505807794 12/06/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5854623

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date	
RANDALL SMITH	10/07/2019	
PEYTON SHIEH	08/13/2019	
JOHN M. BEIERLE	11/22/2019	
JIE MAO	08/14/2019	

RECEIVING PARTY DATA

Name:	ILLUMINA, INC.
Street Address:	5200 ILLUMINA WAY
City:	SAN DIEGO, CA
State/Country:	CALIFORNIA
Postal Code:	92122

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	16411913
PCT Number:	US2019032287

CORRESPONDENCE DATA

Fax Number: (858)202-4545

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 8582024500

Email: dglisson@illumina.foundationip.com,

illuminadocket@illumina.foundationip.com

Correspondent Name: ILLUMINA, INC.

Address Line 1: 5200 ILLUMINA WAY

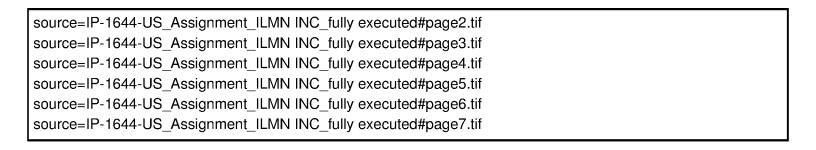
Address Line 4: SAN DIEGO, CA, CALIFORNIA 92121

ATTORNEY DOCKET NUMBER:	IP-1644-US
NAME OF SUBMITTER:	DAVE GLISSON
SIGNATURE:	/Dave Glisson/
DATE SIGNED:	12/06/2019

Total Attachments: 7

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PATENT 505807794 REEL: 051202 FRAME: 0463



Docket No.: IP-1644-US Page 1 of 5

Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF

SURFACEBOUND OLIGONUCLEOTIDES U.S. Application No.: 16/411,913

Filing Date: May 14, 2019

Docket No.: IP-1644-PCT

Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF

SURFACEBOUND OLIGONUCLEOTIDES
PCT Application No.: PCT/US2019/032287

Filing Date: May 14, 2019

Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao

WHEREAS, above-identified inventors (collectively "the Assignor/s") have made certain new and useful inventions, discoveries, and improvements (the "Inventions"), for which the Assignor/s filed the application/s listed above and now desire/s to convey all right, title, and interest in:

- the inventions,
- the application/s listed above, and any other applications for patent, design, utility model, certificate of invention, trademark, or trade dress, in any country or under any international or regional authority (e.g. WIPO/PCT, EPO, ARIPO, EAPO, OAPI), to the extent some or all of its subject matter is disclosed and entitled to the benefit of priority in the application/s listed above, including provisional, continuation, divisional, continuation-in-part, reissue, and reexamination applications (collectively "the Application/s"),
- the benefit of earlier filing date and right to claim priority to the Inventions and Application/s under applicable law and treaties, including the Paris Convention for the Protection of Industrial Property as revised and amended and 35 U.S.C. §§ 119, 120,
- any rights accrued by the publication of the Application/s, such as 35 U.S.C. § 154(d), Art.
 67(1) EPC,
- any Letters Patent or Certificates of Invention that may be issued or granted from the Application/s, including reissued patents, reexamination certificates, renewals, and any rights resulting from an extension or adjustment of patent term, and
- any rights arising from the Invention under laws and conventions protecting copyright, trademark, trade dress, or other industrial property,

(collectively, "the IP Rights"), and

WHEREAS, ILLUMINA, INC., a Delaware corporation having a place of business at 5200 Illumina Way, San Diego, California 92122 USA is desirous of acquiring the entire right, title, and interest for itself, its

Docket No.: IP-1644-US

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Filing Date: May 14, 2019

Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao

successors, and its assigns (collectively "the Assignee") in the IP Rights by an instrument in writing, 35 U.S.C. § 261;

NOW, THEREFORE, to all whom it may concern, be it known that, for good and valuable consideration, the receipt and sufficiency of which I/we hereby acknowledge and hereby waive the right to any additional compensation concerning the IP Rights:

I/we warrant and represent to the Assignee that I/we have the full right to convey my/our right, title, and interest in the IP Rights without encumbrance, and that I/we have not made any earlier assignment, license, grant, or mortgage to another, or made any agreement with another, that would affect my/our right, title, and interest in the IP Rights;

By this Assignment and by virtue of any earlier agreements to assign, I/we hereby assign, transfer, convey, and sell my/our entire right, title, and interest in the IP Rights to the Assignee, including any claims or causes of action for damages or other remedies arising out of any earlier violation of the IP Rights, for and to inure to the Assignee's full benefit of the IP Rights as fully as they would have been held by me/us if this Assignment had not been made;

I/we authorize the Assignee and its legal representatives to:

- (a) insert into this Assignment any supplemental information to make the identification more complete for any of the Application/s or Letters Patent already listed above,
- (b) prosecute the Application/s, file new applications for the Invention/s, and do all acts permitted by law to protect and enforce the IP Rights,
- (c) request that Letters Patent and Certificates of Invention be issued and granted to and in the name of the Assignee by the issuing or granting authority, such as the U.S. Commissioner for Patents, 37 C.F.R. § 3.81; and

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Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF

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Filing Date: May 14, 2019

Docket No.: IP-1644-PCT

Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF

SURFACEBOUND OLIGONUCLEOTIDES
PCT Application No.: PCT/US2019/032287

Filing Date: May 14, 2019

Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao

I/we agree with the Assignee that I/we and my/our legal representatives, heirs, and executors will perform all acts deemed necessary or desirable by the Assignee to permit and assist it to secure the entire right, title, and interest in the IP Rights so that the Assignee may benefit from this Assignment, including:

- (a) communicating to the Assignee all facts known to me/us that relate to the history and extent of my individual contribution to the IP Rights, including the circumstances of the conception of the invention and its development and reduction to practice, and furnishing supporting documents or items in my control,
- (b) assisting in the preparation of the Application/s and their prosecution by the Assignee, 37 C.F.R. § 3.71, and in the enforcement of the IP Rights, including making, executing, and delivering to the Assignee any other necessary documents, such as further application papers, declarations, affidavits, disclaimers, petitions, or assignments, and
- assisting and cooperating in administrative and legal proceedings, including giving written and oral testimony,

so that these will be performed without further consideration, except for reasonable actual expenses to be reimbursed by the Assignee.

I/we further agree with the Assignee that I/we will not perform any future act, execute any subsequent document, or make any subsequent agreement with another person or party that conflicts with this Assignment, that purports to transfer any right, title, or interest in the IP Rights that are the subject of this Assignment, unless agreed to in writing by the Assignee or that prevents the Assignee from receiving the full benefit of the bargain under this Assignment.

If any provision of this Assignment is held invalid or unenforceable, that provision shall be enforced to the maximum extent permissible in order to put into effect the intent of the Assignor/s and the Assignee, and the remainder of this Assignment shall not be affected, but continue in full force and effect.

ASSIGNMENT FROM INVENTORS		
Docket No.: IP-1644-US Fitle: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF SURFACEBOUND OLIGONUCLEOTIDES J.S. Application No.: 16/411,913 Filing Date: May 14, 2019	age 4 of 5	
Docket No.: IP-1644-PCT Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF SURFACEBOUND OLIGONUCLEOTIDES PCT Application No.: PCT/US2019/032287 Filing Date: May 14, 2019 Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao		
This document shall be executable by each Assignor in parts, and the Assignment will be effect ecordable for each Assignor as of the date of that Assignor's signature.	ive and	
Legal Name of Inventor: Randall Smith IN TESTIMONY WHEREOF, I hereunto set my hand and seal this <u></u> day of <u>이번 하다</u>	, 20 <u>13</u> .	
Signature:	and the second	
Legal Name of Inventor: Peyton Shieh IN TESTIMONY WHEREOF, I hereunto set my hand and seal thisday of	, 20	
Signature:		
Legal Name of Inventor: John M. Beierle IN TESTIMONY WHEREOF, I hereunto set my hand and seal this day of	, 20	

PATENT REEL: 051202 FRAME: 0468

Signature:

Docket No.: IP-1644-US Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF SURFACEBOUND OLIGONUCLEOTIDES U.S. Application No.: 16/411,913 Filing Date: May 14, 2019	Page 4 of 5
Docket No.: IP-1644-PCT Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF SURFACEBOUND OLIGONUCLEOTIDES PCT Application No.: PCT/US2019/032287 Filing Date: May 14, 2019 Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao	
This document shall be executable by each Assignor in parts, and the Assignment will be effere recordable for each Assignor as of the date of that Assignor's signature.	ective and
Legal Name of Inventor: Randall Smith IN TESTIMONY WHEREOF, I hereunto set my hand and seal this day of	, 20,
Signature:	
Legal Name of Inventor: Peyton Shieh IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 13 day of August Signature:	_20/9
Legal Name of Inventor: John M. Beierle IN TESTIMONY WHEREOF, I hereunto set my hand and seal this day of	20
Signature:	····

Docket No.: IP-1644-US

Page **4** of **5** Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF SURFACEBOUND OLIGONUCLEOTIDES U.S. Application No.: 16/411,913 Filing Date: May 14, 2019 Docket No.: IP-1644-PCT Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF SURFACEBOUND OLIGONUCLEOTIDES PCT Application No.: PCT/US2019/032287 Filing Date: May 14, 2019 Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao This document shall be executable by each Assignor in parts, and the Assignment will be effective and recordable for each Assignor as of the date of that Assignor's signature. Legal Name of Inventor: Randall Smith IN TESTIMONY WHEREOF, I hereunto set my hand and seal this ____ day of ______, 20_____. Signature: Legal Name of Inventor: **Peyton Shieh** IN TESTIMONY WHEREOF, I hereunto set my hand and seal this ____ day of ______, 20_____. Signature: Legal Name of Inventor: John M. Beierle IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 22 day of November , 20 19.

Docket No.: IP-1644-US Page 5 of 5

Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF

SURFACEBOUND OLIGONUCLEOTIDES U.S. Application No.: 16/411,913 Filing Date: May 14, 2019

Docket No.: IP-1644-PCT

Title: COMPOSITIONS AND METHODS FOR CHEMICAL CLEAVAGE AND DEPROTECTION OF

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Filing Date: May 14, 2019

Inventor(s): Randall Smith, Peyton Shieh, John M. Beierle, Jie Mao

Legal Name of Inventor: Jie Mao

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this day of August

RECEIVED AND HEREBY ACCEPTED BY ILLUMINA, INC., a Corporation

Date: 120. 3.204

Name: Roland Schwillinski

Title: Vice President, Global IP and Litigation

PATENT REEL: 051202 FRAME: 0471

RECORDED: 12/06/2019