505731499 10/21/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5778310

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
NAOHARU KOBAYASHI	08/21/2019
DJAUDAT IDIYATULLIN	08/21/2019
MICHAEL GARWOOD	08/06/2019

RECEIVING PARTY DATA

Name:	REGENTS OF THE UNIVERSITY OF MINNESOTA
Street Address:	600 MCNAMARA ALUMNI CENTER
Internal Address:	200 OAK STREET SE
City:	MINNEAPOLIS
State/Country:	MINNESOTA
Postal Code:	55455-2020

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16341677

CORRESPONDENCE DATA

Fax Number:

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: 4142775000

Email: pat-dept@quarles.com, chelsea.mcmahon@quarles.com

Correspondent Name: QUARLES & BRADY LLP

Address Line 1: 411 EAST WISCONSIN AVENUE

Address Line 2: SUITE 2400

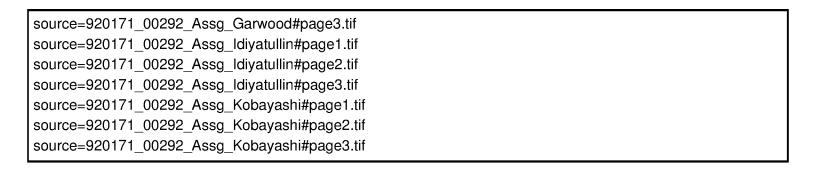
Address Line 4: MILWAUKEE, WISCONSIN 53202

ATTORNEY DOCKET NUMBER:	920171.00292
NAME OF SUBMITTER:	CHELSEA L. MCMAHON
SIGNATURE:	/Chelsea L. McMahon/
DATE SIGNED:	10/21/2019

Total Attachments: 9

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PATENT 505731499 REEL: 050770 FRAME: 0730



PATENT REEL: 050770 FRAME: 0731



University of Minnesota <u>ASSIGNMENT</u>

WHEREAS, I, Michael Garwood, have invented certain new and useful inventions in SYSTEMS AND METHODS FOR STEADY-STATE ECHO MAGNETIC RESONANCE IMAGING, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Provisional application no. 62/407,609 on October 13, 2016; PCT/US2017/056487 on October 13, 2017; and Utility application no. 16/341,677 on April 12, 2019 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto

Attorney Docket Number 920171.00292 UM Case No. 20170013

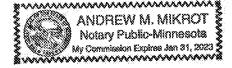
PATENT

(including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Upon said consideration I do hereby covenant and agree with said Assignee, its successors and assigns, that I will not execute in writing or do any act whatsoever conflicting with these presents, and that I or my executors or administrators will at any time upon request, without further or additional consideration, but at the expense of said Assignee, its successors and assigns, execute such additional writings and do such additional acts as said Assignee, its successors and assigns, may deem necessary or desirable to perfect the Assignee's enjoyment of this grant, and render all necessary assistance in making application for and obtaining original, divisional, reissues or extended Letters Patent of the United States, or of any and all foreign countries on said invention, and in enforcing any rights occurring as a result of such application or patents, by giving testimony in any proceedings or transactions involving such applications or patents.

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto August, 2019.	set my hand on this day of
inimalisti de la companya del la companya de la com	Mital Sawood
	Michael Garwood
STATE OF Musika	
COUNTY OF ACCOUNTY	
On this day of	, 2019, before me personally appeared
instrument and acknowledged that s/he executed the	
IN WITNESS WHEREOF, I have hereunto office, the day and year above written.	affixed my official signature with the seal of my
	MM
	Notary Public /



Attorney Docket Number 920171.00292 UM Case No. 20170013

IN WITNESS WHEREOF, I have hereunto 	eset my hand on this 1344 day of ee Regents of the University of Minnesota
REGENTS	Carol Grukoski Chief of Staff and Operations Manager per Presidential Delegation ID_257866
COUNTY OF HENNEPIN On this day of	e same as his/her free act and deed. affixed my official signature with the seal of my
	ANDREW M. MIKROT ANDREW M. MIKROT My Commission Expires Jan 31. ANDREW M. MIKROT Notary Public-Minnesota My Commission Expires Jan 31, 2023

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Attorney Docket Number 920171.00292 UM Case No. 20170013



University of Minnesota <u>ASSIGNMENT</u>

WHEREAS, I, Djaudat Idiyatullin, have invented certain new and useful inventions in SYSTEMS AND METHODS FOR STEADY-STATE ECHO MAGNETIC RESONANCE IMAGING, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Provisional application no. 62/407,609 on October 13, 2016; PCT/US2017/056487 on October 13, 2017; and Utility application no. 16/341,677 on April 12, 2019 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignee, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto

Attorney Docket Number 920171.00292 UM Case No. 20170013

PATENT

(including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Upon said consideration I do hereby covenant and agree with said Assignee, its successors and assigns, that I will not execute in writing or do any act whatsoever conflicting with these presents, and that I or my executors or administrators will at any time upon request, without further or additional consideration, but at the expense of said Assignee, its successors and assigns, execute such additional writings and do such additional acts as said Assignee, its successors and assigns, may deem necessary or desirable to perfect the Assignee's enjoyment of this grant, and render all necessary assistance in making application for and obtaining original, divisional, reissues or extended Letters Patent of the United States, or of any and all foreign countries on said invention, and in enforcing any rights occurring as a result of such application or patents, by giving testimony in any proceedings or transactions involving such applications or patents.

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto	set my hand on thisday of
	Djaudat Idiyatullin
STATE OF Municipal)	
COUNTY OF HANDE	
On this 11 day of August	, 2019, before me personally appeared
Djaudat Idiyatullin, to me known to be the person instrument and acknowledged that s/he executed the	
IN WITNESS WHEREOF, I have hereunto a office, the day and year above written.	affixed my official signature with the seal of my
	Notary Public /
	ANDREW M. MIKROT Notary Public-Minnesota My Commission Expires Jan 31, 2023

Attorney Docket Number 920171.00292 UM Case No. 20170013

IN WITNESS WHEREOF, I have hereunto set my hand on this day of, 2019, on behalf of Assignee Regents of the University of Minnesota accepting this assignment.
REGENTS OF THE UNIVERSITY OF MINNESOTA
/avl/frutusti
Carol Grutkoski S Chief of Staff and Operations Manager
per Presidential Delegation ID 257866
STATE OF MINNESOTA COUNTY OF HENNEPIN On this
Notary Public
ANDREW M. MIKROT ANDREW M. MIKROT Morary Public-Minnesota My Commission Explice Jan 31, 2023

3

Attorney Docket Number 920171.00292 UM Case No. 20170013

PATENT



University of Minnesota <u>ASSIGNMENT</u>

WHEREAS, I, Naoharu Kobayashi, have invented certain new and useful inventions in SYSTEMS AND METHODS FOR STEADY-STATE ECHO MAGNETIC RESONANCE IMAGING, for which applications for Letters Patents of the United States have been made, said applications being filed as follows: Provisional application no. 62/407,609 on October 13, 2016; PCT/US2017/056487 on October 13, 2017; and Utility application no. 16/341,677 on April 12, 2019 (the "Application(s)");

WHEREAS, REGENTS OF THE UNIVERSITY OF MINNESOTA ("Assignee"), having offices at 600 McNamara Alumni Center, 200 Oak Street SE, Minneapolis, Minnesota 55455-2020, is desirous of documenting the acquisition of the entire right, title and interest in and to said invention, said Application(s) and in, to and under any and all Letters Patent to be obtained therefor;

WHEREAS, I hereby acknowledge an obligation of assignment of the inventions disclosed in the Application(s) to Assignee at the time the invention(s) was made;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, and to the extent that I have not done so already via a prior agreement with the Assignee, or if I have already done so via a prior agreement with the Assignee then in confirmation of said prior agreement, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Assignee, its successors and assigns, the entire right, title and interest in and to the inventions set forth hereinabove and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor on the Application(s) including rights of priority under the Paris Convention for the Protection of Industrial Property and the European Patent Convention, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Application(s) and Letters Patent that may be granted, including all rights to claim priority therefrom, and specifically including the right to enforce such Letters Patent in the name of Assignee and to recover damages for past infringement of the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit and use and benefit of its successors and assigns to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

I hereby authorize said Assignce, its successors and assigns, or anyone it may properly designate, to apply for Letters Patent, in its own name if desired, in any and all foreign countries, and additionally to claim the filing date of any the Application(s) and/or otherwise take advantage of all rights of priority created by said Application(s) under any treaty relating thereto

Attorney Docket Number 920171.00292 UM Case No. 20170013

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(including the right to claim priority to said patent application, e.g., under the provisions of the Paris Convention for the Protection of Industrial Property and the European Patent Convention).

Upon said consideration I do hereby covenant and agree with said Assignee, its successors and assigns, that I will not execute in writing or do any act whatsoever conflicting with these presents, and that I or my executors or administrators will at any time upon request, without further or additional consideration, but at the expense of said Assignee, its successors and assigns, execute such additional writings and do such additional acts as said Assignee, its successors and assigns, may deem necessary or desirable to perfect the Assignee's enjoyment of this grant, and render all necessary assistance in making application for and obtaining original, divisional, reissues or extended Letters Patent of the United States, or of any and all foreign countries on said invention, and in enforcing any rights occurring as a result of such application or patents, by giving testimony in any proceedings or transactions involving such applications or patents.

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Assignee in accordance with this instrument.

IN WITNESS WHEREOF, I have here	unto set my hand on this2 /day of
<u>Angust</u> , 2019,	n- Rlah
	Naoharu Kobayashi
STATE OF Moresoln)	
COUNTY OF ACTION	
On this 11 day of Avent	, 2019, before me personally appeared
Naoharu Kobayashi, to me known to be the prinstrument and acknowledged that s/he execute	person described in and who executed the foregoing and the same as his/her free act and deed.
	unto affixed my official signature with the seal of my
office, the day and year above written.	. 48
	Notary Public
	ANDREW M. MIKROT & Notary Public-Minnesota

Attorney Docket Number 920171.00292 UM Case No. 20170013 My Commission Expires Jan 31, 2023

IN WITNESS WHEREOF, I have hereunto set my hare the property of the property o	
REGENTS OF THE UT	NIVERSITY OF MINNESOTA
19	wl Grutustii
Cárol Gr	rutkoski Stast and Operations Manager
	idential Delegation ID_257866
STATE OF MINNESOTA)	
COUNTY OF HENNEPIN)	
On this day of Carol Grutkoski, to me known to be the person described instrument and acknowledged that s/he executed the same as l	
IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.	
	John Marie Contraction of the Co
Notary I	Public /
	ANDREW M. MIKROT Notary Public-Minnesota My Commission Expires Jen 31, 2023

Attorney Docket Number 920171,00292 UM Case No. 20170013

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