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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4660308

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PAUL JAMES DOUGLAS WHITESIDE	01/12/2017
BENJAMIN SAMUEL GOLDSCHMIDT	01/18/2017
JOHN A. VIATOR	04/05/2017
RANDY CURRY	10/26/2017
NICHOLAS J. GOLDA	11/03/2015

RECEIVING PARTY DATA

Name:	THE CURATORS OF THE UNIVERSITY OF MISSOURI
Street Address:	316 UNIVERSITY HALL
City:	COLUMBIA
State/Country:	MISSOURI
Postal Code:	65211

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14730845

CORRESPONDENCE DATA

Fax Number: (314)345-7600

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: (314) 345-7000

Email: uspatents@senniger.com
Correspondent Name: SENNIGER POWERS LLP
Address Line 1: 100 NORTH BROADWAY

Address Line 2: 17TH FLOOR

Address Line 4: ST. LOUIS, MISSOURI 63102

ATTORNEY DOCKET NUMBER:	UMO 13079.US
NAME OF SUBMITTER:	JUSTINA S. TOWNSEND
SIGNATURE:	/JUSTINA S. TOWNSEND/
DATE SIGNED:	10/26/2017

Total Attachments: 10

PATENT REEL: 043961 FRAME: 0969

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PATENT REEL: 043961 FRAME: 0970

ASSIGNMENT OF PATENT RIGHTS FROM INVENTORS TO UNIVERSITY

This Assignment of Patent Rights from Inventor to University Agreement ("Agreement") is entered into by and between Paul James Douglas Whiteside, an individual having an address of 505 Lyon Street, Apt. 102, Columbia, Missouri 65201; Benjamin Samuel Goldschmidt, an individual having an address of 126 Weber Way, Pittsburgh, Pennsylvania 15210; John A. Viator, an individual having an address of 121 Richland Lane, Pittsburgh, Pennsylvania 15208; Randy Curry, an individual having an address of 1104 Merrill Court, Columbia, Missouri 65203; and Nicholas Golda, an individual having an address of 1202 E. Pierpont Meadows Road, Columbia, Missouri 65201 ("Assignors") and The Curators of the University of Missouri, a public corporation of the State of Missouri having a principal place of business at 316 University Hall, Columbia, Missouri 65211, U.S.A. ("Assignee").

WHEREAS Assignors have contributed to the subject matter of the invention disclosed, described, and/or claimed in UM Invention Disclosure No. 13UMC079 entitled "Photoacoustic Quantum Tunneling for Controlled Laser Light Delivery" ("Invention Disclosure Form") which is the subject of United States Patent Application Serial No. 14/730,845 filed on 06/04/2015 entitled "Guided Wave Ablation and Sensing" ("Patent Application"); Application Serial No. 62/125,476 filed on 01/21/2015 entitled "Photoacoustic quantum tunneling for controlled Laser Light Therapy" ("Patent Application"); Application Serial No. 61/997,549 filed on 06/04/2014 entitled "Photoacoustic Quantum Tunneling for Controlled Laser Light Therapy" ("Patent Application"); and Application Serial No. 61/956,241 filed on 06/04/2013 entitled "Photoacoustic probe for Burn Injury Diagnosis" ("Patent Application") and

WHEREAS, pursuant to Assignors' assignment obligations under the Assignee's Collected Rules and Regulations § 100.020, Assignors have an obligation to convey any and all rights that Assignors have or might have in the aforementioned invention and Patent Application; and

WHEREAS Assignors have previously executed an assignment dated June 24, 2013 related to the invention disclosed, described, and/or claimed in the Invention Disclosure Form; and

WHEREAS Assignors are willing to execute this notarized Agreement in order to confirm the assignment of rights in the Patent Application (and other rights as more fully set forth below) to Assignee.

NOW THEREFORE, in consideration of Assignors' past and continued employment with and use of Assignee's funds and facilities, Assignors' assignment obligations and royalty-sharing rights under the Collected Rules and Regulations § 100.020, the sum of USD \$1.00 in-hand paid, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Assignment

Assignors hereby assign, transfer, and convey (and confirm any prior such conveyance as the case may be) to Assignee, and Assignee hereby accepts, Assignors' entire right, title and interest in and to:

- (a) the invention disclosed and/or claimed, in whole or in part, in the Patent Application and any and all improvements therein conceived or reduced to practice by each of Assignors in the course of and the general scope of each of Assignors' employment with Assignee (collectively the "Invention");
- (b) all patents and patent applications that have been or may hereafter be filed which are based on the Invention in any country, including the Patent Application and any provisional, non-provisional, divisional, continuation, continuation-in-part, extension, renewal, re-examination, reissue, substitute, supplementary protection certificate, utility model, or similar legal protection based on the Invention ("Patents");
- (c) the right to claim priority to any of the Patents under the patent laws of the United States, the International Convention for the Protection of Industrial Property, or any other international agreement or laws of the country in which the Patents are filed, as may be applicable; and
- (d) all rights of action, powers, and benefits arising from ownership of the Patents, including the right to sue for past, present, and future infringement of the Patents, the right to collect royalties, fees, damages, and payments now or hereafter due or payable with respect to the Patents, the right to seek injunctive relief based on the Patents, and the right to pursue all causes of action and all enforcement rights relating to the Patents, whether known or unknown, currently pending or otherwise.

Assignors' rights assigned in (a)-(d) above are referred to collectively in this Agreement as the "Assigned Rights."

Assignors authorize and request the Director of the United States Patent and Trademark Office, and any corresponding entity, agency, or official of any other country whose duty it is to issue patents or similar legal protection, to issue the Patents to Assignee such that the Patents will be held by Assignee for its own use and benefit, for the full term for which the Patents are or may be granted.

2. Further Assurances

Upon the reasonable request of Assignee, Assignors agree to execute such documents and perform such acts as may be necessary to give full effect to the terms of this Agreement. Without limiting the generality of the foregoing, Assignors agree to execute any and all assignments and other documents that may be needed to record, vest, or perfect Assignee's right, title, and interest in and to the Assigned Rights as fully and entirely as the same would have been held and enjoyed by Assignors if this assignment had not been made. Assignors also agree to execute any and all declarations, oaths, specifications, and other documents requested by Assignee in connection with prosecution of the Patents. Assignors further agree to cooperate with and assist Assignee with respect to prosecution of the Patents, including communication to Assignee of any facts known to Assignors relating to the Invention and/or any prior art that may be material to patentability of the Invention. Assignors also agree that in the event any of the Patents become involved in an interference, derivation proceeding, re-examination, reissue, opposition, supplemental examination, inter partes review, post grant review, validity, or

infringement proceeding or litigation, Assignors will cooperate with and assist Assignee in relation to the proceeding for the benefit of Assignee at Assignee's expense.

3. <u>Representations and Warranties</u>

Assignors represent and warrant to Assignee that:

- (a) Assignors have the full right and power to enter into and perform their obligations under this Agreement without being in breach of any obligations owed by Assignors to any third party;
- (b) The Assigned Rights are free and clear of any agreement, lien, charges, encumbrances, ownership claim, or other claim or right, either written, oral, or implied, which will impair, interfere or conflict with the rights herein assigned to Assignee; and
- (c) Assignors have not assigned, transferred, or otherwise conveyed and will not assign, transfer, or otherwise convey to any third party any right or license under or with respect to the Assigned Rights or execute any other agreement that is in conflict with this Agreement.

4. Attorney-In-Fact

Assignors hereby irrevocably appoint the President of Assignee, or the President's designee, as each of Assignors' attorney-in-fact with authority to execute for Assignors and on Assignors' behalf any and all assignments, applications, or other instruments and documents required to be executed by Assignors pursuant to this Agreement, if Assignors are unwilling or unable to execute same. This appointment shall be deemed to be a power coupled with an interest, and as such, is irrevocable.

Patent Application Information

Assignors hereby authorize Assignee or its attorneys to insert in this Assignment the serial number and filing date of the Patent Application when known.

6. Binding Agreement

The provisions of this Agreement are binding upon, and will inure to the benefit of, the parties hereto and their respective heirs, personal representatives, successors and permitted assigns.

7. Counterparts

This Agreement may be executed in any number of counterparts, including facsimile or scanned PDF documents. Each such counterpart, facsimile or scanned PDF document shall be deemed an original instrument, and all of such counterparts, together, shall constitute one and the same executed Agreement.

[The rest of the page is intentionally left blank]

IN WITNESS WHEREOF, Assignors and Assignee have executed this Assignment Agreement as of the day and year written below.

PAUL JAMES DOUGLAS WHI	ITESIDE	
By Pellotte Title		1/12/2017
	Acknowledgement	
STATE OF Missouri	_)	
COUNTY OF Book) SS _)	
On this <u>un</u> day of <u>Jan</u> State and County aforesaid, personand known to me to be the personand he acknowledged the same to	of that name who signe	fore me, a Notary Public in and for the mes Douglas Whiteside, to me known d and sealed the foregoing instrument
(SEAL)		v
My Commission Expires:	3/25/2019	ASHLEY PIERCE Notary Public - Notary Seal State of Missouri Commissioned for Boone County My Commission Expires: March 25, 2019 Commission Number: 15834249

BENJAMIN SAMUEL GOLDSCHMIDT
By Ay 1/18/2017 Title Assistant Volessor Date
Acknowledgement
STATE OF termsy limite)
COUNTY OF Alley SS
On this 15 day of, 20 7, before me, a Notary Public in and for the State and County aforesaid, personally appeared Benjamin Samuel Goldschmidt, to me known
and known to me to be the person of that name who signed and sealed the foregoing instrument
and he acknowledged the same to be his free act and deed.
Notary Public
(SEAL) COMMONWEALTH OF PENNSYLVANIA NOTABIAL SEAL Ka'Yon Smich, Notacy Public
My Commission Expires: 12/1/2019 My Commission Expires Disc 11, 2019 My Commission Expires Disc 11, 2019 MEMBER, VENNEY VARIAN ASSOCIATION OF NOTABLES

JOHN A. VIATOR By / Date Date	p) 5, 2017
Acknowledgement	
STATE OF <u>PENMAGEN ON A</u>) SS COUNTY OF <u>ACCES</u>	
On this	iator, to me known and known to me the foregoing instrument, and he
(SEAL) My Commission Expires: 7/27/2020	COMMONWEALTH OF PENNSYLVANIA NOTARIAL SEAL Jay R. Jackson, Notary Public City of Pittsburgh, Allegheny County My Commission Expires July 27, 2020 MEMORY, PENNSYLVANIA ASSOCIATION OF NOTARIES

RANDY CURRY
By Q
Title professor
university of Missouri
Colubia mo 65211 Acknowledgement
STATE OF Missouri) COUNTY OF Boone) SS
COUNTY OF Boone) SS
On this 26 th day of October, 2017, before me, a Notary Public in and for the
State and County aforesaid, personally appeared Randy Curry, to me known and known to me to
be the person of that name who signed and sealed the foregoing instrument, and he
acknowledged the same to be his free act and deed.
KARLA ALSBERGE POUL alabence
My Commission Expires Notary Public
June 7, 2019 SALS Boone County
(SEAL) Commission 515625002

Application: 61/997,549, 61/956,24/ 13ume079

My Commission Expires:

NICHOLAS J. GOLDA	NOV 1 1 2015
By	$\frac{11\sqrt{3\sqrt{201S}}}{\text{Date}}$
Acknowl	edgement
STATE OF MISSELLE !) SS COUNTY OF BOOKE)	
COUNTY OF BOOKE)	
State and County aforesaid, personally appeared	2015, before me, a Notary Public in and for the Nicholas J. Golda, to me known and known to land sealed the foregoing instrument, and he
CANNA LYNN MOORE Notary Public - Notary Seal (S. A.L.) State of Missouri, Scone County Commission # 14612981 My Commission Expires May 6, 2018	ary Public

DANNA LYNN MOORE
Notely Public - Notely Seel
State of Missouri, Soone County
Commission # 14612961
Ny Commission Expires May 6, 2018

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PATENT REEL: 043961 FRAME: 0979

THE CURATORS OF THE UNIVERSITY OF MISSOURI
By / M// Fez 10-26-2017
Christopher M/Fender Date
Director, Office of Technology Management and Industry Relations
Acknowledgement
verio medionicii
STATE OF MISSOURI)
COUNTY OF Booke S
On this 26th day of October, 20 17 before me, a Notary Public in and for the
State and County aforesaid, personally appeared Christopher M. Fender, to me known and
known to me to be the person of that name who signed and sealed the foregoing instrument, and
he acknowledged the same to be his free act and deed on behalf of The Curators of the University of Missouri.
KARLA ALSBERGE FOULD CLAVERGE My Commission Empires FOULD CLAVERGE
Ame 7, 2019 Notary Public
(SEAL) Boone County Commission #15635992
My Commission Expires: 4/7/2019

University of Missouri

RECORDED: 10/26/2017

Delegated Standard Form