

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
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DIRK ROBERT ENGLUND	12/17/2020
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PROPERTY NUMBERS Total: 2	
Property Type	Number
Application Number:	16994844
PCT Number:	US2020046729
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DATE SIGNED:	02/01/2021
Total Attachments: 6	
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ASSIGNMENT

Hyeonrak CHOI, residing at 110 Second St. PH 14, Cambridge, MA 02141, United States; and Dirk Robert ENGLUND, residing at 116 Pleasant Street #3, Brookline, MA 02446, United States (each referred to as "Assignor") have made an invention(s) (the "Invention(s)") set forth in an application for patent entitled **Freely Scalable Quantum Computing using a 2D Atomic Emitter Array with Massively Parallel Optical Interconnects**, and which is a:

- (1) non-provisional application
 - (a) to be filed herewith; or
 - (b) bearing Application No. 16/994,844, and filed on 2020-08-17; and/or

- (2) PCT application
 - (a) bearing Application No. PCT/US2020/046729, and filed on 2020-08-18.

WHEREAS, Massachusetts Institute of Technology, a University having its principal place of business at 77 Massachusetts Ave, Cambridge, MA 02139, United States, 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 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.

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 Smith Baluch 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.

Inventor Signature:  Date: 09/18/2020
Hyeonrak CHOI

Witness Signature:  Date: 09/18/2020

Print Witness Name: Hyowan Seo

Inventor Signature: _____ Date: _____
Dirk Robert ENGLUND

Witness Signature: _____ Date: _____

Print Witness Name: _____

Inventor Signature: _____ Date: _____
Hyeongrak CHOI

Witness Signature: _____ Date: _____

Print Witness Name: _____

Inventor Signature: *Dirk Robert ENGLUND* Date: 12/17/2020
Dirk Robert ENGLUND

Witness Signature: *Janice Balzer* Date: 12/17/2020

Print Witness Name: Janice Balzer

For and on behalf of ASSIGNEE:

Date: 1/27/21 By: [Signature]
Name: Justin Horne
Title: MIT Intellectual Property Office
University: Massachusetts Institute of Technology

Witness Signature: [Signature] Date: 1/27/2021
Print Witness Name: Joseph Lee