

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT8289131

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
LUMERICAL INC.	04/30/2020
RECEIVING PARTY DATA	
Name:	ANSYS LUMERICAL IP, LLC
Street Address:	1209 ORANGE STREET
City:	WILMINGTON
State/Country:	DELAWARE
Postal Code:	19801
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	17572454
CORRESPONDENCE DATA	
Fax Number:	
<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>	
Email:	noel.ng@ansys.com
Correspondent Name:	ANSYS, INC.
Address Line 1:	2600 ANSYS DRIVE,
Address Line 4:	CANONSBURG,, PENNSYLVANIA 15317
ATTORNEY DOCKET NUMBER:	2020-025-US-CON
NAME OF SUBMITTER:	NOEL NG
SIGNATURE:	/Noel Ng/
DATE SIGNED:	11/21/2023
Total Attachments: 6	
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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6283604

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
LUMERICAL INC.	04/30/2020
RECEIVING PARTY DATA	
Name:	ANSYS LUMERICAL IP, LLC
Street Address:	1209 ORANGE STREET
City:	WILMINGTON
State/Country:	DELAWARE
Postal Code:	19801
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16231477
CORRESPONDENCE DATA	
Fax Number:	(408)341-3098
<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:	408-341-3000
Email:	juanita.briscoe@wbd-us.com
Correspondent Name:	JAMES C. SCHELLER
Address Line 1:	P.O. BOX 7037
Address Line 2:	WOMBLE BOND DICKINSON (US) LLP
Address Line 4:	ATLANTA, GEORGIA 30357-0037
ATTORNEY DOCKET NUMBER:	106042P056
NAME OF SUBMITTER:	JAMES C. SCHELLER, REG. NO. 31,195
SIGNATURE:	/James C. Scheller/
DATE SIGNED:	09/03/2020
Total Attachments: 5	
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PATENT AND PATENT APPLICATION ASSIGNMENT

This Patent and Patent Application Assignment (this "**Assignment**"), is made as of April 30, 2020, by Lumerical Inc., a Canadian corporation having a place of business at 1700 - 1095 West Pender Street, Vancouver, British Columbia, Canada ("**Assignor**"), to Ansys Lumerical IP, LLC, a Delaware corporation having a place of business at 1209 Orange Street, Wilmington, DE 19801, County of New Castle ("**Assignee**").

WHEREAS, Assignor and Assignee have entered into a Purchase Agreement dated April 30, 2020 (the "**Agreement**"). All capitalized terms used herein but not otherwise defined herein shall have the meanings set forth in the Agreement.

WHEREAS, Assignor owns the patents issued by the United States and other countries' Patent and Trademark Offices as set forth on Exhibit A hereto (the "**Patents**").

WHEREAS, Assignor has also filed patent applications with the United States and other countries' Patent and Trademark Offices as set forth on Exhibit A hereto (the "**Patent Applications**").

WHEREAS, pursuant to the Agreement, Assignor desires to assign to Assignee all of Assignor's right, title and interest in and to the Patents and the Patent Applications.

NOW THEREFORE, in consideration of the forgoing promises, the mutual covenants and agreements contained in the Agreement and the covenants and agreements in this Assignment and to induce Assignee to consummate the transactions contemplated by the Agreement, Assignor agrees as follows:

1. Assignor does hereby sell, transfer, convey, assign and deliver to Assignee all of Assignor's right, title and interest in and to the Patents and the Patent Applications, including any foreign counterparts, divisions, continuations or reissues thereof, the same to be held by Assignee for Assignee's use and enjoyment, and for the use and enjoyment of Assignee's successors, assigns and other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor if this Assignment had not been made; together with all demands and claims, actions or causes of action, for losses, damages (whether direct, indirect or consequential), deficiencies, costs, expenses, liabilities, judgments, settlements, awards, fines, response costs, sanctions, penalties and charges ("**Damages**") by reason of past infringements of the Patents or Patent Applications, along with the right to sue for and collect such Damages for the use and benefit of Assignee and its successors, assigns and other legal representatives.

2. Assignor hereby authorizes and requests the Commissioner for Patents of the United States, and any officer of any country or countries foreign to the United States, whose duty is to issue patents or other evidence or forms of intellectual property protection or applications as foresaid, to issue the same to Assignee and its successors, assigns and other legal representatives in accordance with the terms of this Assignment.

3. Assignor hereby represents and warrants that Assignor has all necessary power and has taken all necessary action to make this Assignment. Assignor further hereby covenants and agrees to and with Assignee, its successors, assigns and other legal representatives, that Assignor shall, whenever counsel of Assignee, or the counsel of its successors, assigns and other legal representatives, advise that any proceeding in connection with said Patents and Patent Applications is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary required to be done to effect this Assignment.

4. Assignor further agrees that, should additional or further documentation of the assignment be required in connection with this Assignment, Assignor will, without further consideration, provide or execute such other information or documents as may be necessary upon Assignee's reasonable request and, in any event, in accordance with the Agreement.

5. This Assignment shall be binding on and shall inure to the benefit of, the parties hereto and their respective successors and assigns. This Assignment will be governed by, and constructed in accordance with, the laws of the State of Delaware applicable to contracts executed and performed entirely therein, without regard to the principles of choice of laws or conflicts of law of any jurisdiction. If any term or other provision of this Assignment is invalid, illegal or incapable of being enforced by any rule of law or public policy, all other conditions and provisions of this Assignment will nevertheless remain in full force and effect so long as the economic or legal substance of the transactions contemplated hereby is not affected in any manner materially adverse to any party. Upon such determination that any term or other provision is invalid, illegal or incapable of being enforced, the parties hereto will negotiate in good faith to modify the Assignment so as to effect the original intent of the parties as closely as possible in a mutually acceptable manner in order to the greatest extent possible. This Assignment may be executed in one or more counterparts, and by the different parties hereto in separate counterparts, including counterparts transmitted by facsimile or electronic transmission, each of which when executed will be deemed to be an original by all of which taken together will constitute one and the same agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, Assignor has executed this Assignment on the date first above written

ASSIGNOR:

LUMERICAL INC.

DocuSigned by:
By: *Bob Westhaver*
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Name: Bob Westhaver

Title: President

Exhibit A Granted Patents and Pending Patent Applications

1. Patents

Country	Patent No.	Title	Filing Date	Grant Date	Status
U.S.	10,095,816 (Publication No. 20150142397)	APPARATUS AND METHOD FOR TRANSFORMING A COORDINATE SYSTEM TO SIMULATE AN ANISOTROPIC MEDIUM	May 23, 2013	October 9, 2018	Issued

2. Patent Applications

Country	Application No.	Title	Filing Date	Status
U.S.	61/650,774 (Provisional)	APPARATUS AND METHOD FOR TRANSFORMING A COORDINATE SYSTEM TO SIMULATE AN ANISOTROPIC MEDIUM		
International (WIPO)	PCT/CA2013/050391 (Publication No. WO2013173921)	APPARATUS AND METHOD FOR TRANSFORMING A COORDINATE SYSTEM TO SIMULATE AN ANISOTROPIC MEDIUM	May 23, 2013	
Korea	KR20150032255A	APPARATUS AND METHOD FOR TRANSFORMING A COORDINATE SYSTEM TO SIMULATE AN ANISOTROPIC MEDIUM		
U.S.	62/726,720 (Provisional)	SYSTEM AND METHOD FOR SIMULATING AND ANALYZING QUANTUM CIRCUITS		
International (WIPO)	PCT/CA2019/051236 (Publication No. WO/2020/047661)	SYSTEM AND METHOD FOR SIMULATING AND ANALYZING QUANTUM CIRCUITS	September 4, 2019	
U.S.	62/639,469 (Provisional)	METHOD AND SYSTEM TO IMPLEMENT A COMPOSITE, MULTI-DOMAIN MODEL FOR ELECTROOPTICAL MODELING AND SIMULATION		

U.S.	62/776,067 (Provisional)	SYSTEM AND METHOD FOR CREATING A SINGLE PORT INTERFACE FOR SIMULATING BIDIRECTIONAL SIGNALS IN CIRCUITS USING AVAILABLE CIRCUIT SIMULATION STANDARDS		
International (WIPO)	PCT/CA2019/051756 (not published yet)	SYSTEM AND METHOD FOR CREATING A SINGLE PORT INTERFACE FOR SIMULATING BIDIRECTIONAL SIGNALS IN CIRCUITS USING AVAILABLE CIRCUIT SIMULATION STANDARDS		
U.S.	61/973,335 (Provisional)	METHOD AND APPARATUS FOR OPTICAL SIMULATION		
U.S.	16/231,477	METHOD AND SYSTEM TO IMPLEMENT A COMPOSITE, MULTI-DOMAIN MODEL FOR ELECTRO-OPTICAL MODELING AND SIMULATION	December 22, 2018	