15/2011
Arent Fox LLP
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Alexander SHAIKEVITCH, Livermore, CA;
Rene Helbing, Livermore, CA;

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-00444	DATE FILED 5/2/2022	U.S. DISTRICT COURT Western District of Texas, Waco Division
PLAINTIFF BX LED LLC		DEFENDANT The Home Depot U.S.A. Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,869,812	3/22/2005	BX LED LLC
2 7,901,109	3/8/2011	BX LED LLC
3 7,973,465	7/5/2011	BX LED LLC
4 8,203,260	6/19/2012	BX LED LLC
5 8,567,988	10/29/2013	BX LED LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☒ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-00444	DATE FILED 5/2/2022	U.S. DISTRICT COURT Western District of Texas, Waco Division
PLAINTIFF BX LED LLC		DEFENDANT The Home Depot U.S.A. Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,998,433	4/7/2015	BX LED LLC
2 9,913,333	3/6/2018	BX LED LLC
3 10,966,300	3/30/2021	BX LED LLC
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	☐ Amendment ☐ Answer ☐ Cross Bill ☒ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-00445	DATE FILED 5/2/2022	U.S. DISTRICT COURT Western District of Texas, Waco Division
PLAINTIFF BX LED LLC		DEFENDANT Walmart Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,869,812	3/22/2005	BX LED LLC
2 7,901,109	3/8/2011	BX LED LLC
3 7,973,465	7/5/2011	BX LED LLC
4 8,203,260	6/19/2012	BX LED LLC
5 8,567,988	10/29/2013	BX LED LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	☐ Amendment ☐ Answer ☐ Cross Bill ☒ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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DECISION/JUDGEMENT

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 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Nichia Exhibit 1002

AO 120 (Rev. 08/10)

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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

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DOCKET NO. 6:22-cv-00445	DATE FILED 5/2/2022	U.S. DISTRICT COURT Western District of Texas, Waco Division
PLAINTIFF BX LED LLC		DEFENDANT Walmart Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,998,433	4/7/2015	BX LED LLC
2 10,966,300	3/30/2021	BX LED LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	☐ Amendment ☐ Answer ☐ Cross Bill ☒ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-00446	DATE FILED 5/2/2022	U.S. DISTRICT COURT Western District of Texas, Waco Division
PLAINTIFF BX LED LLC		DEFENDANT Wayfair LLC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,869,812	3/22/2005	BX LED LLC
2 7,901,109	3/8/2011	BX LED LLC
3 7,973,465	7/5/2011	BX LED LLC
4 8,567,988	10/29/2013	BX LED LLC
5 8,998,433	4/7/2015	BX LED LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☒ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

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PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Patent Number	US7973465
	Issue Date	07/05/2011
	First Named Inventor	Shaikevitch, Alex; Helbing, Rene
	Title	Light emitting diode with thin multilayer phosphor film
	Attorney Docket No.	030348-00126

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.**OR**☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

66,000

OR☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☐ The address associated with the above-identified Customer Number.**OR**☐ The address associated with the Customer Number identified in the box at right:
OR☒ Firm or Individual Name IP Valuation Partners II LLC

Address 4940 Broadway Suite 130

City	San Antonio	State	Texas	Zip	78209
Country	USA				
Telephone	504-583-9743	Email	Jason@ipval.com		

I am the:

☐ Inventor, having ownership of the patent.**OR**☒ Patent owner.

Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on 5/31/2023.

SIGNATURE of Inventor or Patent Owner

Signature	/Adam Baumli /	Date	05/31/2023
Name	Adam Baumli	Telephone	214-870-1240
Title and Company	BX LED LLC		

NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.☒ A total of 1 forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: BX LED

Application No./Patent No.: US7973465B2

Filed/Issue Date: 7/5/2011

Titled: LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM

BX LED

LLC

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 059048/, Frame 0101, or a copy* is attached.

OR

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

____ The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or a copy* is attached.

2. From: _____ To: _____

____ The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or a copy* is attached.

3. From: _____ To: _____

____ The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or a copy* is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ *As required by 37 CFR 3.73(b)(1)(i), if a copy/copies is/are attached, the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Adam Baumli/

Signature

Adam Baumli

Printed or Typed Name

06/02/2023

Date

Managing Member

Title or Registration Number

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Nichia Exhibit 1002

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	48093694
Application Number:	12836852
International Application Number:	
Confirmation Number:	3065
Title of Invention:	LIGHT EMITTING DIODE WITH THIN MULTILAYER PHOSPHOR FILM
First Named Inventor/Applicant Name:	Alexander SHAIKEVITCH
Customer Number:	68543
Filer:	Jason Keshav Bourgeois
Filer Authorized By:	
Attorney Docket Number:	030348-00126
Receipt Date:	02-JUN-2023
Filing Date:	15-JUL-2010
Time Stamp:	13:07:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	US7973465BXPOA.pdf	516001	no	2
			f3d95a02ddfafd9e23167e6866cb039b8f773eb7		

Warnings:

Nichia Exhibit 1002

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	US7973465B2BX37CFR373.pdf	319716	no	2
			1eed39263145947d3306ed4901dc470d3fb c60b5		
Warnings:					
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Total Files Size (in bytes):			835717		
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/836,852	07/15/2010	Alexander SHAIKEVITCH	030348-00126

68543
ARENTFOX SCHIFF LLP - Los Angeles
555 West Fifth Street
48th Floor
Los Angeles, CA 90013

CONFIRMATION NO. 3065
IMPROPER CPOA LETTER



OC000000057971096

Date Mailed: 06/07/2023

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 06/02/2023. The power of attorney in this application is not accepted for the reason(s) listed below:

- The person(s) appointed in the power of attorney is/are not registered to practice before the U.S. Patent and Trademark Office.

/s/torres/

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66000
EVA G. TRONCOSO
16990 WILDWOOD DRIVE
MONTROSE, CO 81401
UNITED STATES