15. Claims 5 and 8 are rejected under 35 U.S.C. 103 as being unpatentable over Shen et al. US 2016/0349451 A1, further in view of Pezeshki et al. US 2017/0168252 A1, and further in view of Gunn, III et al. U.S.P. No. 7,162,124 B1.

Regarding independent claim 1, Shen et al. US 2016/0349451 A1, and further in view of Pezeshki et al. US 2017/0168252 A1 make obvious this claim. See the full rejection in section (14) above.

Regarding **further dependent claim 5**, and new independent **claim 8**, there is no exact teaching in Shen '451 and Pezeshki '252 to the predetermined angle of reflection to be "42 degrees." Shen '451 and Pezeshki '252 is *silent to* this 42 degree amount.

However, this range, starting with 40 to 45 degrees, and being in the exact degree of 42 degrees, is known in the optical coupling art. Gunn, III et al. U.S.P. No. 7,162,124 B1 teaches (ABS; Figs.; column 3, line 34 through column 4, line 14) an optical element coupling signals down into another optical device, and in particular in that these signals are coupled at 42 degrees (less than 43 degrees, to 41 degrees; see column 3, line 34 through column 4, line 14). This angled degree of reflection / coupling is known in the art, at the time of the effective filing of the current application.

Since Shen '451, Pezeshki '252 and Gunn III '124 are all from the same field of endeavor, the purpose disclosed by Gunn III '124 would have been recognized in the pertinent art of Shen '451 and Pezeshki '252.

A person having ordinary skill in the art at the time the invention was made would have recognized the teaching of Gunn III '124, to use optical coupling at a degree of


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reflection of 42 degrees (and between generally 40 and 45 degrees), in the device of Shen '451 and Pezeshki '252 to improve optical coupling efficiency and results. The Examiner notes that Shen '451 and Pezeshki '252 is *silent* to the exact degree of "42", as being somewhere between 40 and 45 degrees in operation. See *KSR v. Teleflex*, 127 S.Ct. 1727 (2007). Dependent claim 5, and new independent claim 8, cannot be said to impart any **patentable** distinction when reviewing the combined teachings of Shen '451 and Pezeshki '252 further in view of Gunn III '124.

16. Claim 7 is rejected under 35 U.S.C. 103 as being unpatentable over Shen et al. US 2016/0349451 A1, further in view of Pezeshki et al. US 2017/0168252 A1, and further in view of Gao et al. US 2003/0174964 A1.

Regarding independent claim 1, Shen et al. US 2016/0349451 A1, and further in view of Pezeshki et al. US 2017/0168252 A1 make obvious this claim. See the full rejection in section (14) above.

Regarding **dependent claim 7**, there is no *express* teaching in Shen '451 and Pezeshki '252 of using a graded index (GRIN) lens to improve optical coupling of the optical input fiber to the optical components on the receiving device.

Gao et al. US 2003/0174964 A1 teaches (ABS; Figure, including Fig. 2; paragraph [0023]; Claims) a lens coupling system that couples optical fiber(s) to optical waveguides on chip, in that optical lenses are used to improve optical coupling between the fiber(s) and the waveguide(s). Gao (para [0023]) teaches that using GRIN lenses improves optical coupling functionality by directly inputting optical signals without loss

from this coupling connection. GRIN lenses are also known and commonly used in the art.

Since Shen '451, Pezeshki '252, and Gao '964 are both from the same field of endeavor, the purpose disclosed by Gao '964 would have been recognized in the pertinent art of Shen '451 and Pezeshki '252.

A person having ordinary skill in the art at the time the invention was made would have recognized the teaching of Gao '964, to use GRIN lenses to improve optical coupling between an optical fiber(s) and an optical waveguide(s) on a chip or substrate type configuration, in the device of Shen '451 and Pezeshki '252 to improve optical coupling efficiency. See *KSR v. Teleflex*, 127 S.Ct. 1727 (2007). Dependent claim 7 cannot be said to impart any **patentable** distinction when reviewing the combined teachings of Shen '451 and Pezeshki '252, and further in view of Gao.

***Response to Arguments***

17. Applicant's arguments (pages 5-8) filed February 28, 2018 have been fully considered but they are *not* persuasive.

18. Applicant argues for language of "disposed *on* the same surface" to overcome Shen et al. '451. See pages 7-8 filed February 28, 2018. However, the prior art of Shen gives multiple embodiments (location(s) of the AWG), and further that intervening elements (such as 100) still allows a *reasonable* interpretation of Shen element 300 in Fig. 1 to be "disposed on" element 600. As a comparison, a book stacked on *another*


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book stacked on a table is still "on the surface of table", even though the "another book" is intervening. Even though element 300 of Shen may be located with an intervening element 100 in Figure 1 of Shen, the element 300 is still “disposed on" the same surface of element 600 as element 300.

19. Applicant argues for language of “*substantial* portion of the AWG" disposed on the same surface to overcome Shen. See pages 7-8 filed February 28, 2018. However, this language is both vague and indefinite (see above rejections under 35 U.S.C. 112(b)) as well as *reasonably* met by the prior art to Shen. Shen also shows different embodiments in which the AWG may be located as claimed. It is unclear how having "substantial portion" of the AWG to be located on a surface creates any **patentable** distinction over the prior art.

20. Applicant argues for language of a “top surface” of the AWG to reflect optical signals to the photodiode(s) in Shen. See pages 7-8 filed February 28, 2018. Applicant cites Figure 4 of Shen and the reflective layer added to the end surface for coupling. While the Examiner does not concede that Figure 4 of Shen is overcome by the amendment to independent claim 1, the Examiner notes that Figure 4 is simply *one* embodiment of the AWG out coupling surface. See ***Figure 2*** of Shen, which does not include this added reflective layer. At least Shen's Figure 2 clearly meets each claimed limitation of amended independent claim 1 in the final paragraph starting "wherein the optical signals are divided" in an obviousness analysis under 35 U.S.C. 103 above.


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21. Also, based on the amendments filed February 28, 2018, the Examiner has conducted further searches and prior art analysis. Accordingly, additional prior art rejections (Ho et al. '819 and Gamache et al. '786 as the primary references) are made herein. This action is made **FINAL**.

### *Inventorship*

22. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

### *Conclusion*

23. The prior art made of record is considered pertinent to applicant's disclosure: PTO-892 form references A-B.

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Petkovsek whose telephone number is (571) 272-4174. The examiner can normally be reached on M-F 8:30-5:30PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen Chau Le can be reached on (571) 272-2397. 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.

/Daniel Petkovsek/
Primary Examiner, Art Unit 2874
March 30, 2018


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| Notice of References Cited | Application/Control No. 15/432,242 | Applicant(s)/Patent Under Reexamination LUO ET AL. | |
|---|---|---|---|
| | Examiner Daniel Petkovsek | Art Unit 2874 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | CPC Classification | US Classification |
|---|---|---|---|---|---|---|
| * | A | US-9,341,786 B1 | 05-2016 | Gamache; Claude | G02B6/30 | 1/1 |
| * | B | US-7,162,124 B1 | 01-2007 | Gunn, III; Lawrence C. | G02B6/30 | 385/27 |
| | C | US- | | | | |
| | D | US- | | | | |
| | E | US- | | | | |
| | F | US- | | | | |
| | G | US- | | | | |
| | H | US- | | | | |
| | I | US- | | | | |
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| | K | US- | | | | |
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| | M | US- | | | | |

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**NON-PATENT DOCUMENTS**

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*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.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15432242 |
| Filing Date | 2017-02-14 |
| First Named Inventor | LUO, Jian Hong |
| Art Unit | 2874 |
| Examiner Name | Petkovsek, Daniel |
| Attorney Docket Number | AOIC006 |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 5617234 | | 1997-04-01 | KOGA ET AL | |
| | 2 | 7376308 | B2 | 2008-05-20 | CHEBEN ET AL | |
| | 3 | 8831433 | B2 | 2014-09-09 | HO ET AL | |
| | 4 | 7058263 | B2 | 2006-06-06 | WELCH ET AL | |
| | 5 | 7532783 | B2 | 2009-05-12 | BAI | |
| | 6 | 7941053 | B2 | 2011-05-10 | DALLESASSE | |

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15432242 |
| | Filing Date | 2017-02-14 |
| | First Named Inventor | LUO, Jian Hong |
| | Art Unit | 2874 |
| | Examiner Name | Petkovsek, Daniel |
| | Attorney Docket Number | AOIC006 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 20030174964 | A1 | 2003-09-18 | GAO ET AL | |
| | 2 | 20040161186 | A1 | 2004-08-19 | CRAFTS ET AL | |
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| | 5 | 20170168252 | A1 | 2017-06-15 | PEZESHKI ET AL | |
| | 6 | 20150249501 | A1 | 2015-09-03 | NAGARAJAN | |
| | 7 | 20170307819 | A1 | 2017-10-26 | HO ET AL | |

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Receipt date: 03/01/2018

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15432242 |
| Filing Date | 2017-02-14 |
| First Named Inventor | LUO, Jian Hong |
| Art Unit | 2874 |
| Examiner Name | Petkovsek, Daniel |
| Attorney Docket Number | AOIC006 |

| Examiner Initials* | Cite No | 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, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | PCT Search Report and Written Opinion mailed July 6, 2017, received in corresponding PCT Application No. PCT/US17/29350, 9 pgs. | |
| | 2 | US Office Action mailed August 21, 2017, received in US Application Serial No. ~~15/432,242~~ 15/137,823, 13 pgs. ~~15 pgs.~~ | |

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**EXAMINER SIGNATURE**

| Examiner Signature | /DANIEL PETKOVSEK/ | Date Considered | 03/29/2018 |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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AOI_NDCal 4-24cv09041_ 00001905

| Electronic Patent Application Fee Transmittal | |
|---|---|
| **Application Number:** | 15137823 |
| **Filing Date:** | 25-Apr-2016 |
| **Title of Invention:** | TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME |
| **First Named Inventor/Applicant Name:** | I-Lung HO |
| **Filer:** | Kevin J. Carroll/April Davis |
| **Attorney Docket Number:** | PAT260-018US |
| Filed as Large Entity | |
| **Filing Fees for Utility under 35 USC 111(a)** | |

| 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:** | | | | |



AOI_NDCal 4-24cv09041_ 00001906

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| SUBMISSION- INFORMATION DISCLOSURE STMT | 1806 | 1 | 240 | 240 |
| | | **Total in USD ($)** | | **240** |



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# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 32353011 |
| **Application Number:** | 15137823 |
| **International Application Number:** | |
| **Confirmation Number:** | 2275 |
| **Title of Invention:** | TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME |
| **First Named Inventor/Applicant Name:** | I-Lung HO |
| **Customer Number:** | 27543 |
| **Filer:** | Kevin J. Carroll/April Davis |
| **Filer Authorized By:** | Kevin J. Carroll |
| **Attorney Docket Number:** | PAT260-018US |
| **Receipt Date:** | 16-APR-2018 |
| **Filing Date:** | 25-APR-2016 |
| **Time Stamp:** | 17:56:33 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $240 |
| RAM confirmation Number | 041718INTEFSW00005127501705 |
| Deposit Account | 501705 |
| Authorized User | April Davis |

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37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 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 | Information Disclosure Statement (IDS) Form (SB08) | PAT260_018US_SUPP_IDS_041618.pdf | 612032<br>71c6754d981f9865bb9fd7aab97a20c0b88db2d8 | no | 4 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Other Reference-Patent/App/Search documents | AOIC006_OfficeAction_041318.pdf | 1162759<br>e49ae08e38bed24a53c457307d225b95455b5c56 | no | 28 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (SB06) | fee-info.pdf | 30671<br>c44668d3e90795fcc7fb77496395b9e5d60e7ad3 | no | 2 |
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**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.**

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# NOTICE OF ALLOWANCE AND FEE(S) DUE

27543 7590 06/04/2018

APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

| EXAMINER | |
|---|---|
| PHAN, HANH | |
| ART UNIT | PAPER NUMBER |
| 2636 | |

DATE MAILED: 06/04/2018

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/137,823 | 04/25/2016 | I-Lung HO | PAT260-018US | 2275 |

TITLE OF INVENTION: TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1000 | $0 | $0 | $1000 | 09/04/2018 |

**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.**

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 15/137,823 | 04/25/2016 | I-Lung HO | PAT260-018US | 2275 |

TITLE OF INVENTION: TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1000 | $0 | $0 | $1000 | 09/04/2018 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| PHAN, HANH | 2636 | 398-087000 |

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 _____
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 credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29
  NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27
  NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status.
  NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE



AOI_NDCal 4-24cv09041_ 00001911

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/137,823 | 04/25/2016 | I-Lung HO | PAT260-018US | 2275 |

27543 7590 06/04/2018

APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

| EXAMINER | |
|---|---|
| PHAN, HANH | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2636 | |

DATE MAILED: 06/04/2018

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B 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.

## 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.


AOI_NDCal 4-24cv09041_ 00001913

| Notice of Allowability | Application No. 15/137,823 | Applicant(s) HO ET AL. | |
|---|---|---|---|
| | Examiner HANH PHAN | Art Unit 2636 | AIA (First Inventor to File) Status Yes |

***-- 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 *amendment filed on 01/29/2018*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-19*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   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.**

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   ☐ 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)**

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/HANH PHAN/
Primary Examiner, Art Unit 2636

**EXAMINER'S AMENDMENT**

1. 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 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claim 20 is cancelled.

2. **REASONS FOR ALLOWANCE**:

Claims 1-19 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 1-11 are allowable because Bai (US Patent No. 7,532,783) fails to teach a tapered region disposed at the second end of the AWG chip configured to receive light via the plurality of output waveguides and reflect the same towards an exposed output interface region of the AWG chip, wherein the exposed output interface region emits the received light from the AWG chip on the same side as the substrate without passing the received light through the substrate.

Claims 12-19 are allowable because Dallesasse (US Patent No. 7,941,053) and Bai (US Patent No. 7,532,783) fails to teach a first end for coupling to an optical coupling receptacle to receive an optical signal comprising a plurality of channel

wavelengths, wherein the first end for coupling to the optical coupling receptacle includes an angled surface to reduce back reflections of an optical signal launched into the AWG chip.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

/HANH PHAN/

Primary Examiner, Art Unit 2636


AOI_NDCal 4-24cv09041_ 00001916

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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.

**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 7162124 | B1 | 2007-01-09 | GUNN, III ET AL | |
| | 2 | 9341786 | B1 | 2016-05-17 | GAMACHE ET AL | |

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| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

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**FOREIGN PATENT DOCUMENTS** Remove

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

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AOI_NDCal 4-24cv09041_ 00001917

| INFORMATION DISCLOSURE STATEMENT BY APPLICANT ( Not for submission under 37 CFR 1.99) | | |
|---|---|---|
| | Application Number | 15137823 |
| | Filing Date | 2016-04-25 |
| | First Named Inventor | HO |
| | Art Unit | 2636 |
| | Examiner Name | PHAN, Hanh |
| | Attorney Docket Number | PAT260-018US |

| Examiner Initials* | Cite No | 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, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | US Office Action mailed April 13, 2018, received in US Application Serial No. 15/432,242, 28 pgs. | |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | /HANH PHAN/ | Date Considered | 05/21/2018 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the 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 the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Kevin J. Carroll/ | Date (YYYY-MM-DD) | 2018-04-16 |
| Name/Print | Kevin J. Carroll | Registration Number | 36384 |

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**



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



AOI_NDCal 4-24cv09041_ 00001919

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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 the Freedom of Information Act requires disclosure of these record s.

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).

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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 inspections or an issued patent.

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



AOI_NDCal 4-24cv09041_ 00001920

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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**( Not for submission under 37 CFR 1.99)**

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| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 5617234 | | 1997-04-01 | KOGA ET AL | |
| | 2 | 7376308 | B2 | 2008-05-20 | CHEBEN ET AL | |
| | 3 | 8831433 | B2 | 2014-09-09 | HO ET AL | |

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| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | | | | | |

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|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

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AOI_NDCal 4-24cv09041_ 00001921

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

If you wish to add additional Foreign Patent Document citation information please click the Add button [Add]

**NON-PATENT LITERATURE DOCUMENTS** [Remove]

| Examiner Initials* | Cite No | 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, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | PCT Search Report and Written Opinion mailed July 6, 2017, received in corresponding PCT Application No. PCT/US17/29350, 9 pgs. | |

If you wish to add additional non-patent literature document citation information please click the Add button [Add]

**EXAMINER SIGNATURE**

| Examiner Signature | /HANH PHAN/ | Date Considered | 05/21/2018 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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



AOI_NDCal 4-24cv09041_ 00001922

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

## CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the 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 the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Kevin J. Carroll/ | Date (YYYY-MM-DD) | 2017-10-06 |
| Name/Print | Kevin J. Carroll | Registration Number | 36384 |

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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.**



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



AOI_NDCal 4-24cv09041_ 00001923

## 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 the Freedom of Information Act requires disclosure of these record s.

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 inspections 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.



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



AOI_NDCal 4-24cv09041_ 00001924

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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.

**INFORMATION DISCLOSURE STATEMENT BY APPLICANT**
**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

**U.S.PATENTS** Remove

| Examiner Initial* | Cite No | Patent Number | Kind Code[1] | Issue Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
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| Examiner Initial* | Cite No | Publication Number | Kind Code[1] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear |
|---|---|---|---|---|---|---|
| | 1 | 20030174964 | A1 | 2003-09-18 | GAO ET AL | |
| | 2 | 20040161186 | A1 | 2004-08-19 | CRAFTS ET AL | |
| | 3 | 20160149662 | A1 | 2016-05-26 | SOLDANO ET AL | |
| | 4 | 20160349451 | A1 | 2016-12-01 | SHEN ET AL | |
| | 5 | 20170168252 | A1 | 2017-06-15 | PEZESHKI ET AL | |

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AOI_NDCal 4-24cv09041_ 00001925

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

| Examiner Initial* | Cite No | Foreign Document Number[3] | Country Code[2] | Kind Code[4] | Publication Date | Name of Patentee or Applicant of cited Document | Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear | T[5] |
|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | |

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**NON-PATENT LITERATURE DOCUMENTS** Remove

| Examiner Initials* | Cite No | 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, pages(s), volume-issue number(s), publisher, city and/or country where published. | T[5] |
|---|---|---|---|
| | 1 | US Office Action mailed August 29, 2017, received in US Application Serial No. 15/432,242, 15 pgs. | |

If you wish to add additional non-patent literature document citation information please click the Add button Add

**EXAMINER SIGNATURE**

| Examiner Signature | /HANH PHAN/ | Date Considered | 05/21/2018 |
|---|---|---|---|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.



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AOI_NDCal 4-24cv09041_ 00001926

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**( Not for submission under 37 CFR 1.99)**

| | |
|---|---|
| Application Number | 15137823 |
| Filing Date | 2016-04-25 |
| First Named Inventor | HO |
| Art Unit | 2636 |
| Examiner Name | PHAN, Hanh |
| Attorney Docket Number | PAT260-018US |

## CERTIFICATION STATEMENT

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See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

## SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

| | | | |
|---|---|---|---|
| Signature | /Kenneth M. Thompson/ | Date (YYYY-MM-DD) | 2018-01-29 |
| Name/Print | Kenneth M. Thompson | Registration Number | 72001 |

This collection of information is required by 37 CFR 1.97 and 1.98. 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 1 hour 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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AOI_NDCal 4-24cv09041_ 00001927

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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).

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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 inspections 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.



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



AOI_NDCal 4-24cv09041_ 00001928

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15137823 | HO ET AL. |
| | **Examiner** | **Art Unit** |
| | HANH PHAN | 2636 |

| CPC | | | | | | |
|---|---|---|---|---|---|---|
| **Symbol** | | | | | **Type** | **Version** |
| G02B | | 6 | / | 12016 | F | 2013-01-01 |
| H04J | | 14 | / | 02 | I | 2013-01-01 |
| G02B | | 6 | / | 12011 | I | 2013-01-01 |
| G02B | | 6 | / | 4292 | I | 2013-01-01 |
| G02B | | 6 | / | 4246 | I | 2013-01-01 |
| G02B | | 6 | / | 12019 | I | 2013-01-01 |
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| CPC Combination Sets | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Symbol** | | | | **Type** | **Set** | **Ranking** | **Version** |
| | | | / | | | | |
| | | | / | | | | |

| NONE | | **Total Claims Allowed:** | |
|---|---|---|---|
| (Assistant Examiner) | (Date) | 19 | |
| /HANH PHAN/<br>Primary Examiner.Art Unit 2636 | 05/24/2018 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 5A |

U.S. Patent and Trademark Office — Part of Paper No.



AOI_NDCal 4-24cv09041_ 00001929

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15137823 | HO ET AL. |
| | **Examiner** | **Art Unit** |
| | HANH PHAN | 2636 |

| US ORIGINAL CLASSIFICATION | | INTERNATIONAL CLASSIFICATION | |
|---|---|---|---|
| CLASS | SUBCLASS | CLAIMED | NON-CLAIMED |
| 398 | 79 | H 0 4 J 14 / 02 (2006.01.01) | |

| CROSS REFERENCE(S) | | | | | |
|---|---|---|---|---|---|
| CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | |
| 398 | 135 | 136 | 159 | 84 | 87 |
| 398 | 202 | 208 | | | |
| 385 | 24 | 37 | 14 | | |

| | | | |
|---|---|---|---|
| NONE | | **Total Claims Allowed:** | |
| (Assistant Examiner) | (Date) | 19 | |
| /HANH PHAN/<br>Primary Examiner.Art Unit 2636 | 05/24/2018 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 5A |

U.S. Patent and Trademark Office — Part of Paper No.



AOI_NDCal 4-24cv09041_ 00001930

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15137823 | HO ET AL. |
| | **Examiner** | **Art Unit** |
| | HANH PHAN | 2636 |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 17 | 17 | | | | | | | | | | | | |
| 2 | 2 | 18 | 18 | | | | | | | | | | | | |
| 3 | 3 | 19 | 19 | | | | | | | | | | | | |
| 4 | 4 | | 20 | | | | | | | | | | | | |
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| 6 | 6 | | | | | | | | | | | | | | |
| 8 | 7 | | | | | | | | | | | | | | |
| 9 | 8 | | | | | | | | | | | | | | |
| 7 | 9 | | | | | | | | | | | | | | |
| 10 | 10 | | | | | | | | | | | | | | |
| 11 | 11 | | | | | | | | | | | | | | |
| 12 | 12 | | | | | | | | | | | | | | |
| 13 | 13 | | | | | | | | | | | | | | |
| 14 | 14 | | | | | | | | | | | | | | |
| 15 | 15 | | | | | | | | | | | | | | |
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|---|---|---|---|
| NONE | | **Total Claims Allowed:** | |
| (Assistant Examiner) | (Date) | 19 | |
| /HANH PHAN/<br>Primary Examiner.Art Unit 2636 | 05/24/2018 | O.G. Print Claim(s) | O.G. Print Figure |
| (Primary Examiner) | (Date) | 1 | 5A |

U.S. Patent and Trademark Office

Part of Paper No.



AOI_NDCal 4-24cv09041_ 00001931

| Index of Claims | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15137823 | HO ET AL. |
| | Examiner | Art Unit |
| | HANH PHAN | 2636 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ✓ | Rejected | - | Cancelled | N | Non-Elected | A | Appeal |
| = | Allowed | ÷ | Restricted | I | Interference | O | Objected |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

| CLAIM | | DATE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Final | Original | 05/24/2018 | | | | | | | | |
| 1 | 1 | = | | | | | | | | |
| 2 | 2 | = | | | | | | | | |
| 3 | 3 | = | | | | | | | | |
| 4 | 4 | = | | | | | | | | |
| 5 | 5 | = | | | | | | | | |
| 6 | 6 | = | | | | | | | | |
| 8 | 7 | = | | | | | | | | |
| 9 | 8 | = | | | | | | | | |
| 7 | 9 | = | | | | | | | | |
| 10 | 10 | = | | | | | | | | |
| 11 | 11 | = | | | | | | | | |
| 12 | 12 | = | | | | | | | | |
| 13 | 13 | = | | | | | | | | |
| 14 | 14 | = | | | | | | | | |
| 15 | 15 | = | | | | | | | | |
| 16 | 16 | = | | | | | | | | |
| 17 | 17 | = | | | | | | | | |
| 18 | 18 | = | | | | | | | | |
| 19 | 19 | = | | | | | | | | |
| | 20 | - | | | | | | | | |

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L2 | 12 | miao-zhengyu.in. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 20:47 |
| L3 | 2382 | li-qin.in. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 20:50 |
| L4 | 2 | li-qin.in. and AWG and ((angle$3 adj surface) or exposed) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 20:51 |
| L5 | 6 | (("7532783") or ("8831433") or ("7376308")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 20:57 |
| L6 | 20 | (("7162124") or ("9341786") or ("20030174964") or ("20040161186") or ("20160149662") or ("20160349451") or ("20170168252") or ("5617234")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 21:05 |
| L7 | 5545470 | 385/24, "37", "14".ccls. and AWG and ((angle$3 adj surface) or exposed) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 21:11 |
| L8 | 656 | 385/$.ccls. and AWG and ((angle$3 adj surface) or exposed) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 21:11 |
| L9 | 103 | 398/$.ccls. and AWG and ((angle$3 adj surface) or exposed) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 21:33 |
| L10 | 41 | H04J14/$.cpc. and AWG and | US-PGPUB; | OR | OFF | 2018/05/25 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | ((angle$3 adj surface) or exposed) and substrate and PLC | USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | | | 21:38 |
| L11 | 36 | H04B10/$.cpc. and AWG and ((angle$3 adj surface) or exposed) and substrate and PLC | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 22:02 |
| L12 | 0 | G02F6/$.cpc. and AWG and ((angle$3 adj surface) or exposed) and substrate and PLC | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 22:04 |
| L13 | 170 | G02B6/$.cpc. and AWG and ((angle$3 adj surface) or exposed) and substrate and PLC | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 22:04 |
| S1 | 199 | boduch-mark-e.in. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 13:27 |
| S2 | 6 | "7532783" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 19:13 |
| S3 | 9 | (("7532783") or ("7941053") or ("7058263") or ("20150249501")).PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 19:14 |
| S4 | 0 | ("7532783").URPN. | USPAT | OR | OFF | 2018/05/25 19:23 |
| S5 | 4 | ("20040131302" \| "5617234" \| "6108472" \| "7050666").PN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2018/05/25 19:23 |
| S6 | 106 | ho-i-lung.in. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2018/05/25 19:42 |

**5/ 25/ 2018 10:08:15 PM**

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 15137823 | HO ET AL. |
| | Examiner | Art Unit |
| | HANH PHAN | 2636 |

| CPC- SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| H04J14/02, H04B10/40, H04J14/0282, H04j14/0221, H04j14/0202, H04B10/506, H04B10/503, H04B10/504, G02B6/4246, G02B6/4293, G02B6/4249 | 05/24/2018 | HP |

| CPC COMBINATION SETS - SEARCHED | | |
|---|---|---|
| Symbol | Date | Examiner |
| | | |

| US CLASSIFICATION SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 398 | 135, 136, 137, 138, 139, 79, 82, 158. 159, 85, 87, 84, 202, 208, 213, 214 | 05/24/2018 | HP |
| 385 | 24, 37, 14, 43 | 05/24/2018 | HP |
| UPDATE SEARCH | | 05/24/2018 | HP |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| SEARCH NOTES | | |
|---|---|---|
| Search Notes | Date | Examiner |
| EAST SEARCH SEE ATTACHED PRINTOUT IN THE FILE | 05/24/2018 | HP |
| IEEE SEARCH | 05/24/2018 | HP |
| JPO SEARCH | 05/24/2018 | HP |
| CPC SEARCH PERFORMED IN EAST | 05/24/2018 | HP |
| PGPUB TEXT SEARCH SEE INTERFERENCE SEARCH PRINTOUT | 05/24/2018 | HP |

| INTERFERENCE SEARCH |
|---|

| | |
|---|---|
| | |

| US Class/ CPC Symbol | US Subclass / CPC Group | Date | Examiner |
|---|---|---|---|
| 398 | 135, 136, 137, 138, 139, 79, 82, 158. 159, 85, 87, 84, 202, 208, 213, 214 | 05/24/2018 | HP |
| 385 | 24, 37, 14, 43 | 05/24/2018 | HP |

**To:** kinsella@ao-inc.com,docketing@gtpp.com,kcarroll@gtpp.com
**From:** PAIR_eOfficeAction@uspto.gov
**Cc:** PAIR_eOfficeAction@uspto.gov
**Subject:** Private PAIR Correspondence Notification for Customer Number 27543

Jun 04, 2018 03:29:37 AM

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13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478
UNITED STATES

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| Application | Document | Mailroom Date | Attorney Docket No. |
|---|---|---|---|
| 15137823 | NOA | 06/04/2018 | PAT260-018US |
| | 1449 | 06/04/2018 | PAT260-018US |
| | 1449 | 06/04/2018 | PAT260-018US |
| | 1449 | 06/04/2018 | PAT260-018US |

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PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

## 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)

27543 7590 06/04/2018
APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

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.

**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.

| | |
|---|---|
| April Davis | (Depositor's name) |
| April Davis | (Signature) |
| July 5, 2018 | (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/137,823 | 04/25/2016 | I-Lung HO | PAT260-018US | 2275 |

TITLE OF INVENTION: TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1000 | $0 | $0 | $1000 | 09/04/2018 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| PHAN, HANH | 2636 | 398-087000 |

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 Grossman Tucker Perreault
2 & Pfleger, PLLC
3 Norman S. Kinsella

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: Applied Optoelectronics, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Sugar Land, Texas

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
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- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

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Authorized Signature _____ Date July 5, 2018

Typed or printed name Kevin J. Carroll Registration No. 36,384



PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE



AOI_NDCal 4-24cv09041_ 00001938

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 15137823 |
| **Filing Date:** | 25-Apr-2016 |
| **Title of Invention:** | TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME |
| **First Named Inventor/Applicant Name:** | I-Lung HO |
| **Filer:** | Kevin J. Carroll/April Davis |
| **Attorney Docket Number:** | PAT260-018US |

Filed as Large Entity

**Filing Fees for Utility under 35 USC 111(a)**

| 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 | 1000 | 1000 |



AOI_NDCal 4-24cv09041_ 00001939

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Extension-of-Time:** | | | | |
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **1000** |



AOI_NDCal 4-24cv09041_ 00001940

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 33096870 |
| **Application Number:** | 15137823 |
| **International Application Number:** | |
| **Confirmation Number:** | 2275 |
| **Title of Invention:** | TECHNIQUES FOR DIRECT OPTICAL COUPLING OF PHOTODETECTORS TO OPTICAL DEMULTIPLEXER OUTPUTS AND AN OPTICAL TRANSCEIVER USING THE SAME |
| **First Named Inventor/Applicant Name:** | I-Lung HO |
| **Customer Number:** | 27543 |
| **Filer:** | Kevin J. Carroll/April Davis |
| **Filer Authorized By:** | Kevin J. Carroll |
| **Attorney Docket Number:** | PAT260-018US |
| **Receipt Date:** | 05-JUL-2018 |
| **Filing Date:** | 25-APR-2016 |
| **Time Stamp:** | 15:37:47 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | DA |
| Payment was successfully received in RAM | $1000 |
| RAM confirmation Number | 070618INTEFSW00002008501705 |
| Deposit Account | 501705 |
| Authorized User | April Davis |

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37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)



AOI_NDCal 4-24cv09041_ 00001941

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 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 | Issue Fee Payment (PTO-85B) | IssueFee_Transmittal.pdf | 102555<br>be645dd04844189c123ff4289c4138a1f1f12110 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30407<br>55f959417367c9afde2dd60d36b2c8aaa401477a | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 132962 | | |

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**New International Application Filed with the USPTO as a Receiving Office**

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| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 15/137,823 | 08/07/2018 | 10042116 | PAT260-018US | 2275 |

27543 7590 07/18/2018

APPLIED OPTOELECTRONICS, INC.
13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478

# 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.

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

I-Lung HO, Sugar Land, TX;
Applied Optoelectronics, Inc., Sugar Land, TX;
Zhengyu MIAO, Sugar Land, TX;
Qin LI, Houston, TX;

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**From:** PAIR_eOfficeAction@uspto.gov
**Cc:** PAIR_eOfficeAction@uspto.gov
**Subject:** Private PAIR Correspondence Notification for Customer Number 27543

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13115 JESS PIRTLE BLVD.
SUGAR LAND, TX 77478
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| Application | Document | Mailroom Date | Attorney Docket No. |
|---|---|---|---|
| 15137823 | ISSUE.NTF | 07/18/2018 | PAT260-018US |

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