

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM776675

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	SECURITY INTEREST		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
Lightmatter, Inc.		12/22/2022	Corporation: DELAWARE
RECEIVING PARTY DATA			
Name:	Eastward Fund Management, LLC		
Street Address:	432 Cherry St.		
City:	West Newton		
State/Country:	MASSACHUSETTS		
Postal Code:	02465		
Entity Type:	Limited Liability Company: DELAWARE		
PROPERTY NUMBERS Total: 7			
Property Type	Number	Word Mark	
Registration Number:	6295611	LIGHTMATTER	
Serial Number:	97215480	LM	
Serial Number:	97215580	ENVISE	
Serial Number:	97215763	PASSAGE	
Serial Number:	97215801	IDIOM	
Serial Number:	97215846	A GIANT LEAP	
Serial Number:	97259203	PASSAGELINK	
CORRESPONDENCE DATA			
Fax Number:	2028427899		
<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>			
Phone:	12027762046		
Email:	jmfitzpatrick@cooley.com		
Correspondent Name:	JENNIFER FITZPATRICK		
Address Line 1:	C/O COOLEY LLP		
Address Line 2:	1299 Pennsylvania Avenue, NW, Suite 700		
Address Line 4:	WASHINGTON, D.C. 20004-2400		
ATTORNEY DOCKET NUMBER:	318251-102		
NAME OF SUBMITTER:	JENNIFER FITZPATRICK		
SIGNATURE:	/JENNIFER FITZPATRICK/		

CH \$190.00 6295611

DATE SIGNED:

12/27/2022

Total Attachments: 22

source=Lightmatter - Intellectual Property Security Agr - exec.docx#page1.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page2.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page3.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page4.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page5.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page6.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page7.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page8.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page9.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page10.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page11.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page12.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page13.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page14.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page15.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page16.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page17.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page18.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page19.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page20.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page21.tif
source=Lightmatter - Intellectual Property Security Agr - exec.docx#page22.tif

INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement (“Agreement”) dated as of December 22, 2022 by and between Eastward Fund Management, LLC, a Delaware limited liability company with an address at 432 Cherry St., West Newton, MA 02465 (“Lender”) and Lightmatter, Inc., a Delaware corporation with an address at 100 Summer St., Suite 1850, Boston, MA 02110 (“Grantor”).

RECITALS

A. Lender has agreed to make certain advances of money and to extend certain financial accommodation to Grantor (the “Loans”) in the amounts and manner set forth in that certain Loan and Security Agreement by and between Lender and Grantor dated the Effective Date (as the same may be amended, modified or supplemented from time to time, the “Loan Agreement”; capitalized terms used herein are used as defined in the Loan Agreement). Lender is willing to make the Loans to Grantor, but only upon the condition, among others, that Grantor shall grant to Lender a security interest in certain Copyrights, Trademarks, Patents, and Mask Works (as each term is described below) to secure the obligations of Grantor under the Loan Agreement.

B. Pursuant to the terms of the Loan Agreement, Grantor has granted to Lender a security interest in all of Grantor’s right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Loan Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

1. Grant of Security Interest. To secure its obligations under the Loan Agreement, Grantor grants and pledges to Lender a security interest in all of Grantor’s right, title and interest in, to and under its intellectual property (all of which shall collectively be called the “Intellectual Property Collateral”), including, without limitation, the following:

(a) Any and all copyright rights, copyright applications, copyright registrations and like protections in each work or authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on Exhibit A attached hereto (collectively, the “Copyrights”);

(b) Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c) Any and all design rights that may be available to Grantor now or hereafter existing, created, acquired or held;

(d) All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same, including without limitation the patents and patent applications set forth on Exhibit B attached hereto and any patents and patent applications claiming the priority benefit of the patents and patent applications set forth on Exhibit B attached hereto (collectively, the "Patents");

(e) Any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on Exhibit C attached hereto (collectively, the "Trademarks");

(f) All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on Exhibit D attached hereto (collectively, the "Mask Works");

(g) Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h) All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(i) All amendments, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2. Recordation. Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and the Register of Copyrights and any other government officials to record and register this Agreement upon request by Lender.

3. Authorization. Grantor hereby authorizes Lender to (a) modify this Agreement unilaterally by amending the exhibits to this Agreement solely to include any Intellectual Property Collateral which Grantor obtains subsequent to the date of this Agreement, and (b) file a duplicate original of this Agreement containing amended exhibits reflecting such new Intellectual Property Collateral. Lender shall give Grantor prior written notice of such modifications pursuant to this Section 3, but any failure by Lender to provide such notice shall not be deemed to be a breach or default hereunder or give rise to any liability to Lender.

4. Loan Documents. This Agreement has been entered into pursuant to and in conjunction with the Loan Agreement, which is hereby incorporated by reference. The provisions of the Loan Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of Lender with respect to the Intellectual Property Collateral are

as provided by the Loan Agreement and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

5. Execution in Counterparts. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or in electronic (i.e., “pdf” or “tif” format) shall be effective as delivery of a manually executed counterpart of this Agreement.

6. Successors and Assigns. This Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

7. Governing Law. This Agreement and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the Commonwealth of Massachusetts, without giving effect to any choice or conflict of law provision or rule (whether of the Commonwealth of Massachusetts or any other jurisdiction).

[Signature page follows.]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

LIGHTMATTER, INC.

DocuSigned by:
Nick Harris
001D6C34A13F479...
By: Nicholas Harris
Title: CEO

LENDER:

EASTWARD FUND MANAGEMENT, LLC

DocuSigned by:
Dennis P. Cameron
D6CA308B965D4A9...
By: Dennis Cameron
Title: Chief Executive Officer

EXHIBIT A

Copyrights

None.

EXHIBIT B

Patents

<u>Description</u>	<u>Application Number</u>	<u>Application Date</u>	<u>Status</u>	<u>Jurisdiction</u>
PHOTONIC PROCESSING SYSTEMS AND METHODS	3100326	5/14/19	Pending	Canada
PHOTONIC PROCESSING SYSTEMS AND METHODS	2019800467448	5/14/19	Granted	China
PHOTONIC PROCESSING SYSTEMS AND METHODS	2022106047237	5/14/19	Published	China
PHOTONIC PROCESSING SYSTEMS AND METHODS	19803490.2	5/14/19	Published	European Patent Office
PHOTONIC PROCESSING SYSTEMS AND METHODS	2021-514294	5/14/19	Pending	Japan
PHOTONIC PROCESSING SYSTEMS AND METHODS	10-2020-7036125	5/14/19	Pending	Republic of Korea
PHOTONIC PROCESSING SYSTEMS AND METHODS	11202011352S	5/14/19	Pending	Singapore
PHOTONIC PROCESSING SYSTEMS AND METHODS	108116591	5/14/19	Published	Taiwan
PHOTONIC PROCESSING SYSTEMS AND METHODS	16/412098	5/14/19	Granted	United States of America
PHOTONIC PROCESSING SYSTEMS AND METHODS	16/986655	8/6/20	Granted	United States of America
PHOTONIC PROCESSING SYSTEMS AND METHODS	17/539377	12/1/21	Allowed	United States of America
PHOTONIC PROCESSING SYSTEMS AND METHODS	PCT/US2019/032181	5/14/19	National Phase	Patent Cooperation Treaty
SYSTEMS AND METHODS FOR TRAINING MATRIX-BASED DIFFERENTIABLE PROGRAMS	16/412159	5/14/19	Granted	United States of America
SYSTEMS AND METHODS FOR TRAINING MATRIX-BASED DIFFERENTIABLE PROGRAMS	16/915023	6/29/20	Granted	United States of America

SYSTEMS AND METHODS FOR TRAINING MATRIX-BASED DIFFERENTIABLE PROGRAMS	17/864172	7/13/22	Published	United States of America
OPTICALLY INTERFACED STACKED MEMORIES AND RELATED METHODS AND SYSTEMS	19803311.0	4/30/19	Published	European Patent Office
OPTICALLY INTERFACED STACKED MEMORIES AND RELATED METHODS AND SYSTEMS	2021-514285	4/30/19	Pending	Japan
OPTICALLY INTERFACED STACKED MEMORIES AND RELATED METHODS AND SYSTEMS	10-2020-7036475	4/30/19	Pending	Republic of Korea
OPTICALLY INTERFACED STACKED MEMORIES AND RELATED METHODS AND SYSTEMS	108115495	5/6/19	Pending	Taiwan
OPTICALLY INTERFACED STACKED MEMORIES AND RELATED METHODS AND SYSTEMS	17/055549	11/13/20	Granted	United States of America
OPTICALLY INTERFACED STACKED MEMORIES AND RELATED METHODS AND SYSTEMS	PCT/US2019/029803	4/30/19	National Phase	Patent Cooperation Treaty
CONVOLUTIONAL LAYERS FOR NEURAL NETWORKS USING PROGRAMMABLE NANOPHOTONICS	16/412261	5/14/19	Published	United States of America
OPTICAL DIFFERENTIAL LOW-NOISE RECEIVERS AND RELATED METHODS	16/411391	5/14/19	Granted	United States of America
OPTICAL DIFFERENTIAL LOW-NOISE RECEIVERS AND RELATED METHODS	17/511040	10/26/21	Published	United States of America
PHOTONICS PACKAGING METHOD AND DEVICE	16/653159	10/15/19	Granted	United States of America

HIGH-EFFICIENCY MULTI-SLOT WAVEGUIDE NANO-OPTO-ELECTROMECHANICAL PHASE MODULATOR	16/411476	5/14/19	Granted	United States of America
HIGH-EFFICIENCY MULTI-SLOT WAVEGUIDE NANO-OPTO-ELECTROMECHANICAL PHASE MODULATOR	17/103694	11/24/20	Granted	United States of America
MATRIX MULTIPLICATION USING OPTICAL PROCESSING	16/671726	11/1/19	Published	United States of America
REAL-NUMBER PHOTONIC ENCODING	16/412242	5/14/19	Granted	United States of America
METHODS, SYSTEMS, AND APPARATUS FOR PROGRAMMABLE QUANTUM PHOTONIC PROCESSING	15/716196	9/26/17	Granted	United States of America
UNIVERSAL LINEAR COMPONENTS	14/092565	11/27/13	Granted	United States of America
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	3130114	2/25/20	Pending	Canada
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	202080029762.8	2/25/20	Published	China
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	20763126.8	2/25/20	Published	European Patent Office
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	62022055816.2	2/25/20	Published	Hong Kong
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	2021-549796	2/25/20	Pending	Japan
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	10-2021-7030751	2/25/20	Pending	Republic of Korea
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	11202108799Q	2/25/20	Pending	Singapore

HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	109106267	2/26/20	Published	Taiwain
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	16/800998	2/25/20	Granted	United States of America
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	16/801015	2/25/20	Granted	United States of America
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	16/995674	8/17/20	Granted	United States of America
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	17/246892	5/3/21	Published	United States of America
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	17/545137	12/8/21	Published	United States of America
HYBRID ANALOG-DIGITAL MATRIX PROCESSORS	PCT/US2020/019747	2/25/20	National Phase	Patent Cooperation Treaty
PATH-NUMBER-BALANCED UNIVERSAL PHOTONIC NETWORK	109105832	2/24/20	Published	Taiwain
PATH-NUMBER-BALANCED UNIVERSAL PHOTONIC NETWORK	16/799153	2/24/20	Granted	United States of America
PATH-NUMBER-BALANCED UNIVERSAL PHOTONIC NETWORK	17/507325	10/21/21	Published	United States of America
PHOTONIC COMMUNICATION PLATFORM	3131615	3/5/20	Pending	Canada
PHOTONIC COMMUNICATION PLATFORM	202080019018.X	3/5/20	Published	China
PHOTONIC COMMUNICATION PLATFORM	20766814.6	3/5/20	Published	European Patent Office
PHOTONIC COMMUNICATION PLATFORM	62022055815.4	3/5/20	Published	Hong Kong

PHOTONIC COMMUNICATION PLATFORM	2021-552698	3/5/20	Pending	Japan
PHOTONIC COMMUNICATION PLATFORM	10-2021-7032104	3/5/20	Pending	Republic of Korea
PHOTONIC COMMUNICATION PLATFORM	11202108868T	3/5/20	Pending	Singapore
PHOTONIC COMMUNICATION PLATFORM	109107465	3/6/20	Published	Taiwain
PHOTONIC COMMUNICATION PLATFORM	16/810573	3/5/20	Granted	United States of America
PHOTONIC COMMUNICATION PLATFORM	17/313415	5/6/21	Published	United States of America
PHOTONIC COMMUNICATION PLATFORM	18/070889	11/29/22	Pending	United States of America
PHOTONIC COMMUNICATION PLATFORM	PCT/US2020/021209	3/5/20	National Phase	Patent Cooperation Treaty
PHOTONICS STABILIZATION CIRCUITRY	202080061638.X	7/1/20	Published	China
PHOTONICS STABILIZATION CIRCUITRY	20834346.7	7/1/20	Published	European Patent Office
PHOTONICS STABILIZATION CIRCUITRY	2021-577094	7/1/20	Pending	Japan
PHOTONICS STABILIZATION CIRCUITRY	10-2022-7003471	7/1/20	Pending	Republic of Korea
PHOTONICS STABILIZATION CIRCUITRY	109122242	7/1/20	Published	Taiwain
PHOTONICS STABILIZATION CIRCUITRY	16/918196	7/1/20	Granted	United States of America

PHOTONICS STABILIZATION CIRCUITRY	17/843939	6/17/22	Published	United States of America
PHOTONICS STABILIZATION CIRCUITRY	PCT/US2020/040428	7/1/20	National Phase	Patent Cooperation Treaty
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	3148118	7/28/20	Pending	Canada
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	2020800686429	7/28/20	Published	China
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	20847145.8	7/28/20	Published	European Patent Office
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	2022-506291	7/28/20	Pending	Japan
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	10-2022-7006299	7/28/20	Pending	Republic of Korea
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	11202200520P	7/28/20	Pending	Singapore
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	109125536	7/29/20	Published	Taiwain
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	16/940900	7/28/20	Granted	United States of America

SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	17/840515	6/14/22	Pending	United States of America
SYSTEMS AND METHODS FOR ANALOG COMPUTING USING A LINEAR PHOTONIC PROCESSOR	PCT/US2020/043841	7/28/20	National Phase	Patent Cooperation Treaty
QUANTIZED INPUTS FOR MACHINE LEARNING MODELS	17/028175	9/22/20	Published	United States of America
QUANTIZED ARCHITECTURE SEARCH FOR MACHINE LEARNING MODELS	17/081841	10/27/20	Published	United States of America
PIN SHARING FOR PHOTONIC PROCESSORS	110101633	1/15/21	Published	Taiwain
PIN SHARING FOR PHOTONIC PROCESSORS	17/149110	1/14/21	Granted	United States of America
PIN SHARING FOR PHOTONIC PROCESSORS	17/967314	10/17/22	Pending	United States of America
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	202080089333.X	11/20/20	Published	China
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	20891195.8	11/20/20	Published	European Patent Office
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	2022-529630	11/20/20	Pending	Japan
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	10-2022-7021075	11/20/20	Pending	Republic of Korea
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	109140823	11/20/20	Published	Taiwain
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	17/100158	11/20/20	Granted	United States of America

LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	PCT/US2020/061642	11/20/20	National Phase	Patent Cooperation Treaty
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	17/101415	11/23/20	Granted	United States of America
LINEAR PHOTONIC PROCESSORS AND RELATED METHODS	17/398384	8/10/21	Allowed	United States of America
PHOTONIC WAFER COMMUNICATION SYSTEMS AND RELATED PACKAGES	21750009.9	2/2/21	Published	European Patent Office
PHOTONIC WAFER COMMUNICATION SYSTEMS AND RELATED PACKAGES	2022-547075	2/2/21	Pending	Japan
PHOTONIC WAFER COMMUNICATION SYSTEMS AND RELATED PACKAGES	10-2022-7030294	2/2/21	Pending	Republic of Korea
PHOTONIC WAFER COMMUNICATION SYSTEMS AND RELATED PACKAGES	110103972	2/3/21	Published	Taiwan
PHOTONIC WAFER COMMUNICATION SYSTEMS AND RELATED PACKAGES	17/165157	2/2/21	Published	United States of America
PHOTONIC WAFER COMMUNICATION SYSTEMS AND RELATED PACKAGES	PCT/US2021/016129	2/2/21	National Phase	Patent Cooperation Treaty
REALIZING HIGH PER-MODE OPTICAL POWER WITH INTEGRATED LIGHT SOURCES AND OPTICAL COMBINERS	21772645.4	3/15/21	Pending	European Patent Office

REALIZING HIGH PER-MODE OPTICAL POWER WITH INTEGRATED LIGHT SOURCES AND OPTICAL COMBINERS	2022-553678	3/15/21	Pending	Japan
REALIZING HIGH PER-MODE OPTICAL POWER WITH INTEGRATED LIGHT SOURCES AND OPTICAL COMBINERS	11202252585R	3/15/21	Pending	Singapore
REALIZING HIGH PER-MODE OPTICAL POWER WITH INTEGRATED LIGHT SOURCES AND OPTICAL COMBINERS	17/202300	3/15/21	Published	United States of America
REALIZING HIGH PER-MODE OPTICAL POWER WITH INTEGRATED LIGHT SOURCES AND OPTICAL COMBINERS	PCT/US2021/022434	3/15/21	National Phase	Patent Cooperation Treaty
PHOTONICS PROCESSOR ARCHITECTURE		4/26/21	Pending	Canada
PHOTONICS PROCESSOR ARCHITECTURE		4/26/21	Pending	China
PHOTONICS PROCESSOR ARCHITECTURE	21796097.0	4/26/21	Pending	European Patent Office
PHOTONICS PROCESSOR ARCHITECTURE	2022-565690	4/26/21	Pending	Japan
PHOTONICS PROCESSOR ARCHITECTURE	10-2022-7041063	4/26/21	Pending	Republic of Korea
PHOTONICS PROCESSOR ARCHITECTURE	110115070	4/27/21	Published	Taiwan
PHOTONICS PROCESSOR ARCHITECTURE	17/240506	4/26/21	Published	United States of America
PHOTONICS PROCESSOR ARCHITECTURE	PCT/US2021/029150	4/26/21	National Phase	Patent Cooperation Treaty
FAST PREDICTION PROCESSOR	110123779	6/29/21	Published	Taiwan
FAST PREDICTION PROCESSOR	17/359025	6/25/21	Published	United States of America

FAST PREDICTION PROCESSOR	PCT/US2021/039227	6/25/21	Published	Patent Cooperation Treaty
SYSTEMS AND METHODS FOR UTILIZING PHOTONIC DEGREES OF FREEDOM IN A PHOTONIC PROCESSOR	110127129	7/23/21	Pending	Taiwain
SYSTEMS AND METHODS FOR UTILIZING PHOTONIC DEGREES OF FREEDOM IN A PHOTONIC PROCESSOR	17/383509	7/23/21	Published	United States of America
SYSTEMS AND METHODS FOR UTILIZING PHOTONIC DEGREES OF FREEDOM IN A PHOTONIC PROCESSOR	PCT/US2021/042882	7/23/21	Published	Patent Cooperation Treaty
TECHNIQUES FOR ADAPTING NEURAL NETWORKS TO DEVICES	17/390764	7/30/21	Published	United States of America
PHOTONICS PROCESSOR ARCHITECTURE	17/240573	4/26/21	Published	United States of America
AN EFFICIENT BUFFERING TECHNIQUE FOR TRANSFERRING DATA	110141646	11/9/21	Published	Taiwain
AN EFFICIENT BUFFERING TECHNIQUE FOR TRANSFERRING DATA	17/522831	11/9/21	Published	United States of America
AN EFFICIENT BUFFERING TECHNIQUE FOR TRANSFERRING DATA	PCT/US2021/058658	11/9/21	Published	Patent Cooperation Treaty
VECTOR PROCESSOR DATA STORAGE	110142559	11/16/21	Pending	Taiwain
VECTOR PROCESSOR DATA STORAGE	17/527107	11/15/21	Published	United States of America
VECTOR PROCESSOR DATA STORAGE	PCT/US2021/059425	11/15/21	Published	Patent Cooperation Treaty

PARALLELIZATION AND PIPELINING STRATEGIES FOR AN EFFICIENT ANALOG NEURAL NETWORK ACCELERATOR	110142564	11/16/21	Published	Taiwan
PARALLELIZATION AND PIPELINING STRATEGIES FOR AN EFFICIENT ANALOG NEURAL NETWORK ACCELERATOR	17/526960	11/15/21	Published	United States of America
PARALLELIZATION AND PIPELINING STRATEGIES FOR AN EFFICIENT ANALOG NEURAL NETWORK ACCELERATOR	PCT/US2021/059408	11/15/21	Published	Patent Cooperation Treaty
MACHINE LEARNING MODEL TRAINING USING AN ANALOG PROCESSOR	17/537156	11/29/21	Published	United States of America
MACHINE LEARNING MODEL TRAINING USING AN ANALOG PROCESSOR	PCT/US2021/061013	11/29/21	Published	Patent Cooperation Treaty
RESIDUE NUMBER SYSTEM IN A PHOTONIC MATRIX ACCELERATOR	17/543676	12/6/21	Published	United States of America
RESIDUE NUMBER SYSTEM IN A PHOTONIC MATRIX ACCELERATOR	PCT/US2021/062080	12/6/21	Published	Patent Cooperation Treaty
THE ACCURACY OF LOW-BITWIDTH NEURAL NETWORKS BY REGULARIZING THE HIGHER-ORDER MOMENTS OF WEIGHTS AND HIDDEN STATES	17/672627	2/15/22	Published	United States of America
COMPUTER CHASSIS	209988	1/28/22	Pending	Canada
COMPUTER CHASSIS	2022300624744	1/29/22	Pending	China
COMPUTER CHASSIS	008843825	1/26/22	Pending	European Union
COMPUTER CHASSIS	008843825	1/26/22	Pending	European Union

COMPUTER CHASSIS	008843825	1/26/22	Pending	European Union
COMPUTER CHASSIS	6188690	1/26/22	Granted	United Kingdom
COMPUTER CHASSIS	6188689	1/26/22	Granted	United Kingdom
COMPUTER CHASSIS	6188691	1/26/22	Granted	United Kingdom
COMPUTER CHASSIS	2022-1636	1/28/22	Granted	Japan
COMPUTER CHASSIS	30-2022-3857	1/27/22	Allowed	Republic of Korea
COMPUTER CHASSIS	29/801802	7/30/21	Pending	United States of America
ELECTRONIC-PHOTONIC PROCESSORS AND RELATED PACKAGES	111118912	5/20/22	Pending	Taiwan
ELECTRONIC-PHOTONIC PROCESSORS AND RELATED PACKAGES	17/748916	5/19/22	Published	United States of America
ELECTRONIC-PHOTONIC PROCESSORS AND RELATED PACKAGES	PCT/US2022/030215	5/20/22	Published	Patent Cooperation Treaty
COMPUTER CHASSIS	2022-1637	1/28/22	Granted	Japan
COMPUTER CHASSIS	30-2022-3858	1/27/22	Allowed	Republic of Korea
COMPUTER CHASSIS	29/801810	7/30/21	Pending	United States of America
COMPUTER CHASSIS	2022-1638	1/28/22	Granted	Japan
COMPUTER CHASSIS	30-2022-3859	1/27/22	Allowed	Republic of Korea
COMPUTER CHASSIS	29/801805	7/30/21	Pending	United States of America
ARCHITECTING AN INTEGRATED CIRCUIT OR SYSTEM USING MACHINE LEARNING	17/845796	6/21/22	Pending	United States of America
FIBER-COUPLED LASER LIGHT SOURCE	111132967	8/31/22	Pending	Taiwan
FIBER-COUPLED LASER LIGHT SOURCE	17/899277	8/30/22	Pending	United States of America

FIBER-COUPLED LASER LIGHT SOURCE	PCT/US2022/042038	8/30/22	Pending	Patent Cooperation Treaty
SWITCHED SPATIAL TENSOR DATA MANIPULATION WITH PHOTONICS	17/903201	9/6/22	Pending	United States of America
YIELD ENHANCEMENT TECHNIQUES FOR PHOTONIC COMMUNICATIONS PLATFORM	111134522	9/13/22	Pending	Taiwan
YIELD ENHANCEMENT TECHNIQUES FOR PHOTONIC COMMUNICATIONS PLATFORM	17/942404	9/12/22	Pending	United States of America
YIELD ENHANCEMENT TECHNIQUES FOR PHOTONIC COMMUNICATIONS PLATFORM	PCT/US2022/043209	9/12/22	Pending	Patent Cooperation Treaty
CONSTRAINED OPTIMIZATION USING AN ANALOG PROCESSOR	17/964889	10/12/22	Pending	United States of America
MULTI-TENANT ISOLATION ON A MULTI-RETICLE PHOTONIC COMMUNICATION PLATFORM	111138827	10/13/22	Pending	Taiwan
MULTI-TENANT ISOLATION ON A MULTI-RETICLE PHOTONIC COMMUNICATION PLATFORM	17/964337	10/12/22	Pending	United States of America
MULTI-TENANT ISOLATION ON A MULTI-RETICLE PHOTONIC COMMUNICATION PLATFORM	PCT/US2022/046379	10/12/22	Pending	Patent Cooperation Treaty

IMPROVING THE ACCURACY OF ANALOG LINEAR PROCESSOR	63/287219	12/8/21	Pending	United States of America
PACKAGE ASSEMBLY FLOW AND MATERIALS	63/324598	3/28/22	Pending	United States of America
PACKAGE ASSEMBLY FLOW AND MATERIALS	63/325113	3/29/22	Pending	United States of America
PACKAGE ASSEMBLY FLOW AND MATERIALS	63/332518	4/19/22	Pending	United States of America
PACKAGE ASSEMBLY FLOW AND MATERIALS	63/355315	6/24/22	Pending	United States of America
METHOD FOR OPTICAL FIBER ATTACH ON 3D STACKED WAFER	63/327717	4/5/22	Pending	United States of America
LED-BASED PHOTONIC PROCESSING UNIT	63/336216	4/28/22	Pending	United States of America
WAFER-SCALE HETEROGENEOUS COMPUTING SYSTEMS	63/355275	6/24/22	Pending	United States of America
COMPUTE AND MEMORY DISAGGREGATION USING RECONFIGURABLE OPTICAL COMMUNICATION SUBSTRATE	63/395311	8/4/22	Pending	United States of America
INCREASING THE YIELD OF FIBER ATTACH BY REDUNDANCY	63/397609	8/12/22	Pending	United States of America
CO-PACKAGED OPTICS, ACTIVE INTERPOSER, AND CHIPLET PACKAGING SOLUTION	63/424807	11/11/22	Pending	United States of America
PHOTONIC PROGRAMMABLE INTERCONNECT CONFIGURATIONS	63/428003	11/25/22	Pending	United States of America

EXHIBIT C

Trademarks

<u>Description</u>	<u>Registration/ Application Number</u>	<u>Registration/ Application Date</u>	<u>Status</u>	<u>Jurisdiction</u>
LIGHTMATTER	29270811	7-Apr-19	Registered	China
LIGHTMATTER	1437114	5-Oct-18	Pending	China
LIGHTMATTER	1437114	5-Oct-18	Registered	European Union
LIGHTMATTER	801437114	5-Oct-18	Registered	United Kingdom
LIGHTMATTER	1437114	5-Oct-18	Registered	Japan
LIGHTMATTER	1437114	5-Oct-18	Registered	Korea, Republic of
LIGHTMATTER	40202004944T	5-Oct-18	Registered	Singapore
LIGHTMATTER	6295611	16-Mar-21	Registered	United States of America
LIGHTMATTER	1437114	5-Oct-18	Registered	Int'l Registration - Madrid Protocol Only
LM (STYLIZED)	to be assigned		Pending	European Union
LM (STYLIZED)	to be assigned		Pending	Japan
LM (STYLIZED)	to be assigned		Pending	Korea, Republic of
LM (STYLIZED)	111049769	13-Jul-22	Pending	Taiwan
LM (STYLIZED)	97/215480	12-Jan-22	Pending	United States of America
LM (STYLIZED)	A0125012	13-Jul-22	Pending	Int'l Registration - Madrid Protocol Only
ENVISE	to be assigned		Pending	European Union
ENVISE	to be assigned		Pending	Japan
ENVISE	to be assigned		Pending	Korea, Republic of
ENVISE	111049768	13-Jul-22	Pending	Taiwan

ENVISE	97/215580	12-Jan-22	Pending	United States of America
ENVISE	A0125014	12-Jul-22	Pending	Int'l Registration - Madrid Protocol Only
PASSAGE	to be assigned		Pending	European Union
PASSAGE	to be assigned		Pending	Japan
PASSAGE	to be assigned		Pending	Korea, Republic of
PASSAGE	111049767	13-Jul-22	Pending	Taiwan
PASSAGE	97/215763	12-Jan-22	Pending	United States of America
PASSAGE	A0125015	12-Jul-22	Pending	Int'l Registration - Madrid Protocol Only
IDIOM	1694536	12-Jul-22	Pending	European Union
IDIOM	1694536	12-Jul-22	Pending	Japan
IDIOM	1694536	12-Jul-22	Pending	Korea, Republic of
IDIOM	111049766	13-Jul-22	Pending	Taiwan
IDIOM	97/215801	12-Jan-22	Pending	United States of America
IDIOM	1694536	12-Jul-22	Registered	Int'l Registration - Madrid Protocol Only
A GIANT LEAP	97/215846	12-Jan-22	Pending	United States of America
PASSAGELINK	97/259203	9-Feb-22	Pending	United States of America

EXHIBIT D

Mask Works

None.