504930244 05/24/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4976990

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
GREGORY R. STEINBRECHER	05/18/2018
DIRK ROBERT ENGLUND	05/16/2018

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15982035

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using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Address Line 4: WASHINGTON, D.C. 20004

ATTORNEY DOCKET NUMBER:	MITX-9503/01US
NAME OF SUBMITTER:	YUSHAN LUO
SIGNATURE:	/Yushan Luo/
DATE SIGNED:	05/24/2018

Total Attachments: 6

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ASSIGNMENT

Gregory R. STEINBRECHER, residing at 417 Broadway, Apt. B, Cambridge, MA 02138; and Dirk Robert ENGLUND, residing at 116 Pleasant Street #3, Brookline, MA 02446 (each referred to as "Assignor") have made an invention(s) (the "Invention(s)") set forth in an application for patent entitled APPARATUS, SYSTEMS, AND METHODS FOR NONBLOCKING OPTICAL SWITCHING, and which is a:

(1)	provisional application
	(a) to be filed herewith; or
	(b) bearing Application No., and filed on;
(2)	x non-provisional application
	(a)to be filed herewith; or
	(b) x bearing Application No. 15/982,035, and filed on May 17, 2018 and/or
(3)	PCT application (a) bearing Application No., and filed on.
	and/or
(4)	attached hereto.

WHEREAS, Massachusetts Institute of Technology, a University having its principal place of business at 77 Massachusetts Ave., Cambridge, MA 02139, its successors, legal representatives and assigns, (the "Assignee"), is desirous of acquiring the entire right, title, and interest in: the Invention(s); the application(s) for patent identified above; the right to file applications for patent of the United States or other countries on the Invention(s); any application(s) for patent of the United States or other countries claiming priority to, and/or the benefit of, these applications; any provisional or other right to recover any and all past, present, and future damages, including royalties, for any and all past, present, and future infringements of these application(s); and any and all patent(s) of the United States or other countries that may be granted therefor or thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, and to the extent that the Assignor has not done so already via a prior agreement with the Assignee or a predecessor in interest of the Assignee, or if the Assignor has already done so via a prior agreement with the Assignee or a predecessor in interest of the Assignee then in confirmation of any obligation to do so in said prior agreement, the Assignor has sold, assigned, transferred, and set over, and by these presents

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PATENT REEL: 045896 FRAME: 0257 does sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns, the Assignor's entire right, title, and interest in:

- (a) the Invention(s);
- (b) the application(s) for patent identified above;
- (c) the right to file applications for patent of the United States or other countries on the Invention(s), including all rights under the Hague Convention, the Paris Convention for the Protection of Industrial Property, and under the Patent Cooperation Treaty, and all rights of claiming priority in any country of the world;
- (d) any application(s) for patent of the United States or other countries claiming the Invention(s);
- (e) any application(s) for patent of the United States or other countries claiming priority to, and/or the benefit of, at least one of the application(s) for patent identified above or any application(s) for patent claiming the Invention(s), including any priority application(s), substitute application(s), division(s), continuation(s), and continuation(s)-in-part;
- (f) any provisional or other right to recover any and all past, present, and future damages, including royalties, for any and all past, present, and future infringements of any application for patent identified in the preceding paragraphs (b)-(e) and of any and all patent(s) granted based thereon in the United States and in all other countries; and
- (g) any patent(s) of the United States or other countries that may be granted for or on any application for patent identified in the preceding paragraphs (b)-(e), including any reissue(s), reexamination(s), revival(s), renewal(s) and extension(s) of said patent(s).

The above-granted rights, titles, and interests are to be held and enjoyed by the Assignee, for its own use and behalf and the use and behalf of its successors, legal representatives, and assigns, as fully and entirely as the same would have been held and enjoyed by the Assignor had this sale and assignment not been made.

The Assignor hereby represents to the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, or if applicable, at such time said prior agreement was executed, the Assignor is a lawful owner of an undivided interest in the entire right, title, and interest in and to the Invention(s), that the Invention(s) are unencumbered, except, if applicable, by obligation to assign in accordance with said prior agreement, and that the Assignor has good and full right and lawful authority to sell and convey the same in the manner set forth herein, and that Assignor will not make or enter into any assignment, sale, agreement or encumbrance which would conflict with these presents.

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The Assignor hereby covenants and agrees to and with the Assignee, its successors, legal representatives, and assigns, that the Assignor will sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done in connection with any and all proceedings for the procurement, maintenance, enforcement and defense of the Invention(s), said application(s), and said patent(s), including interference and derivation proceedings, and any post-grant proceedings (e.g., opposition proceedings, post-grant reviews, *Inter partes* reviews, supplemental examinations, etc.) without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns.

The Assignor hereby authorizes and requests the attorneys of COOLEY LLP to insert in the spaces provided above the filing date, the application number, and the attorney docket number of the application(s) identified above when known.

The Assignor hereby requests the Commissioner of Patents to issue said patents of the United States to the Assignee for the sole use and behalf of the Assignee, its successors, legal representatives, and assigns.

Attorney Docket No. Error! Unknown document property name.

Inventor Signature: Gregory R. STEINBRECHER	Date: 5/18/2018
Witness Signature: A Signature: Print Witness Name: Cyaco C. Ma	Date: <u> </u>
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Inventor Signature: Dirk Robert ENGLUND	Date:
Witness Signature:	Date:
Print Witness Name:	

Inventor Signature		
	Gregory R. STEINBRECHER	
Witness Signature:	***************************************	Mari
Print Witness Nam	te.	
	arting as production	
Inventor Signature:	Dirk Robert ENGLUND	Date:57.67.18
	Dirk Kobert EXALUND	
Witness Signature;		- Onte:
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For and on behalf of the Assignce:			
Date: 5/2/18	By:	LWYZCAA	
	Name:	Lauren C. Foster Associate Director Technology Licensing C : Massachusetts Institute of	
Witness Signature: / Wy	Sejada	Date:	/18
Print Witness Name:	Andy	COLADA.	<u></u>

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RECORDED: 05/24/2018