

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4019237

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
DAVID R. BUSCH JR.	02/24/2015
ASHWIN B. PARTHASARATHY	02/12/2015
WESLEY B. BAKER	02/03/2015
MALAVIKA CHANDRA	02/04/2015
RICKSON C. MESQUITA	05/19/2014
ARJUN C. YODH	02/12/2015
RECEIVING PARTY DATA	
Name:	THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA
Street Address:	3160 CHESTNUT STREET
Internal Address:	SUITE 200
City:	PHILADELPHIA
State/Country:	PENNSYLVANIA
Postal Code:	19104
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15120872
CORRESPONDENCE DATA	
Fax Number:	(215)568-3439
<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:	215-568-3100
Email:	assignments@woodcock.com
Correspondent Name:	BAKER & HOSTETLER LLP
Address Line 1:	CIRA CENTRE 12TH FLOOR
Address Line 2:	2929 ARCH STREET
Address Line 4:	PHILADELPHIA, PENNSYLVANIA 19104-2891
ATTORNEY DOCKET NUMBER:	103241.006145 / 14-6924
NAME OF SUBMITTER:	VALERIE CHICCHI
SIGNATURE:	/Valerie Chicchi/
DATE SIGNED:	08/23/2016

PATENT

Total Attachments: 36

source=SIGNED_ASSIGNMENTS#page1.tif
source=SIGNED_ASSIGNMENTS#page2.tif
source=SIGNED_ASSIGNMENTS#page3.tif
source=SIGNED_ASSIGNMENTS#page4.tif
source=SIGNED_ASSIGNMENTS#page5.tif
source=SIGNED_ASSIGNMENTS#page6.tif
source=SIGNED_ASSIGNMENTS#page7.tif
source=SIGNED_ASSIGNMENTS#page8.tif
source=SIGNED_ASSIGNMENTS#page9.tif
source=SIGNED_ASSIGNMENTS#page10.tif
source=SIGNED_ASSIGNMENTS#page11.tif
source=SIGNED_ASSIGNMENTS#page12.tif
source=SIGNED_ASSIGNMENTS#page13.tif
source=SIGNED_ASSIGNMENTS#page14.tif
source=SIGNED_ASSIGNMENTS#page15.tif
source=SIGNED_ASSIGNMENTS#page16.tif
source=SIGNED_ASSIGNMENTS#page17.tif
source=SIGNED_ASSIGNMENTS#page18.tif
source=SIGNED_ASSIGNMENTS#page19.tif
source=SIGNED_ASSIGNMENTS#page20.tif
source=SIGNED_ASSIGNMENTS#page21.tif
source=SIGNED_ASSIGNMENTS#page22.tif
source=SIGNED_ASSIGNMENTS#page23.tif
source=SIGNED_ASSIGNMENTS#page24.tif
source=SIGNED_ASSIGNMENTS#page25.tif
source=SIGNED_ASSIGNMENTS#page26.tif
source=SIGNED_ASSIGNMENTS#page27.tif
source=SIGNED_ASSIGNMENTS#page28.tif
source=SIGNED_ASSIGNMENTS#page29.tif
source=SIGNED_ASSIGNMENTS#page30.tif
source=SIGNED_ASSIGNMENTS#page31.tif
source=SIGNED_ASSIGNMENTS#page32.tif
source=SIGNED_ASSIGNMENTS#page33.tif
source=SIGNED_ASSIGNMENTS#page34.tif
source=SIGNED_ASSIGNMENTS#page35.tif
source=SIGNED_ASSIGNMENTS#page36.tif

DOCKET NO.: 103241.005919 / 14-6924

ASSIGNMENT

WHEREAS, I, David R. Busch, Jr., a citizen of United States, residing at 5034 Hazel Avenue, Philadelphia, Pennsylvania 19143, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005919 / 14-6924 ("the invention"), assigned application number 61/943,907 filed on February 24, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country, the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.


AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005919 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 24th day of Feb, year of 2015.


Signature - David R. Busch, Jr.

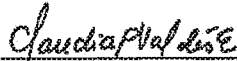
STATEMENT OF WITNESS

SIGNED at Castelldefels Barcelona Spain
(City) (State) (Country)

This 24th day of February, 2015.

I, Claudia Patricia Valdés Escobar whose full residence address is
Paseo de España 24, Castelldefels 08860, Barcelona, Spain

was personally present and did see David R. Busch, Jr. execute the above assignment on the 24th day of February, 2015, and such assignor is personally known to me to be the person described in such document.


Signature of Witness

ASSIGNMENT

WHEREAS, I, Ashwin B. Parthasarathy, a citizen of India, residing at 827 Pump House Lane, West Chester, Pennsylvania 19382, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005919 / 14-6924 ("the invention"), assigned application number 61/943,907 filed on February 24, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

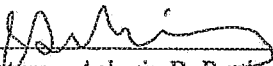
AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005919 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 12th day of February, year of 2015.


Signature – Ashwin B. Parthasarathy

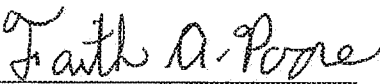
STATEMENT OF NOTARY PUBLIC

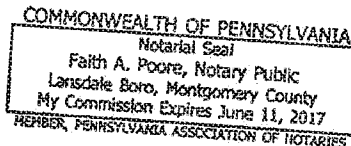
STATE OF PA :

: SS

COUNTY OF Philadelphia :

On this 12th day of February, year of 2015, before me personally came the above named Ashwin B. Parthasarathy to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.


Notary Public



ASSIGNMENT

WHEREAS, I, Wesley B. Baker, a citizen of United States, residing at 4501 Chester Avenue, #R2, Philadelphia, Pennsylvania 19143, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005919 / 14-6924 ("the invention"), assigned application number 61/943,907 filed on February 24, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005919 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 3 day of February, year of 2015.

Wesley B. Baker
Signature -- Wesley B. Baker

STATEMENT OF NOTARY PUBLIC

STATE OF PA:

: SS

COUNTY OF Philadelphia

On this 3rd day of February, year of 2015, before me personally came the above named Wesley B. Baker to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 11, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

ASSIGNMENT

WHEREAS, I, Malavika Chandra, a citizen of India, residing at 50 Dinsmore Avenue, Apt. 401, Framingham, Massachusetts 01702, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005919 / 14-6924 ("the invention"), assigned application number 61/943,907 filed on February 24, 2014, entitled **PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT** ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

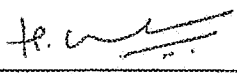
AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005919 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 4th day of February, year of 2015.



Signature – Malavika Chandra

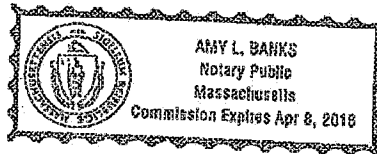
STATEMENT OF NOTARY PUBLIC

STATE OF Massachusetts :

: SS

COUNTY OF Middlesex :

On this 4th day of February, year of 2015, before me personally came the above named Malavika Chandra to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.


Notary Public Amy L Banks

ASSIGNMENT

WHEREAS, I, Rickson C. Mesquita, a citizen of Brazil, residing at R. do Sol, 133 - casa 133, Jd. Do Sol, Campinas, SP 13085, Brazil, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005919 / 14-6924 ("the invention"), assigned application number 61/943,907 filed on February 24, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005919 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 19th day of May, year of 2014.

Rickson C. Mesquita
Signature - Rickson C. Mesquita

RECEIVED IN
CAMPOGRAND

STATEMENT OF WITNESS

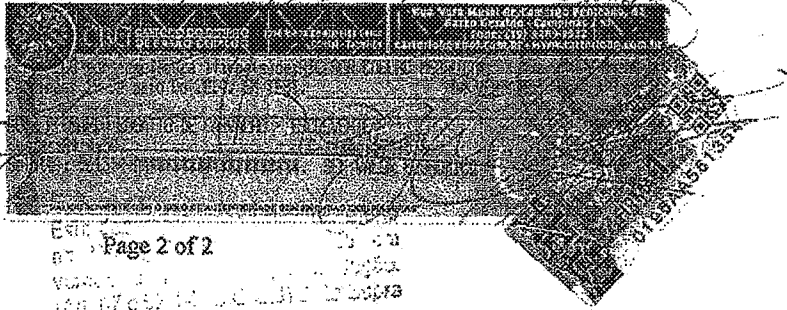
SIGNED at Campinas SP Brazil
(City) (State) (Country)

This 19th day of May, 2014.

I, Roberto J.M. Covolan whose full residence address is
Rua Angelo Grigel, 119 - Campinas - SP
21P 13085-460

was personally present and did see Rickson C. Mesquita execute the above assignment on the 19th day of May, 2014, and such assignor is personally known to me to be the person described in such document.

[Signature]
Signature of Witness



Page 2 of 2
[Illegible text]

ASSIGNMENT

WHEREAS, I, Arjun C. Yodh, a citizen of United States, residing at 231 Valley Road, Merion, Pennsylvania 19066, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005919 / 14-6924 ("the invention"), assigned application number 61/943,907 filed on February 24, 2014, entitled **PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT** ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005919 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 12 day of February, year of 2015.

Arjun G. Yodh
Signature - Arjun G. Yodh

STATEMENT OF NOTARY PUBLIC

STATE OF PA:

: SS

COUNTY OF Philadelphia:

On this 12th day of February, year of 2015, before me personally came the above named Arjun G. Yodh to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 11, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

ASSIGNMENT

WHEREAS, I, David R. Busch, Jr., a citizen of United States, residing at 5034 Hazel Avenue, Philadelphia, Pennsylvania 19143, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005998 / 14-6924 ("the invention"), assigned application number 62/091,048 filed on December 12, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005998 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 24th day of Feb., year of 2015.

David R. Busch, Jr.
Signature - David R. Busch, Jr.

STATEMENT OF WITNESS

SIGNED at Castelldefels Barcelona Spain
(City) (State) (Country)

This 24th day of February, 2015.

I, Claudia Patricia Valdés Escobar whose full residence address is
Paseo de España 24, Castelldefels, 08860, Barcelona, Spain

was personally present and did see David R. Busch, Jr. execute the above assignment on the
24th day of February, 2015, and such assignor is personally known to me to be the
person described in such document.

Claudia Valdés E
Signature of Witness

ASSIGNMENT

WHEREAS, I, Ashwin B. Parthasarathy, a citizen of India, residing at 827 Pump House Lane, West Chester, Pennsylvania 19382, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005998 / 14-6924 ("the invention"), assigned application number 62/091,048 filed on December 12, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005998 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 12th day of February, year of 2015.

[Signature]
Signature -- Ashwin B. Parthasarathy

STATEMENT OF NOTARY PUBLIC

STATE OF PA:

: SS

COUNTY OF Philadelphia

On this 12th day of February, year of 2015, before me personally came the above named Ashwin B. Parthasarathy to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 11, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

ASSIGNMENT

WHEREAS, I, Wesley B. Baker, a citizen of United States, residing at 4501 Chester Avenue, #R2, Philadelphia, Pennsylvania 19143, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005998 / 14-6924 ("the invention"), assigned application number 62/091,048 filed on December 12, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005998 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 3 day of February, year of 2015.

Wesley B. Baker
Signature – Wesley B. Baker

STATEMENT OF NOTARY PUBLIC

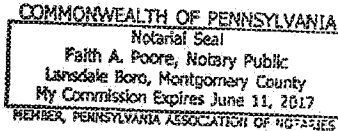
STATE OF PA:

: SS

COUNTY OF Philadelphia

On this 3rd day of February, year of 2015, before me personally came the above named Wesley B. Baker to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public



ASSIGNMENT

WHEREAS, I, Malavika Chandra, a citizen of India, residing at 50 Dinsmore Avenue, Apt. 401, Framingham, Massachusetts 01702, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005998 / 14-6924 ("the invention"), assigned application number 62/091,048 filed on December 12, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005998 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 4th day of February, year of 2015.

M. Chandra
Signature - Malavika Chandra

STATEMENT OF NOTARY PUBLIC

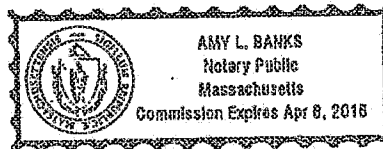
STATE OF Massachusetts :

: SS

COUNTY OF Middlesex :

On this 4th day of February, year of 2015, before me personally came the above named Malavika Chandra to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Amy L. Banks
Notary Public Amy L. Banks



ASSIGNMENT

WHEREAS, I, Rickson C. Mesquita, a citizen of Brazil, residing at R. do Sol, 133 – casa 133, Jd. do Sol, Campinas, SP, 13085, Brazil, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005998 / 14-6924 (“the invention”), assigned application number 62/091,048 filed on December 12, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT (“the subject application”);

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors’ certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005998 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 2nd day of February, year of 2015.

Rickson C. Mesquita
Signature -- Rickson C. Mesquita

.....

STATEMENT OF NOTARY PUBLIC

STATE OF PA :

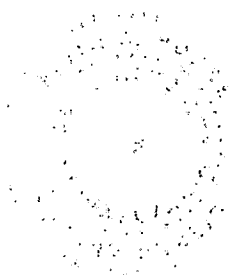
: SS

COUNTY OF Philadelphia :

On this 2nd day of February, year of 2015, before me personally came the above named Rickson C. Mesquita to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 11, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES



ASSIGNMENT

WHEREAS, I, Arjun G. Yodh, a citizen of United States, residing at 231 Valley Road, Merion, Pennsylvania 19066, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.005998 / 14-6924 ("the invention"), assigned application number 62/091,048 filed on December 12, 2014, entitled PROBES AND PRESSURE MODULATION ALGORITHMS FOR REDUCING EXTRATISSUE CONTAMINATION IN HEMODYNAMIC MEASUREMENT ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.005998 / 14-6924

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 12 day of February year of 2015.

Arjun G. Yodh
Signature of Arjun G. Yodh

STATEMENT OF NOTARY PUBLIC

STATE OF PA :

: SS

COUNTY OF Philadelphia

On this 12th day of February, year of 2015, before me personally came the above named Arjun G. Yodh to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 11, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

ASSIGNMENT

WHEREAS, I, David R. Busch, Jr., a citizen of United States, residing at 5034 Hazel Avenue, Philadelphia, Pennsylvania 19143, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.006003 / 14-7005 ("the invention"), assigned application number 62/091,064 filed on December 12, 2014, entitled PRESSURE MODULATION, MOTION DETECTION, INDIVIDUALED GEOMETRY, AND IMPROVED OPTIC-SKIN COUPLING TO IMPROVE LONG TERM CLINICAL MONITORING WITH DIFFUSE OPTICS ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming

DOCKET NO.: 103241.006003 / 14-7005

the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 27th day of Feb, year of 2015.



Signature - David R. Busch, Jr.

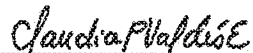
STATEMENT OF WITNESS

SIGNED at Castelldefels Barcelona Spain
(City) (State) (Country)

This 29th day of February, 2015.

I, Claudia Patricia Valdés Escobar whose full residence address is
Paseo de España 29, Castelldefels 08860, Barcelona, Spain

was personally present and did see David R. Busch, Jr. execute the above assignment on the
29th day of February, 2015, and such assignor is personally known to me to be the
person described in such document.



Signature of Witness

ASSIGNMENT

WHEREAS, I, Ashwin B. Parthasarathy, a citizen of India, residing at 827 Pump House Lane, West Chester, Pennsylvania 19382, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.006003 / 14-7005 ("the invention"), assigned application number 62/091,064 filed on December 12, 2014, entitled PRESSURE MODULATION, MOTION DETECTION, INDIVIDUALED GEOMETRY, AND IMPROVED OPTIC-SKIN COUPLING TO IMPROVE LONG TERM CLINICAL MONITORING WITH DIFFUSE OPTICS ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

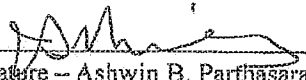
AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming

DOCKET NO.: 103241.006003 / 14-7005

the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 12th day of February, year of 2015.


Signature - Ashwin B. Parthasarathy

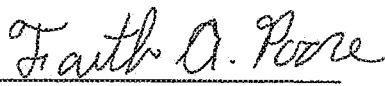
STATEMENT OF NOTARY PUBLIC

STATE OF PA:

: SS

COUNTY OF Philadelphia:

On this 12th day of February, year of 2015, before me personally came the above named Ashwin B. Parthasarathy to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.


Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 13, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

ASSIGNMENT

WHEREAS, I, Wesley B. Baker, a citizen of United States, residing at 4501 Chester Avenue, #R2, Philadelphia, Pennsylvania 19143, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.006003 / 14-7005 ("the invention"), assigned application number 62/091,064 filed on December 12, 2014, entitled PRESSURE MODULATION, MOTION DETECTION, INDIVIDUALED GEOMETRY, AND IMPROVED OPTIC-SKIN COUPLING TO IMPROVE LONG TERM CLINICAL MONITORING WITH DIFFUSE OPTICS ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming

DOCKET NO.: 103241.006003 / 14-7005

the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives, and assigns, to obtain and enforce proper protection for the invention in all countries,

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 3 day of February, year of 2015.

Wesley B. Baker
Signature -- Wesley B. Baker

STATEMENT OF NOTARY PUBLIC

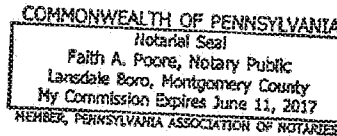
STATE OF PA:

: SS

COUNTY OF Philadelphia:

On this 3rd day of February, year of 2015, before me personally came the above named Wesley B. Baker to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public



ASSIGNMENT

WHEREAS, I, Malavika Chandra, a citizen of India, residing at 50 Dinsmore Avenue, Apt. 401, Framingham, Massachusetts 01702, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.006003 / 14-7005 ("the invention"), assigned application number 62/091,064 filed on December 12, 2014, entitled PRESSURE MODULATION, MOTION DETECTION, INDIVIDUALED GEOMETRY, AND IMPROVED OPTIC-SKIN COUPLING TO IMPROVE LONG TERM CLINICAL MONITORING WITH DIFFUSE OPTICS ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming

DOCKET NO.: 103241.006003 / 14-7005

the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 4th day of February, year of 2015.

[Signature]
Signature – Malavika Chandra

STATEMENT OF NOTARY PUBLIC

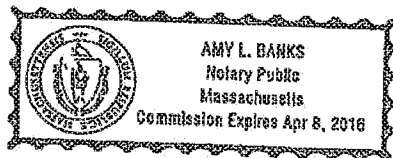
STATE OF Massachusetts :

: SS

COUNTY OF Middlesex :

On this 4th day of February, year of 2015, before me personally came the above named Malavika Chandra to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

[Signature]
Notary Public Amy L. Banks



ASSIGNMENT

WHEREAS, I, Rickson C. Mesquita, a citizen of Brazil, residing at R. do Sol, 133 – casa 133, Jd. Do Sol, Campinas, SP 13085-260, Brazil, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.006003 / 14-7005 (“the invention”), assigned application number 62/091,064 filed on December 12, 2014, entitled PRESSURE MODULATION, MOTION DETECTION, INDIVIDUALED GEOMETRY, AND IMPROVED OPTIC-SKIN COUPLING TO IMPROVE LONG TERM CLINICAL MONITORING WITH DIFFUSE OPTICS (“the subject application”);

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors’ certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming

DOCKET NO.: 103241.006003 / 14-7005

the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 2nd day of February, year of 2015.

Rickson C. Mesquita
Signature -- Rickson C. Mesquita

STATEMENT OF NOTARY PUBLIC

STATE OF PA:

: SS

COUNTY OF Philadelphia:

On this 2nd day of February, year of 2015, before me personally came the above named Rickson C. Mesquita to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Faith A. Poore, Notary Public
Lansdale Boro, Montgomery County
My Commission Expires June 11, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

ASSIGNMENT

WHEREAS, I, Arjun G. Yodh, a citizen of United States, residing at 231 Valley Road, Merion, Pennsylvania 19066, ASSIGNOR, am an inventor of one or more inventions disclosed, described and/or claimed in the application referred to as Docket Number 103241.006003 / 14-7005 ("the invention"), assigned application number 62/091,064 filed on December 12, 2014, entitled PRESSURE MODULATION, MOTION DETECTION, INDIVIDUALED GEOMETRY, AND IMPROVED OPTIC-SKIN COUPLING TO IMPROVE LONG TERM CLINICAL MONITORING WITH DIFFUSE OPTICS ("the subject application");

AND WHEREAS, The Trustees Of The University Of Pennsylvania, ASSIGNEE, having a place of business at 3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104, is desirous of obtaining my entire right, title, and interest in, to, and under the invention:

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the ASSIGNOR, hereby sell, assign, transfer, and set over, unto the ASSIGNEE, its successors, legal representatives, and assigns, my entire right, title, and interest in, to, and under the invention, and all applications for industrial property protection, including without limitation, all applications for patents, utility models, inventors' certificates, and designs that have been filed, and that may hereafter be filed, in any country, that disclose, describe, and/or claim the invention, including, without limitation, the subject application and the priority application, and all extensions, renewals, and reissues of such applications, including all divisions and continuations in whole or in part; all patents granted on such applications in any country, and all extensions, renewals, and reissues of such patents, including all divisions and continuations in whole or in part; the right to file such applications in any country; and the right to claim for such applications in any country the priority rights derived from the priority application and the subject application under the International Convention for the Protection of Industrial Property, the Patent Laws of the United States, any other international agreement or protection, or the domestic laws of any country in which any such application is filed, as may be applicable.

AND I HEREBY covenant and agree that I have full right to convey my entire interest herein assigned, and that I have not executed, and will not execute, any agreement in conflict herewith.

AND I HEREBY further covenant and agree that I will communicate to the ASSIGNEE, its successors, legal representatives, and assigns, any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all disclaimers and all divisional, continuing, reissue, and foreign applications, make all rightful oaths, deliver upon request all papers, documents, affidavits, or other instruments that may be necessary or helpful in the prosecution of any application for industrial property protection describing and/or claiming the invention, and generally do everything possible to aid the ASSIGNEE, its successors, legal

DOCKET NO.: 103241.006003 / 14-7005

representatives, and assigns, to obtain and enforce proper protection for the invention in all countries.

IN TESTIMONY WHEREOF, I have signed my name below on the date indicated above my signature.

Executed this 12 day of February, year of 2015.

Arjun G. Yodh
Signature Arjun G. Yodh

STATEMENT OF NOTARY PUBLIC

STATE OF PA:

: SS

COUNTY OF Philadelphia.

On this 12th day of February, year of 2015, before me personally came the above named Arjun G. Yodh to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Faith A. Poore
Notary Public

