> ordinary skill in the art to use because Applicant has not disclosed that placing the optoelectrical components directly on the same surface provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Shen et. al. '451 to perform equally well with the elements 300 and 700 placed directly on the same surface / substrate because these claim terms would have been easily recognized and integrated by a normally skilled artisan, but further would not impede or destroy the functionality of the electrically connected elements *in operation*."
> *Id. (Emphasis Supplied)*.

Applicant respectfully disagrees and submits that the rejection lacks a valid rational underpinning to support a *prima facie* case of obviousness.

Applicant notes that in order to support a conclusion that a claim is directed to obvious subject matter, i.e., that a feature is an obvious matter of design choice, an Examiner must present a "convincing line of reasoning" as to why one of ordinary skill in the art would have found the claimed feature to have been obvious. *Ex parte Clapp, 227 U.S.P.Q. 972, 973 (BPAI 1985).* Further, when determining whether a rejection based on design choice is appropriate, the Examiner must review the Specification *and ascertain if the limitation in question is disclosed as serving any advantage or particular purpose, or whether it solves a stated problem.* The Examiner also should explain the reasoning used to determine that the prior art would have performed equally as well as the claimed invention. These two steps help present the aforementioned 'convincing line of reasoning.' *See Ex parte Clapp, 227 U.S.P.Q. at 973.*

First, Applicant notes that the assertion the "Applicant has not disclosed that the optoelectrical components directly on the same surface provides an advantage, is used for a particular purpose, or solves a stated problem" is manifestly untrue. Applicant reproduces, in relevant part, language from page 2 lines 20-24 of Applicants originally-filed disclosure:

> Further, the optoelectronic diodes and the light receiving chip may be disposed on the same surface, simplifying the design of the structure and reducing the length of the bonding wire to enhance the integrity of the entire structure and lower the manufacturing cost of the same.

As disclosed above, placement of the optoelectronic diodes and the light receiving chip on the same surface advantageously simplifies the design of the structure, reduces the length of the wire bonding, and ultimately reduces cost of manufacturing the same. Applicant notes that wire bonds also introduces time of flight (TOF) delays, and that one of ordinary skill in the art would recognize that shortening wire bonds minimizes or otherwise reduces TOF. Applicant's disclosure

AOI_NDCal 4-24cv09041_ 00002182

clearly demonstrates that it would not have been obvious design choice and the Applicant's disclosure expressly discloses the advantages of disposing the optoelectronic diodes and the light receiving chip on the same surface. Thus, Applicant respectfully submits that the Office Action has failed to present a valid *prima facie* case of obviousness as the rejection appears to be impermissibly formulated without having considered the language in Applicant's disclosure clearly supporting the patentability of this feature.

Second, Applicant notes that "design choice may be an acceptable rationale for an obviousness rejection when a claimed product merely arranges known elements in a configuration recognized as functionally equivalent to a known configuration." *See In re Kuhle, 526 F.2d 553, 555 (CCPA 1975).* The instant application is not such a case as the Office Action has not provided *any* evidence that placing both the optoelectronic diodes and the light receiving chip on the same surface was a known alternative in the prior art. Indeed, no reasoning beyond the Examiner's summary conclusion that the device of Chen would have functioned "equally well" if optical detector 300 and driver 700 had been placed directly on the same surface because this "would not impede or destroy the functionality of the electrically connected elements in *operation*." *See Office Action; page 5.* One of ordinary skill in the art would simply not be motivated to make the changes asserted by the Office Action to Chen without the benefit of Applicant's disclosure.

Moreover, the Examiner's conclusion that the device of Chen would have performed equally well as the claimed invention is provided without evidence and does not consider, for instance, how the asserted change to Chen impacts thermal management, and by extension performance, of the device of Chen given how far apart the optical detector 300 and driver 700 are displaced from each other in each embodiment (See FIG. 1 of Chen below). Nor does the conclusion consider how each element of Chen is positioned at *different* levels (i.e., optical detector 300 is on a submount, the driver 700 is not), and how each element of Chen has a *different* (independent) thermal conduction path to the circuit board 600 (see FIG. 1 of Chen provided below, which is representative of all embodiments). Simply stated, the Office Action has not provided a valid rationale for asserting the change to Chen would have been obvious given the complexities and challenges associated with optical transmission systems.

AOI_NDCal 4-24cv09041_ 00002183

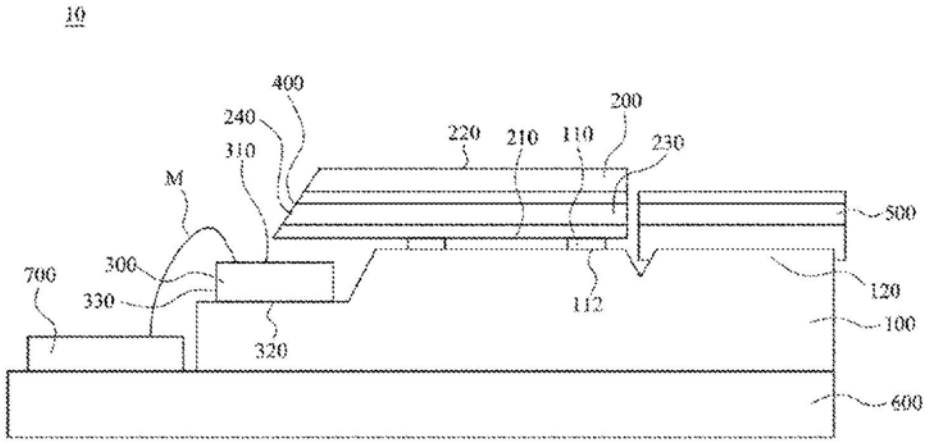


FIG. 1

Nothing in Pezeshki remedies these noted deficiencies. Gunn and Gao were cited to in order to teach various features of claims 5, 7 and 8, but neither reference remedies the deficiencies of Chen and Pezeshki noted above. For at least these reasons, Applicant respectfully submits that the Office Action has failed to present a valid *prima facie* case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections of claims 1-3 and 5-8 under 35 U.S.C. § 103.

Claims 1-3 and 6 were also rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 9,341,786 (Gamache) in view of Shen. Claims 5 and 8 were rejected under 35 U.S.C. § 103 as being unpatentable over Gamache, Chen, and further in view of Gunn. Claim 7 was rejected under 35 U.S.C. § 103 as being unpatentable over Gamache, Shen, and further in view of Gao. Applicant respectfully requests reconsideration.

As discussed by Applicant in the response dated July 13, 2018, Gamache is directed to an approach that *integrates* light sensitive both light detecting and light converting elements into a *single chip*, and more specifically, into a planar lightwave circuit (PLC). *See Response to Office Action dated July 13, 2018; pages 6-7.* In contrast, Applicant's claimed invention requires *separate and distinct* optoelectronic diodes and a light receiving chip that electrically couple to each other *via wire bonding*.

Page 12 of the Office Action agrees with Applicant's position that Gamache fails to teach or suggest an approach utilizing separate and distinct optoelectronic diodes and light receiving

AOI_NDCal 4-24cv09041_ 00002184

chips, and wire bonding electrically coupling the optoelectronic diodes and light receiving chip. The Office Action cites to Shen in effort to remedy this deficiency and notes:

> Configurations such as shown in Shen et al. '451 are common and ubiquitous in the prior art of integrated optoelectronic devices on a substrate or a printed circuit board, because they are known to allow *segmentation* and differentiation of two distinct elements, so that all elements need not necessarily be integrated into one single chip. For example, a skilled artisan would recognized (*sic*) that two different standalone elements may be used becaused then one of them could be replaced without replacing the ***entire*** chip.
> *Office Action; page 12 (Emphasis Supplied).*

In addition, Page 13 of the Office Action asserts one would be motivated to make such a change to the device of Chen and electrically couple the distinct components by wire bonding for purposes of "making modifications and swapping parts easier and more efficient (than changing the entire single chip for maintenance)."

The Office Action has not provided *any* rational as to what teaching, suggestion, or motivation in the cited prior art would lead one to replace the *single* PLC of Gamache with separate optical detector and driver as taught by Chen. *See MPEP 2143(I).* Instead, the Office Action asserts that Chen and Gamache are in the same field of endeavor, and then *speculates* because Chen discloses separate optoelectronic diodes and light receiving chip that Chen inherently teaches utilizing two separate chips to make "swapping" of those parts easier. Nothing disclosed in Chen, nor the other prior art, supports the Office Action's conclusion. Simply stated, no valid *reason* for why one of ordinary skill in the art would replace the single PLC chip of Gamache with the multi-chip approach of Chen has been provided.

Moreover, even if one of ordinary skill in the art endeavored to replace the single PLC chip of Gamache with multiple chips, the change would at *best* require a substantial redesign of the device of Gamache to accommodate a non-PLC structure, and at *worst*, potentially render the device of Gamache *inoperable for its intended purposes*. Moreover, Applicant notes that the multi-chip approach of Chen would likely require the inclusion of *wire bonds*. The Office Action has not provided any reason as to *why* one of ordinary skill in the art would be motivated to introduce additional wire bonds in Chen to couple separate photodiode and driver chips when wire bonds raise significant issues related to, for instance, time of flight, impedance matching, and structural instability (wire bonds are sensitive and can be easily damaged during manufacture). *C.f. Applicant's Originally Filed Disclosure; page 2 lines 20-24.*

AOI_NDCal 4-24cv09041_ 00002185

Accordingly, the proposed combination of Gamache and Chen fails to render claim 1, and the claims dependent therefrom, obvious as the proposed combination fails to teach or suggest every element of the claims. Gunn and Gao were cited to in order to teach various features of dependent claims 5, 7 and 8, but fail to remedy the deficiencies of Gamache and Chen discussed above.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of the claims 1-3, 5-8 under 35 U.S.C. § 103.

Conclusion

The claims have been shown to be allowable over the prior art. Applicant believes that this paper is responsive to each and every ground of rejection cited by the Examiner in the Action dated April 13, 2017, and respectfully requests favorable action in this application. The examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application. Please apply any charges not covered, or any credits, to Deposit Account 50-1705 (Reference Number AOIC006).

Respectfully submitted,

GROSSMAN, TUCKER, PERREAULT & PFLEGER PLLC

Date: December 13, 2018

By: /Kenneth M. Thompson/
Kenneth M. Thompson
Reg. No. 72,001

55 S. Commercial Street
Manchester, NH 03101
Telephone: (603) 668-6560
Facsimile: (603) 668-2970

AOI_NDCal 4-24cv09041_ 00002186

IN THE CLAIMS

1. (Previously Presented) A multi-channel parallel optical receiving device, comprising:

a carrier;

a light receiving chip disposed on a top surface of the carrier;

a plurality of optoelectronic diodes disposed on the top surface of an end of the carrier, and the plurality of optoelectronic diodes electrically connected to the light receiving chip via bonding wire, wherein the optoelectronic diodes and the light receiving chip are disposed directly on the same surface;

an optical fiber connector disposed in another end of the carrier;

an arrayed waveguide grating further disposed on the top surface of the carrier, the arrayed waveguide grating having a first end, a middle, and a second end disposed opposite the first end, and an input end of the arrayed waveguide grating connected to the optical fiber connector for receiving an optical signal from the optical fiber, wherein the top surface of the carrier underlies the middle of the arrayed waveguide grating; and

wherein the optical signals are divided into multi-channel optical signals in parallel by the arrayed waveguide grating based on their wavelengths, the top surface defined by an output end of the arrayed waveguide grating is at a predetermined angle, causing the multi-channel optical signals reflected by the top surface to be reflected to a photosensitive surface of the plurality of optoelectronic diodes arranged in parallel, wherein the predetermined angle of the top surface defined by the output end of the arrayed waveguide grating is in a range of 41 to 46 degrees such that the top surface provides the reflection.

2. (Previously Presented) The multi-channel parallel optical receiving device according to claim 1, wherein the plurality of optoelectronic diodes are disposed on the same circuit board.

3. (Original) The multi-channel parallel optical receiving device according to claim 1, wherein the amount of the optoelectronic diodes is equal to the amount of optical paths divided

AOI_NDCal 4-24cv09041_ 00002187

by the arrayed waveguide grating.

4. (Cancelled)

5. (Previously Presented) The multi-channel parallel optical receiving device according to claim 1, wherein the predetermined angle of the top surface of the output end of the arrayed waveguide grating is 42 degrees.

6. (Original) The multi-channel parallel optical receiving device according to claim 1, wherein a first lens, for coupling the optical fiber, is disposed between the input end of the arrayed waveguide grating and the optical fiber connector.

7. (Original) The multi-channel parallel optical receiving device according to claim 1, wherein the input end of the arrayed waveguide grating is inserted directly into the optical fiber connector and a graded index lens is disposed in an end where the optical fiber connector and the arrayed waveguide grating connect.

8. (Previously Presented) A multi-channel parallel optical receiving device, comprising:

a carrier;

a light receiving chip;

a plurality of optoelectronic diodes disposed on a top surface of an end of the carrier, and the plurality of optoelectronic diodes electrically connected to the light receiving chip via wire bonding, wherein the plurality of optoelectronic diodes and the light receiving chip are directly disposed on the same surface;

an optical fiber connector disposed in another end of the carrier; ~~and~~

an arrayed waveguide grating further disposed on the top surface of the carrier, the arrayed

AOI_NDCal 4-24cv09041_ 00002188

waveguide grating having a first end, a middle, and a second end disposed opposite the first end, and an input end of the arrayed waveguide grating connected to the optical fiber connector for receiving an optical signal from the optical fiber;

wherein the top surface of the carrier underlies the middle of the arrayed waveguide grating; and

wherein the optical signals are divided into multi-channel optical signals in parallel by the arrayed waveguide grating based on their wavelengths, the top surface defined by an output end of the arrayed waveguide grating is at a predetermined angle of 42 degrees, causing the multi-channel optical signals reflected by the top surface to be reflected to a photosensitive surface of the plurality of optoelectronic diodes arranged in parallel.

AOI_NDCal 4-24cv09041_ 00002189

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.
15/432,242	02/14/2017	Jian-Hong LUO	AOIC006	2079

27543 7590 12/18/2018

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

EXAMINER	
PETKOVSEK, DANIEL	

ART UNIT	PAPER NUMBER
2874	

NOTIFICATION DATE	DELIVERY MODE
12/18/2018	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):

docketing@gtpp.com
kcarroll@gtpp.com
kinsella@ao-inc.com

Applicant-Initiated Interview Summary	Application No. 15/432,242	Applicant(s) LUO et al.	
	Examiner Daniel Petkovsek	Art Unit 2874	AIA Status Yes

All participants (applicant, applicants representative, PTO personnel):

(1) Daniel Petkovsek (Primary Examiner). (3) _____.

(2) Mr. Kenneth Thompson (Reg. #72,001). (4) _____.

Date of Interview: 12 December 2018.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☑103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: Independent claims 1 and 8.

Identification of prior art discussed: Shen et al. '451; Gamache et al. '786.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The Parties discussed the 35 U.S.C.103 rejection mailed on September 13, 2018. Mr. Thompson put forth additional arguments and reasoning that the combination of features of independent claims 1 and 8 serve to create a patentable distinction over the prior art. Although no agreement was reached in this interview, the Examiner invited Mr. Thompson to include all arguments and reasoning in writing so that more careful review can be conducted. The Examiner will await such response..

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/DANIEL PETKOVSEK/
Primary Examiner, AU 2874, December 12, 2018

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicants correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,-
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicants record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiners version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, Interview Record OK on the paper recording the substance of the interview along with the date and the examiners initials.

AOI_NDCal 4-24cv09041_ 00002192

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

Dec 18, 2018 04:07:52 AM

Dear PAIR Customer:

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

The following USPTO patent application(s) associated with your Customer Number, 27543 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
15432242	INTV.SUM.APP	12/18/2018	AOIC006

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. 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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/432,242	Filing Date 02/14/2017	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $80 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $420 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 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))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

AMENDMENT	12/13/2018	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 7	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/ANNETTE V SMITH/
*** 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.

AOI_NDCal 4-24cv09041_ 00002194

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.
15/432,242	02/14/2017	Jian-Hong LUO	AOIC006	2079

27543 7590 01/28/2019

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

EXAMINER	
PETKOVSEK, DANIEL	

ART UNIT	PAPER NUMBER
2874	

NOTIFICATION DATE	DELIVERY MODE
01/28/2019	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):

docketing@gtpp.com
kcarroll@gtpp.com
kinsella@ao-inc.com

PTOL-90A (Rev. 04/07)

AOI_NDCal 4-24cv09041_ 00002195

Office Action Summary	Application No. 15/432,242	Applicant(s) LUO et al.	
	Examiner Daniel Petkovsek	Art Unit 2874	AIA Status Yes

-- 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 MONTHS 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 the request for reconsideration filed December 13, 2018.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ 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.

4)☐ 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*

5) ☑ Claim(s) 1-3 and 5-8 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-3 and 5-8 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, 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.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on April 24, 2017 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).

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).

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)).

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

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 12/13/18.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the request for reconsideration filed December 13, 2018. Claims 1-3 and 5-8 remain pending.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Information Disclosure Statement

2. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on December 13, 2018, have been considered and made of record (note attached copy of forms PTO-1449).

Claim Objections

3. The Examiner would first like to outline confusion in claiming in the carrier (8) in Figure 1 and "a top surface" thereof. The Examiner notes that although the claims as *originally* filed (February 14, 2017) for "a top surface" was reasonable, as the claims have been amended, further clarification of this feature must be added. For example, although there appears to be a broad "a top surface" of carrier 8, this "top surface" is in fact ***three*** distinct surfaces, to include (1) "a top surface of an end of the carrier (e.g. *left* side Fig. 1, where Chip 2 and O/E 3 are located), (2) "a top surface in the middle of the carrier (central, middle where AWG located), and (3) "a top surface of the another end

AOI_NDCal 4-24cv09041_ 00002197

of the carrier (e.g. *right* side Fig. 1, where Lens 5 located). These (sub)surfaces do not lie in the **same plane**, as the two opposite end surface lie at a lower level.

4. Claims 1-3 and 5-8 are objected to because of the following informalities: regarding pending independent claims 1 and 8, there are numerous issues relating to the "a top surface of the carrier" and "optical signal(s)". First, regarding claims 1 and 8, the "a light receiving chip" and the "a plurality of optoelectronic diodes" structure should be distinctly claimed as "disposed on a/the top surface **of an end** of the carrier" for clarity; the "an arrayed waveguide grating" structure should be distinctly claimed as "disposed on a/the top surface **of the middle** of the carrier" for clarity. Note the reasoning above in section (3) for "a/the top surface of the carrier" needing more specificity because this "top surface" includes *three* distinct surface sections/levels. Next, regarding the language "wherein the optoelectronic diodes and the light receiving chip are disposed directly on the same surface", this language should read "wherein the optoelectronic diodes and the light receiving chip are disposed directly on the same top surface at the end of the carrier" for clear claiming. In the final paragraph of claims 1 and 8, the phrase "the optical signals are divided" should read "the optical signal is divided" because this feature was ***first*** identified as "an optical signal." Also in the final paragraph, the first recitation of "*the* top surface defined by an output end of the arrayed waveguide grating" should read "a top surface defined by an output end of the arrayed waveguide grating." Finally, later recitation of "optical signals reflected by *the* top surface to be reflected" should read "optical signals reflected by the top surface defined by an output end of the arrayed waveguide grating to be reflected" is needed for clarity.

Appropriate correction is required, and careful review of all pending claims 1-3 and 5-8 is needed. Similar issues with "a/the top surface of the carrier" are included in *both* claims 1 and 8.

Claim Rejections - 35 USC § 112

5. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

> 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.

6. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to *particularly* **point out** and *distinctly* **claim** the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. Claims 1 and 8 are in independent claim form, while claims 2, 3, and 5-7 depend from independent claim 1.

7. Claims 1 and 8 are rejected under 35 U.S.C. 112(b) for lacking proper antecedent basis throughout the claims. Regarding claims 1 and 8, the "a/the top surface of the carrier" must be corrected and clarified in each instance. For example, the Figures of the current application show three distinct "top surfaces" of the carrier, as a sub-set of the overall "top surface." As claims 1 and 8 have been amended in prosecution, additional descriptive language is needed for (1) "disposed on a/the top surface **of an end** of the carrier"; (2) "disposed on a/the top surface **of the middle** of the carrier"; and (3) "disposed on a/the top surface **of another end** of the carrier" for

clear claiming under 35 U.S.C. 112(b). There is insufficient antecedent basis for those particular limitations in the claim. Applicant should amend claims 1 and 8 to clearly define *which* surface of the top surface is being recited.

8. Further regarding claims 1 and 8, the limitation "the optical signals are divided" should read "the optical signal is divided" because this feature was ***first*** identified as "an optical signal." Conversely, the phrase "receiving an optical signal" could be amended to "receiving optical signal***s***" in its first recitation. For these reasons, claims 1 and 8 lack proper antecedent basis.

9. Further regarding claim 2, this claim is rejected under 35 U.S.C. 112(b) for conflicting with amended independent claim 1. In particular, the phrase "the plurality of optoelectronic diodes are *disposed on* the same circuit board" ***conflict*** with claim 1's language of the "optoelectronic diodes" being "***directly*** disposed on the same surface." The OE diodes cannot be disposed be disposed directly on the same surface as the "light receiving chip" ***if*** there is an intervening "circuit board" as in dependent claim 2.

Response to Arguments

10. Applicant's arguments, see request for reconsideration, filed December 13, 2018, with respect to the rejection under 35 U.S.C. 103 and using primary obvious design choice for motivation to reject claims 1 and 8, have been fully considered and are *persuasive*. The rejections mailed September 13, 2018 under 35 U.S.C. 103 have been withdrawn.

11. Applicant must address the claim objections to claims 1 and 8, as well as the claim rejections to claims 1, 2, and 8 under 35 U.S.C. 112(b) above. Because this is a new ground of rejection not previously presented, this rejection is made *NON-FINAL*.

12. If Applicant makes the specific corrections to clearly identify the three distinct "top surface" portions the carrier element (reference #8 in Fig. 1), and clarify all claim language of claims 1 and 8, the closest prior art (to Shen et al. '451 and Gamache et al. '786) does not expressly teach or *reasonably* suggest such a **combined** configuration as shown in Applicant's Figure 1 and the claims. The Examiner is unable to make a prima facie case for obviousness of such combination, most particularly in which the "light receiving chip" (2) and the "optoelectronic diodes" (3) are disposed *directly* on the same surface of the end of the carrier (left end/side in Fig. 1 *same* surface).

Inventorship

13. 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

14. This action is made non-final, because new grounds of rejection are presented.

15. 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 7:30 - 6 PM.

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
January 22, 2019

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/432,242	LUO et al.
	Examiner	Art Unit
	Daniel Petkovsek	2874

CPC - Searched*		
Symbol	Date	Examiner
G02B 6/12019, 6/32, 6/4214, 6/4249	01/22/2019	DJP

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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
Refreshed pertinent EAST searches	01/22/2019	DJP
Analyzed request for reconsideration filed December 13, 2018	01/22/2019	DJP
Conducted further EAST searches	01/22/2019	DJP

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/432,242	LUO et al.
	Examiner	Art Unit
	Daniel Petkovsek	2874

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

CLAIMS

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

CLAIM		DATE								
Final	Original	08/18/2017	03/29/2018	09/07/2018	01/22/2019					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	-	-	-					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8		✓	✓	✓					

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S134	17001	G02B6/32.cpc. or G02B6/12019.cpc. or G02B6/4214.cpc. or G02B6/4249.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2019/01/22 10:50
S135	107	S134 and (("AWG" (array$3 near2 waveguid$3 near3 grating$4)) with (reflect$4 mirror$4) with (detect$4 diod$4 photo-detect$4 photodetect$4 photo-diod$4 photodiod$4 receiv$4))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2019/01/22 10:50
S136	120	coupl$4 same ("AWG" (array$2 near2 waveguid$3 near2 grating$4)) same (optic$4 near9 fiber$4) same connector$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2019/01/22 10:50
S133	2	(("9557500") or ("20170187462")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/22 10:27
S132	19	(US-20010055444-$ or US-20150029572-$ or US-20160149662-$ or US-20040022490-$ or US-20020181890-$ or US-20170168252-$ or US-20160349451-$ or US-20150311669-$ or US-20040161186-$ or US-20170336582-$ or US-20170307819-$ or US-20110142395-$).did. or (US-6945708-$ or US-9341786-$ or US-7162124-$ or US-9484482-$ or US-9057844-$).did. or (US-20170168252-$ or US-20160349451-$).did.	US-PGPUB; USPAT; DERWENT	OR	ON	2019/01/22 08:38

EAST Search History (Interference)

< This search history is empty>

1/ 22/ 2019 2:02:19 PM
C:\ Users\ dpetkovsek\ Documents\ EAST\ Workspaces\ 15432242.wsp

AOI_NDCal 4-24cv09041_ 00002205

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	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	9557500	B1	2017-01-31	LUO ET AL	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

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	20170187462	A1	2017-06-29	LUO ET AL	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

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							

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]

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

Receipt date: 12/13/2018

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

	1	

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

EXAMINER SIGNATURE

Examiner Signature	/DANIEL PETKOVSEK/	Date Considered	01/22/2019

*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. /D.P/

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

Jan 28, 2019 03:35:55 AM

Dear PAIR Customer:

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

The following USPTO patent application(s) associated with your Customer Number, 27543 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
15432242	CTNF	01/28/2019	AOIC006
	1449	01/28/2019	AOIC006

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	15/432,242	Confirmation No. :	2079

Inventors	:	Jian-Hong Luo et al.
Filed	:	February 14, 2017
TC/A.U.	:	2874
Examiner	:	Petkovsek
Docket No.	:	AOIC006
Customer No.	:	27,543

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

AMENDMENT AND REPLY UNDER 37 CFR § 1.111

Sir:

In response to the Office Action dated January 28, 2019, please amend the application as follows and consider the included remarks. Applicant is filing this amendment within the three-month statutory period for reply on or before April 28, 2019. Thus, Applicant believes that no extension of time is required. In the event that an additional extension is required, Applicant herewith petitions the Director of the United States Patent and Trademark Office for the necessary extension and authorizes the Director to charge Deposit Account 50-1705.

AOI_NDCal 4-24cv09041_ 00002209

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	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	6305848	B1	2001-10-23	GREGORY	
	2	7329054	B1	2008-02-12	EPITAUX ET AL	
	3	9482819	B2	2016-11-01	LI ET AL	
	4	9553671	B1	2017-01-24	NAGARAJAN ET AL	
	5	10088639	B2	2018-10-02	MENTOVICH ET AL	
	6	9476763	B2	2016-10-25	KACHRU ET AL	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

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

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	20120301152	A1	2012-11-29	EDWARDS ET AL	
	2	20150316732	A1	2015-11-05	SCHAMUHN ET AL	
	3	20160131854	A1	2016-05-12	DE JONG	
	4	20170248763	A1	2017-08-31	KAWAMURA ET AL	
	5	20150256259	A1	2015-09-10	HUANG ET AL	
	6	20190018206	A1	2019-01-17	LUO ET AL	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	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							

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]

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	US Office Action mailed March 18, 2019, received in related Application No. 15/971,621, 17 pgs.
	2	US Office Action mailed April 16, 2019, received in related Application No. 16/142,466, 23 pgs.

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

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*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.

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

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	/Kenneth M. Thompson/	Date (YYYY-MM-DD)	2019-04-29
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.**

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.

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.
16/142,466	09/26/2018	Kai-Sheng LIN	PAT266-019US	4318

27543 7590 04/16/2019

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

EXAMINER	
LEPISTO, RYAN A	

ART UNIT	PAPER NUMBER
2883	

NOTIFICATION DATE	DELIVERY MODE
04/16/2019	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):

docketing@gtpp.com
kcarroll@gtpp.com
kinsella@ao-inc.com

Office Action Summary	Application No. 16/142,466	Applicant(s) LIN et al.	
	Examiner RYAN A LEPISTO	Art Unit 2883	AIA (FITF) Status Yes

-- 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 MONTHS 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 26 September 2018.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ 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.

4)☐ 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*

5) ☑ Claim(s) 1-19 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-4 and 6-19 is/are rejected.

8) ☑ Claim(s) 5 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, 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.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 26 September 2018 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).

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).

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)).

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

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

Claims 1, 3, 4, 8, 10 and 11 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by **Luo et al (US 2019/0018206 A1)**. Luo teaches an optical transceiver module (Figs. 1-11), the optical transceiver module comprising:

a PCBA substrate (1) having a first end (right in Fig. 1) that extends to a second end (left in Fig. 1), the substrate (1) having at least a first mounting surface (top in Fig. 1);

AOI_NDCal 4-24cv09041_ 00002217

an on-board receiver optical subassembly (ROSA) arrangement (1.1, 1.2, 2.2, 5.1) the on-board ROSA arrangement comprising:

an array of photodiodes (1.2) mounted to the first mounting surface of the substrate (1) (paragraph 0022);

an arrayed waveguide grating (AWG) (5.1) mounted to the first mounting surface of the substrate (1) (paragraph 0024), the AWG (5.1) having an optical output port (2.2.1) aligned and optically coupled to the array of photodiodes (1.2) (Fig. 10, paragraph 0023-0024); and

an amplification circuit (1.1) mounted to the first mounting surface of the substrate (1), the amplification circuit (1.1) electrically coupled to the array of photodiodes (1.2) (paragraph 0022);

wherein the AWG (5.1) includes an angled surface to reflect light towards the array of photodiodes (1.2) for detection purposes (paragraph 0024);

wherein the optical output port (2.2.1) extends at least partially over the array of photodiodes (1.2) (paragraph 0023, Figs. 9-10);

wherein the array of photodiodes (1.2) are mounted to the first mounting surface of the substrate (1) via a photodiode submount (see Fig. 10); and

wherein the PCBA (1) includes an electrical coupling end (left in Fig. 1) with terminals to electrically couple to a transmit connecting circuit and a receive connecting circuit (not shown, paragraph 0022).

AOI_NDCal 4-24cv09041_ 00002218

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12, 14, 17 and 19 are rejected under 35 U.S.C. 103 as being unpatentable over Luo in view of **Huang et al (US 2015/0256259 A1)**.

AOI_NDCal 4-24cv09041_ 00002219

Luo teaches the transceiver module previous discussed and also teaches a transmitter optical subassembly (TOSA) arrangement (1.3, 1.4, 2.1) mounted to the substrate (1) (paragraph 0022).

Luo does not teach expressly a housing defining a cavity for receiving the optical transceiver module and the module is disposed at least partially within the cavity of the housing.

Huang teaches an optical transceiver (Fig. 5) comprising a housing (10) defining a cavity (the area between the two casing pieces) for receiving an optical transceiver module (20, 40) and the module (20, 40) disposed at least partially within the cavity of the housing (10) 9see Fig. 5).

Luo and Huang are analogous art because they are from the same field of endeavor, optical transceivers.

At the time of the effective filing date of the claimed invention, it would have been obvious to a person of ordinary skill in the art to modify the transceiver of Luo to use it in the housing taught by Huang.

The motivation for doing so would have been to reduce environmental contamination to the transceiver by at least partially enclosing it in a casing.

Claims 2 and 6 are rejected under 35 U.S.C. 103 as being unpatentable over Luo as applied to claim 1 above, and further in view of **Shen et al (US 2016/0349451 A1)**.

Luo teaches the optical transceiver module previously discussed. Luo also shows the AWG (5.1) have some sort of base structure below the light path portion (see Fig. 10), but does

AOI_NDCal 4-24cv09041_ 00002220

not mention any details of this base portion. Luo further teaches a body (part of 5.1) that defines at least one light path (the AWG waveguides) for separating channel wavelengths and optically coupling the AWG to the array of photodiodes (1.2) (paragraph 0024).

Luo does not teach expressly the AWG includes a base portion that couples the AWG to the first mounting surface and the at least one light path not extending through the base portion or the first mounting surface provides a mechanical alignment feature to ensure the AWG is optically aligned with the array of photodiodes.

Shen teaches an AWG (200) that includes a base portion (100) that couples the AWG (200) a first mounting surface (top of 100) and a body (part of 200) that defines at least one light path (230) for separating channel wavelengths and optically coupling the AWG a photodiode (300), the at least one light path (230) not extending through the base portion (110) (Fig. 1) and the first mounting surface (210, Fig. 3) provides a mechanical alignment feature (21) to ensure the AWG (200) is optically aligned with the photodiode (paragraph 0043).

Luo and Shen are analogous art because they are from the same field of endeavor, AWGs coupled to substrates.

At the time of the effective filing date of the claimed invention, it would have been obvious to a person of ordinary skill in the art to modify the AWG of Luo to include the base and mechanical alignment feature as taught by Shen.

The motivation for doing so would have been to ensure the AWG is located on an appropriate position of the substrate so as to be able to transmit to the detectors (Shen, paragraph 0043).

AOI_NDCal 4-24cv09041_ 00002221

Claims 7 and 9 are rejected under 35 U.S.C. 103 as being unpatentable over Luo as applied to claims 1 and 8 above, and further in view of **Kachru et al (US 9,476,763 B2)**.

Luo teaches the optical transceiver module previously discussed.

Luo does not teach expressly the array of photodiodes are wire bonded to the amplification circuit, and the amplification circuit is wire bonded to the first mounting surface of the substrate or wherein the photodiode submount abuts the amplification circuit.

Kachru teaches an array of photodiodes (115) that are wire bonded (570) to an amplification circuit (120), and the amplification circuit (120) is wire bonded (585) to a first mounting surface (top) of a substrate (180) and wherein a photodiode submount (part of 115) is next to the amplification circuit (120) (see Fig. 5).

Luo and Kachru are analogous art because they are from the same field of endeavor, optical transceiver modules.

At the time of the effective filing date of the claimed invention, it would have been obvious to a person of ordinary skill in the art to modify the transceiver module of Luo to include the wire bonding of the PDs to the amp circuit and the circuit to the substrate as taught by Kachru.

The motivation for doing so would have been to ensure electrical communication is established between the components using the widely used technology of wire bonding.

Luo and Kachru discloses the claimed invention except for the submount abutting the amplification circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was effectively filed to rearranged two circuit components (like the submount and circuit) that are already directly next to each other to abut each other, since it has been

AOI_NDCal 4-24cv09041_ 00002222

held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. The motivation would have been to reduce the size/footprint of the components on the substrate to allow for more components.

Claims 13 and 15 are rejected under 35 U.S.C. 103 as being unpatentable over Luo and Huang as applied to claim 12 above, and further in view of Shen.

Luo and Huang teach the optical transceiver module previously discussed. Luo also shows the AWG (5.1) have some sort of base structure below the light path portion (see Fig. 10), but does not mention any details of this base portion. Luo further teaches a body (part of 5.1) that defines at least one light path (the AWG waveguides) for separating channel wavelengths and optically coupling the AWG to the array of photodiodes (1.2) (paragraph 0024).

Luo and Huang do not teach expressly the AWG includes a base portion that couples the AWG to the first mounting surface and the at least one light path not extending through the base portion or the first mounting surface provides a mechanical alignment feature to ensure the AWG is optically aligned with the array of photodiodes.

Shen teaches an AWG (200) that includes a base portion (100) that couples the AWG (200) a first mounting surface (top of 100) and a body (part of 200) that defines at least one light path (230) for separating channel wavelengths and optically coupling the AWG a photodiode (300), the at least one light path (230) not extending through the base portion (110) (Fig. 1) and the first mounting surface (210, Fig. 3) provides a mechanical alignment feature (21) to ensure the AWG (200) is optically aligned with the photodiode (paragraph 0043).

AOI_NDCal 4-24cv09041_ 00002223

Luo, Huang and Shen are analogous art because they are from the same field of endeavor, AWGs coupled to substrates.

At the time of the effective filing date of the claimed invention, it would have been obvious to a person of ordinary skill in the art to modify the AWG of Luo and Huang to include the base and mechanical alignment feature as taught by Shen.

The motivation for doing so would have been to ensure the AWG is located on an appropriate position of the substrate so as to be able to transmit to the detectors (Shen, paragraph 0043).

Claims 16 and 18 are rejected under 35 U.S.C. 103 as being unpatentable over Luo and Huang as applied to claims 12 and 17 above, and further in view of Kachru.

Luo and Huang teach the optical transceiver module previously discussed.

Luo and Huang do not teach expressly the array of photodiodes are wire bonded to the amplification circuit, and the amplification circuit is wire bonded to the first mounting surface of the substrate or wherein the photodiode submount abuts the amplification circuit.

Kachru teaches an array of photodiodes (115) that are wire bonded (570) to an amplification circuit (120), and the amplification circuit (120) is wire bonded (585) to a first mounting surface (top) of a substrate (180) and wherein a photodiode submount (part of 115) is next to the amplification circuit (120) (see Fig. 5).

Luo, Huang and Kachru are analogous art because they are from the same field of endeavor, optical transceiver modules.

AOI_NDCal 4-24cv09041_ 00002224

At the time of the effective filing date of the claimed invention, it would have been obvious to a person of ordinary skill in the art to modify the transceiver module of Luo and Huang to include the wire bonding of the PDs to the amp circuit and the circuit to the substrate as taught by Kachru.

The motivation for doing so would have been to ensure electrical communication is established between the components using the widely used technology of wire bonding.

Luo, Huang and Kachru discloses the claimed invention except for the submount abutting the amplification circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was effectively filed to rearranged two circuit components (like the submount and circuit) that are already directly next to each other to abut each other, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. The motivation would have been to reduce the size/footprint of the components on the substrate to allow for more components.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

These claims would be allowable over the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the latter, either alone or in combination, does not disclose nor render obvious an optical

AOI_NDCal 4-24cv09041_ 00002225

transceiver wherein an optical output port extends at least partially over an array of photodiodes wherein a ROSA arrangement includes a first distance D1 measured between a first mounting surface and a surface defining a photosensitive region of the array of photodiodes, and a second distance D2 measured between the first mounting surface and a surface defining the optical output port of an AWG, the first distance D1 being about 1 micron greater than the second distance D2,

in combination with the rest of the claimed limitations.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN A LEPISTO whose telephone number is (571)272-1946. The examiner can normally be reached on 9AM-6PM EST M-F.

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, Thomas Hollweg can be reached on 571-270-1739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

AOI_NDCal 4-24cv09041_ 00002226

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.

/RYAN A LEPISTO/
Primary Examiner, Art Unit 2883

AOI_NDCal 4-24cv09041_ 00002227

Notice of References Cited	Application/Control No. 16/142,466	Applicant(s)/Patent Under Reexamination LIN et al.	
	Examiner RYAN A LEPISTO	Art Unit 2883	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-20190018206-A1	01-2019	LUO; Jian-Hong	G02B6/425	1/1
*	B	US-20150256259-A1	09-2015	Huang; Yun-Cheng	G01J1/0271	398/88
*	C	US-20160349451-A1	12-2016	SHEN; Po-Kuan	G02B6/4214	1/1
*	D	US-9476763-B2	10-2016	Kachru; Ravinder	G01J1/0425	1/1
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC 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.

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	16142466
Filing Date	2018-09-26
First Named Inventor	LIN
Art Unit	
Examiner Name	
Attorney Docket Number	PAT266-019US

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	
	7	9341786	B1	2016-05-17	GAMACHE	
	8	7162124	B1	2007-01-09	GUNN, III ET AL	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.A.L/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	16142466
Filing Date	2018-09-26
First Named Inventor	LIN
Art Unit	
Examiner Name	
Attorney Docket Number	PAT266-019US

U.S.PATENT APPLICATION PUBLICATIONS Remove

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	
	6	20150249501	A1	2015-09-03	NAGARAJAN	
	7	20170307819	A1	2017-10-26	HO ET AL	
	8	20170336582	A1	2017-11-23	LUO ET AL	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

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]

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.A.L/

EFS Web 2.1.17

AOI_NDCal 4-24cv09041_ 00002230

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16142466
	Filing Date	2018-09-26
	First Named Inventor	LIN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	PAT266-019US

	1							

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.	
	2	US Office Action mailed August 21, 2017, received in US Application Serial No. 15/137,823, 13 pgs.	
	3	US Office Action mailed August 29, 2017, received in US Application Serial No. 15/432,242, 15 pgs.	
	4	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	/RYAN A LEPISTO/	Date Considered	03/20/2019

*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. /R.A.L/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Application Number	16142466
	Filing Date	2018-09-26
	First Named Inventor	LIN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	PAT266-019US

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	/Kenneth M. Thompson/	Date (YYYY-MM-DD)	2018-12-05
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.**

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.A.L/

AOI_NDCal 4-24cv09041_ 00002232

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. /R.A.L/

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	16142466
Filing Date	2018-09-26
First Named Inventor	LIN
Art Unit	
Examiner Name	
Attorney Docket Number	PAT266-019US

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	9557500	B1	2017-01-31	LUO ET AL	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

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	20170187462	A1	2017-06-29	LUO ET AL	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

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							

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]

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.A.L/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	16142466
	Filing Date	2018-09-26
	First Named Inventor	LIN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	PAT266-019US

	1	

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

EXAMINER SIGNATURE

Examiner Signature	/RYAN A LEPISTO/	Date Considered	03/20/2019

*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. /R.A.L/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Application Number	16142466
	Filing Date	2018-09-26
	First Named Inventor	LIN
	Art Unit	
	Examiner Name	
	Attorney Docket Number	PAT266-019US

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	/Kenneth M. Thompson/	Date (YYYY-MM-DD)	2018-12-13
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.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.A.L/

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. /R.A.L/

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.
15/971,621	05/04/2018	Jian-Hong LUO	AOIC008	8087

27543 7590 03/18/2019

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

EXAMINER	
PETKOVSEK, DANIEL	

ART UNIT	PAPER NUMBER
2874	

NOTIFICATION DATE	DELIVERY MODE
03/18/2019	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):

docketing@gtpp.com
kcarroll@gtpp.com
kinsella@ao-inc.com

PTOL-90A (Rev. 04/07)

AOI_NDCal 4-24cv09041_ 00002238