

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5049474

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
YI ZHANG	12/30/2014
SHUYU YANG	05/08/2014
MICHAEL J. HOCHBERG	06/19/2015
THOMAS BAEHR-JONES	02/18/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CORIAANT ADVANCED TECHNOLOGY, LLC
<b>Street Address:</b>	171 MADISON AVENUE
<b>Internal Address:</b>	SUITE 1100
<b>City:</b>	NEW YORK
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	10016
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15811937
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(312)977-4405
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	3129774400
<b>Email:</b>	smonreal@nixonpeabody.com
<b>Correspondent Name:</b>	NIXON PEABODY LLP
<b>Address Line 1:</b>	70 W. MADISON ST.
<b>Address Line 2:</b>	SUITE 3500
<b>Address Line 4:</b>	CHICAGO, ILLINOIS 60602
<b>ATTORNEY DOCKET NUMBER:</b>	074381-000012USP2
<b>NAME OF SUBMITTER:</b>	JUSTIN D. SWINDELLS
<b>SIGNATURE:</b>	/Justin D. Swindells/
<b>DATE SIGNED:</b>	07/13/2018
<b>Total Attachments: 11</b>	

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### ASSIGNMENT – MULTIPLE MATTERS

I, Yi Zhang, believe that I am an inventor of the subject matter disclosed in the application(s) for patent and/or invention disclosures (hereinafter "the invention(s)") identified herein as:

Reference	Title	Serial No.
COR-005PRO	HIGH-RESPONSIVITY FLOATING GERMANIUM PHOTODETECTOR	US 61/950,816
COR-011PRO	PHOTONIC CHIP STABILIZATION USING A BANDGAP TEMPERATURE SENSOR	US 62/075,763
COR-012CIP	SAGNAC LOOP MIRROR BASED LASER CAVITY ON SILICON PHOTONICS PLATFORM	
COR-012PCT	SAGNAC LOOP MIRROR BASED LASER CAVITY ON SILICON PHOTONICS PLATFORM	PCT/US14/66657
COR-012PRO	SAGNAC LOOP MIRROR BASED LASER CAVITY ON SILICON PHOTONICS PLATFORM	US 61/906,529
COR-012US	SAGNAC LOOP MIRROR BASED LASER CAVITY ON SILICON PHOTONICS PLATFORM	US 14/549,130
COR-013US	A COMPACT AND LOW LOSS Y-JUNCTION FOR SUBMICRON SILICON WAVEGUIDE	US 14/093,263
COR-015	HIGH LINEARITY PHOTODETECTOR WITH WAVELENGTH INSENSITIVE RESPONSIVITY	
COR-016	LATERAL GE/SI AVALANCHE PHOTODETECTOR	
COR-017	ULTRA-COMPACT WAVEGUIDE TAPER	
COR-018	ZERO-BIAS GE-ON-SI PHOTODETECTOR FOR LOW OPTICAL POWER MONITORING	

For valuable consideration given to the undersigned, the receipt and sufficiency of which is hereby acknowledged, the undersigned agrees to assign, and hereby does assign, transfer and set over to **Coriant Advanced Technology, LLC**, having a place of business at 116 W 23rd Street, Suite 500, New York NY 10011, (hereinafter "Assignee") his or her entire right, title and interest in the invention(s) identified herein in the United States, its territories, dependencies and possessions, and his or her entire right, title and interest in the invention(s) as regards all other national jurisdictions and international entities that have the power to grant patents, wherever situated, including without limitation all applications for patent which include some or all of the

disclosure of, and/or claim priority to and/or the benefit of the subject matter disclosed in the invention(s) identified herein, including any provisional application, utility application, and/or design application, as well as any continuation application, divisional application, continuation-in-part application, reissue application, reexamination application, patent interference proceeding, foreign national application and/or any application filed or to be filed under a patent treaty such as the International Convention for Protection of Industrial Property and/or the Patent Cooperation Treaty, and any Letters Patent which may be granted therefor in any jurisdiction.

In addition to the above assignment, the undersigned agrees to execute all papers necessary in connection with the invention(s), any patent application and any continuing applications, divisional applications, or continuations-in-part thereof, and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient to further memorialize the assignment herein of all right, title and interest.

The undersigned agrees to execute all papers necessary in connection with any interference or derivation proceeding which may be declared concerning any application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference or derivation proceeding.

The undersigned agrees to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

The undersigned agrees to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent and/or valid patents in other jurisdictions to the Assignee.

The undersigned hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from any application or any divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he or she has full right to convey the entire interest herein assigned, and that he or she has not executed and will not execute, any agreement in conflict herewith.

As to the invention(s) identified herein, to the extent that the undersigned has the power to do so, the undersigned hereby revokes all prior Powers of Attorney and grants a new Power of Attorney to each of:

Joseph B. Milstein, Reg. No. 42897,  
Kenneth J. Rudofski, Reg. No. 35997, and  
Jae-Hu Kim, Reg. No. 59648,

and hereby grants them the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or with the rules of any other national or international Patent Office for recordation of this document or a true copy thereof.

The undersigned hereby states that:

I hereby irrevocably grant the Assignee the right to file in the future one or more patent applications based on the identified invention(s) in which I am a named inventor.

Any patent application based on the identified invention(s) was made or authorized to be made by me.

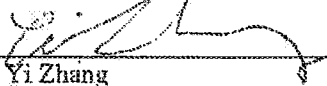
I believe that I am the original inventor or an original joint inventor of a claimed invention in any such patent application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In witness whereof, this instrument has been executed by the undersigned on the date opposite the name of the undersigned.


Please sign in the presence of either a Notary Public or two witnesses.

Date: 12/30/2014

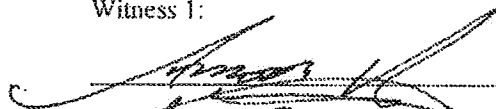
Signature:  (SEAL)  
Yi Zhang

State of ~~New York~~ Nantux )  
County of ~~New York~~ Hudson ) ss.:

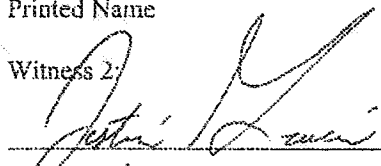
On this 30<sup>th</sup> day of December, 2014, before me personally came Yi Zhang to me known and known to me to be the person described in and who executed the within instrument and he/she acknowledged to me that he/she executed the same.

  
Notary Public

Witness 1:

  
Aron Dass  
Printed Name

Witness 2:

  
Justin Gracia  
Printed Name

**PROPRIETARY INFORMATION  
AND INVENTIONS AGREEMENT**

As a material part of the consideration for my employment by Coriant Advanced Technology LLC (the "Company"), I hereby agree to the terms set forth below:

1. I recognize that the Company and its Affiliates are engaged in continuous programs of research, development, production, sales and marketing respecting its business, present and future, including fields generally related to its business, and that each of the Company and its Affiliates possesses and will continue to possess information that has been created, discovered, developed or otherwise become known to the Company and/or one or more Affiliates, and/or in which property rights have been assigned or otherwise conveyed to the Company and/or one or more Affiliates, which information has commercial value in the business in which the Company and/or one or more Affiliates is engaged because the information is not available to the general public or otherwise provides commercial value. All of the aforementioned information is hereinafter called "Proprietary Information." Proprietary Information further includes, without limitation, anything (including but not limited to any invention, as defined below) that I may make or conceive or reduce to practice or learn, either alone or jointly with others during the period of my employment, that (a) at the time of such conception or reduction to practice, is capable of use in connection with the business of the Company and/or one or more Affiliates, or otherwise relates to the business of Company and/or one or more Affiliates or any actual or demonstrably anticipated research and development of the Company and/or one or more Affiliates, or (b) is made or conceived or reduced to practice or learned (i) with the use of the time, equipment, supplies, facilities or trade secret information of the Company and/or one or more Affiliates, or (ii) as a result of work performed by me for the Company and/or one or more Affiliates. By way of illustration, but not limitation, Proprietary Information includes trade secrets and other confidential information, formulas, data and know-how, product designs and specifications, computer programs and other software and firmware, other product information, improvements, ideas, concepts, discoveries, inventions, techniques, development plans, marketing plans, strategies, forecasts, copyrightable material, trademarks, employment and other corporate policies, customer lists, corporate records and processes, resumes, and other personnel information. Proprietary Information may include by way of further illustration, without limitation, proprietary information of vendors, partners, clients, customers or other third parties, entrusted by such parties to Company and/or one or more Affiliates.
2. I understand that my employment creates a relationship of confidence and trust between me and the Company with respect to any information:
  - (a) applicable to the business of the Company and/or one or more Affiliates; or
  - (b) applicable to the business of any vendor, partner, client or customer of the Company and/or one or more Affiliates, or other third party with whom the Company and/or one or more Affiliates may engage, which may be made known to me by the Company, an Affiliate, or by any such vendor, partner, client, customer or other third party, or otherwise learned by me during the period of my employment.

3. In consideration of my employment by the Company and the compensation received by me from the Company from time to time, I hereby agree as follows:

- (a) All Proprietary Information shall be the sole property of the Company (and/or, as applicable, one or more Affiliates) and its successors, assigns and nominees, and the Company (and/or, as applicable, one or more Affiliates) and successors, assigns and nominees shall be the sole owner of all patents, copyrights and other rights in connection therewith. I hereby assign to the Company, its successors, assigns and nominees, any rights that I may have or acquire in such Proprietary Information, regardless of whether I hold such rights alone or jointly with others. At all times, both during my employment by the Company and after its termination, I will not use or disclose, nor assist or authorize anyone else in using or disclosing, any Proprietary Information without the written consent of the Company, except as may be necessary in the ordinary course of performing my duties to the Company. I also agree to use my best efforts to otherwise safeguard all Proprietary Information so that it is not made available to unauthorized persons or entities.
- (b) All documents, records, apparatus, equipment and other physical property, whether or not pertaining to Proprietary Information, furnished to me by the Company, or an Affiliate, or produced by myself or others in connection with my employment, shall be and remain the sole property of the Company (and/or, as applicable, one or more Affiliates) and shall be returned to it immediately as and when requested by the Company. Even if the Company does not so request, I shall return and deliver to the Company, and not otherwise dispose or make use of, all such property upon termination of my employment by me or by the Company for any reason and I will not take with me any such property or any reproduction of such property upon such termination.
- (c) During the term of my employment, and for one (1) year following my termination, for whatever reason, I will not encourage or solicit any employee of the Company or an Affiliate to leave such employment for any reason or to devote less than all of any such employee's efforts to the affairs of the Company and its Affiliates, provided that the foregoing shall not affect any responsibility I may have as an employee of the Company with respect to the bona fide hiring and firing of Company personnel.
- (d) I will promptly reduce to writing and disclose to the Company, or any persons designated by it, all improvements, discoveries, concepts, inventions, formulas, ideas, processes, techniques, know-how and data, whether or not patentable, made or conceived or reduced to practice or learned by me, either alone or jointly with others, during the term of my employment (all said improvements, discoveries, concepts, inventions, formulas, ideas, processes, techniques, know-how, and data shall be hereinafter collectively called "Inventions").
- (e) Relative to each of all such Inventions, I will, both during my employment with Company and thereafter, assist the Company or its nominee in every proper way (without charge to the Company or nominee, but at the Company's or nominee's expense) as the Company or its nominee may desire to pursue, from time to time enforce, and to further record the vesting of title in Company

or its nominee, and its successors, assigns and nominees, any patent, copyright, and/or other right or registration in any and all countries as the Company or its nominee may desire, and to that end I will without limitation execute, acknowledge and deliver all applications for patent and/or other documents as the Company or its nominee may request. To the extent that the Company or its nominee is unable for any reason whatsoever to secure my signature to any lawful and necessary document required to so pursue, enforce and/or to further record vesting of title as described above, I hereby irrevocably designate and appoint the Company and any nominee of Company, and their respective duly authorized officers and agents, as my agents and attorneys-in-fact to act on my behalf and instead of me, to execute and file any such application and/or to do all other lawfully permitted acts to further the pursuit, enforcement and/or recordation of title of patents, copyrights and/or other rights or registrations relative to such inventions with the same legal force and effect as if executed by me.

- (f) As a matter of record I attach hereto a list of Prior Inventions, which for purposes of this Agreement shall mean all inventions that may be relevant to the subject matter of my employment by the Company or the businesses of the Company and its Affiliates, which have been made or conceived or first reduced to practice by me, either alone or jointly with others, prior to my employment with the Company (but not including any of my inventions owned and controlled by Company or an Affiliate by way of acquisition or otherwise). I covenant that any such attached list is complete. If no such list is attached to this Agreement, I represent that I have no such Prior Inventions. I agree that without the prior written consent of Company as memorialized in a written amendment to this Agreement that both cites this Section 3(f) and is executed by an authorized representative of Company, I shall not in any way introduce into the business of Company or otherwise facilitate the use of in the business of Company, either (i) any such Prior Inventions of mine, or (ii) any other invention of which I am aware unless the invention is owned and controlled by the Company at the time of such introduction and use.
- (g) I represent that my performance of all the terms of this Agreement will not breach any agreement to keep in confidence proprietary information acquired by me in confidence or in trust prior to my employment by the Company or otherwise. I have not entered into, and I agree I will not enter into, any agreement, either written or oral, in conflict herewith.
- (h) I represent that execution of this Agreement, my employment with the Company and my performance of my proposed duties to the Company in the development of its business and/or the business of any Affiliate will not violate any obligations I may have to any former employer or other third party.
- (i) For the avoidance of doubt, and notwithstanding anything to the contrary herein, this Agreement does not require assignment of any rights to any invention for which no equipment, supplies, facility, or trade secret information of the Company or any Affiliate was used and which was developed entirely on my own time, unless (a) the invention relates (i) to the business of the Company and/or any Affiliate, or (ii) to the actual or demonstrably anticipated research or development of the Company and/or any Affiliate, or (b) the invention results from any work performed by me for the Company and/or any Affiliate. If my employment is governed by the laws of the State of California,



the relation of the invention expressed above in element (a) of this paragraph is more specifically a relation at the time of conception or reduction to practice of the invention. This Agreement also does not require assignment of an invention which an employee otherwise cannot be obligated to assign pursuant to any code or statute that may be applicable to my employment, including without limitation the following codes/statutes if and to the extent applicable: Illinois 765 ILCS 1060/1-3; Cal. Lab. Code §2870; Delaware Code title 19 Section 805; Kansas Statutes Section 44-130; and North Carolina General Statutes Article 10A, Chapter 66, Commerce and Business, Section 66-057.1.

(j) During my employment with the Company, I will not engage in, or be employed by, any business that is competitive to the business of the Company and/or any Affiliate.

4. For purposes of this Agreement, "Affiliate" or "Affiliates" shall include any one or more of Optical Holding Parent LLC, and any person or entity directly or indirectly controlled by Optical Holding Parent LLC that, in turn, directly or indirectly controls, is controlled by, or is under common control with, the Company.
5. Nothing in this Agreement shall be construed to alter the "at will" employment or consulting arrangement that exists between the Company and me. I understand that I am free to terminate my relationship with the Company at any time and for any reason, and that the Company is likewise free to terminate my employment at any time and for any reason.
6. If one or more of the provisions of this Agreement or portions thereof are held to be unenforceable under applicable law, such provision(s) or portions thereof shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision(s) or portions thereof were so excluded and shall be enforceable in accordance with its terms.
7. This Agreement shall be effective as of the first day of my employment by the Company or service for the Company.
8. This Agreement shall be binding upon me, my heirs, executors, assigns, and administrators and shall inure to the benefit of the Company, its successors, assigns and nominees.

Dated: 05/08, 2011

SHUYU YANG  
Employee (Print Name)

[Signature]  
Employee (Signature)

## JOINT ASSIGNMENT

WE, **Yi Zhang, Shuyu Yang, Michael J. Hochberg, and Thomas Baehr-Jones**, believe that we are the inventors of the subject matter disclosed in the application(s) for patent (hereinafter "the invention or inventions") identified herein as

### **Sagnac Loop Mirror Based Laser Cavity on Silicon Photonics Platform**

and further identified by Attorney Docket Number(s) **COR-012US and COR-012PCT** which application(s) for patent was/were filed on **November 20, 2014** and has/have been assigned

☒ U.S. Serial No. 14/549,130 and/or

☒ International Application No. PCT/US14/66657

by the United States Patent and Trademark Office.

In consideration of an employment agreement and other good and valuable consideration given to each of the undersigned, the receipt and sufficiency of which is hereby acknowledged, each of the undersigned agrees to assign, and hereby does assign, transfer and set over to **Coriant Advanced Technology, LLC**, a limited liability company organized under the laws of the State of Delaware, and having a principal place of business at 116 W. 23rd Street, Suite 500, New York, NY 10011 (hereinafter designated as the Assignee) his or her entire right, title and interest in the invention or inventions as represented by the application(s) for patent identified herein (the "application(s)") in the United States, its territories, dependencies and possessions, his or her entire right, title, and interest in the application, and his or her entire right, title and interest in the invention or inventions as regards all other national jurisdictions and international entities that have the power to grant patents, wherever situated, including without limitation all applications for patent which claim priority to and/or the benefit of the subject matter disclosed in the application(s) for patent identified herein, including any provisional application, utility application, design application, and/or plant application, as well as any continuation application, divisional application, continuation-in-part application, reissue application, reexamination application, patent interference proceeding, foreign national application and/or any application filed or to be filed under a patent treaty such as the International Convention for Protection of Industrial Property and/or the Patent Cooperation Treaty, and any Letters Patent which may be granted therefor in any jurisdiction.

In addition to the above assignment, each of the undersigned agrees to execute all papers necessary in connection with the application(s) and any continuing applications, divisional applications, or continuations-in-part thereof, and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

Each of the undersigned agrees to execute all papers necessary in connection with any interference or derivation proceeding which may be declared concerning the application(s) or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference or derivation proceeding.

Each of the undersigned agrees to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

Joint Assignment

US Serial No.: 14/549,130

International Application No. PCT/US14/66657

Date Filed: November 20, 2014

Attorney Docket Nos.: COR-012US, COR-012PCT

Each of the undersigned agrees to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent and or a valid patent issued by any other jurisdiction to the Assignee.

Each of the undersigned hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application(s) or any divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he or she has full right to convey the entire interest herein assigned, and that he or she has not executed and will not execute, any agreement in conflict herewith.

Each of the undersigned hereby grants to any duly empowered legal representative, including all patent practitioners associated with Customer Number 88993, the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or with the rules of any other national or international Patent Office for recordation of this document or a true copy thereof.

Each of the undersigned hereby states that:

Each of the above-identified application(s) was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application(s).

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

In witness whereof, this instrument has been executed by the undersigned on the date opposite the respective name of the undersigned.

This assignment should preferably be signed before: (a) a Notary Public if within the U.S.A. or (b) a U.S. Consul if outside the U.S.A. If neither is available, then it should be signed before at least two witnesses.

*[Signature pages are appended hereto]*

Joint Assignment

US Serial No.: 14/549,130

International Application No. PCT/US14/66657

Date Filed: November 20, 2014

Attorney Docket Nos.: COR-012US, COR-012PCT

**Yi Zhang has signed a separate document.**

Date: \_\_\_\_\_ Signature: \_\_\_\_\_ (SEAL)  
Shuyu Yang

STATE OF NEW YORK )  
COUNTY OF \_\_\_\_\_ )ss.:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ before me, the undersigned Notary Public, personally appeared Shuyu Yang (Name of document signer), proved to me through satisfactory evidence, which were ☐ driver's license ☐ passport ☐ \_\_\_\_\_ (other picture ID), to be the person whose name is signed on the preceding or attached document in my presence.

\_\_\_\_\_  
Official Signature and Seal of Notary

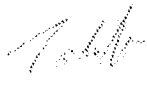
Date: June 19, 2015 Signature: \_\_\_\_\_ (SEAL)  
Michael J. Hochberg

STATE OF NEW YORK )  
COUNTY OF \_\_\_\_\_ )ss.:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ before me, the undersigned Notary Public, personally appeared Michael J. Hochberg (Name of document signer), proved to me through satisfactory evidence, which were ☐ driver's license ☐ passport ☐ \_\_\_\_\_ (other picture ID), to be the person whose name is signed on the preceding or attached document in my presence.

\_\_\_\_\_  
Official Signature and Seal of Notary

Joint Assignment  
US Serial No.: 14/549,130  
International Application No. PCT/US14/66657  
Date Filed: November 20, 2014  
Attorney Docket Nos.: COR-012US, COR-012PCT

Date: **Feb 18 2015** Signature:  (SEAL)  
**Thomas Baehr-Jones**

STATE OF CALIFORNIA )  
COUNTY OF \_\_\_\_\_ )ss.:

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ before me, the undersigned Notary Public,  
personally appeared **Thomas Baehr-Jones** (Name of document signer), proved to me through  
satisfactory evidence, which were ☐ driver's license ☐ passport ☐ \_\_\_\_\_ (other  
picture ID), to be the person whose name is signed on the preceding or attached document in my  
presence.

\_\_\_\_\_  
Official Signature and Seal of Notary