

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT2615523

SUBMISSION TYPE:	NEW ASSIGNMENT								
NATURE OF CONVEYANCE:	ASSIGNMENT								
CONVEYING PARTY DATA									
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>PAUL A. BOTTOMLEY</td> <td>05/24/2012</td> </tr> <tr> <td>REFAAT GABR</td> <td>05/24/2012</td> </tr> <tr> <td>YI ZHANG</td> <td>05/24/2012</td> </tr> </tbody> </table>		Name	Execution Date	PAUL A. BOTTOMLEY	05/24/2012	REFAAT GABR	05/24/2012	YI ZHANG	05/24/2012
Name	Execution Date								
PAUL A. BOTTOMLEY	05/24/2012								
REFAAT GABR	05/24/2012								
YI ZHANG	05/24/2012								
RECEIVING PARTY DATA									
Name:	THE JOHNS HOPKINS UNIVERSITY								
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City:	BALTIMORE								
State/Country:	MARYLAND								
Postal Code:	21218								
PROPERTY NUMBERS Total: 1									
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>14006069</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	14006069				
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Application Number:	14006069								
CORRESPONDENCE DATA									
Fax Number:	(202)344-8300								
Email:	jgh02@venable.com, ptomail@venable.com								
<i>Correspondence will be sent via US Mail when the email attempt is unsuccessful.</i>									
Correspondent Name:	HENRY J. DALEY, PH.D./JGH								
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Address Line 2:	VENABLE LLP								
Address Line 4:	WASHINGTON, DISTRICT OF COLUMBIA 20043-9998								
ATTORNEY DOCKET NUMBER:	02240-355118								
NAME OF SUBMITTER:	HENRY J. DALEY, PH.D.								
Signature:	/Henry J. Daley, Ph.D./								
Date:	11/14/2013								
Total Attachments: 3 source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif									

CH \$40.00 14006069

PATENT

Atty. Docket No.:02240-329509

**WORLDWIDE ASSIGNMENT
OF PATENT RIGHTS**

WHEREAS, Paul A. Bottomley, Refaat Gabr and Yi Zhang, hereinafter (collectively) referred to as the Assignor, invented a certain improvement relating to **SYSTEM AND METHOD OF PERFORMING MAGNETIC RESONANCE SPECTROSCOPIC IMAGING** for which Assignor has caused a patent application to be prepared,

- the inventor's declaration for the application being executed concurrently with the execution of this Assignment; the application to be filed in the U.S. Patent and Trademark Office;
- the application having been filed in the U.S. Patent and Trademark Office on March 22, 2011 and given application number 61/466,188;
- the application having been filed under the Patent Cooperation Treaty on March 22, 2012 and given application number PCT/US2012/030176, the United States of America having been designated.

WHEREAS, The Johns Hopkins University, having a principal place of business located at 3400 North Charles Street, Baltimore, Maryland 21218, hereinafter referred to as the Assignee, is desirous of acquiring the entire right, title and interest in and to the invention and the patent application;

NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable consideration paid by Assignee to Assignor, the receipt and sufficiency of which is hereby acknowledged:

Assignor hereby assigns, sells and transfers, and has assigned, sold, and transferred to Assignee, its successors and assigns, the entire and exclusive right, title, and interest for the United States in and to the invention, the application, any application for which priority is claimed, and all applications claiming priority therefrom, including any and all divisions, continuations, in whole or in part, substitutions, renewals, reissues, reexaminations, and all patents which may be granted therefor, and extensions thereof; and Assignor authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such patents, insofar as Assignor's interest is concerned, to Assignee; to have, hold, exercise, and enjoy, with all associated rights, powers, privileges, and advantages, for and during and to the end of the term or terms of such patents when granted, for the sole and exclusive use and benefit of Assignee, its successors and assigns, to the same extent as Assignor would hold and enjoy if this Assignment had not been made.

Assignor further hereby assigns, sells and transfers, and has assigned, sold, and transferred to Assignee, its successors and assigns, the entire right, title and interest in all countries of the world, in and to the invention, the application, any application for which priority is claimed, and all applications claiming priority therefrom, including all national applications, regional applications, divisions, reissues, substitutions, continuations, in whole or in part, re-examinations, and all patents which may be granted therefor, and extensions thereof, including the right to file applications and obtain patents for the invention in its own name, in all countries and including all rights of priority in all countries under the terms of any applicable international convention, insofar as Assignor's interest is concerned; and Assignor hereby authorizes and requests the applicable patent office in each country of the world to issue any and all such patents, insofar as Assignor's interest is concerned, to Assignee; to have, hold, exercise, and enjoy, with all associated rights, powers, privileges, and advantages, for and during and to the end of the term or terms of such patents when granted, for the sole and exclusive use and benefit of Assignee, its successors and assigns, to the same extent as Assignor would hold and enjoy if this Assignment had not been made.

Assignor further acknowledge an obligation of assignment of the invention to Assignee at the time the invention was made, and represents and warrants to Assignee, its successors and assigns, that, except for any right, title, or interest that may have arisen to Assignee under law or that was already transferred to Assignee, Assignor is the sole and lawful owner of the entire right, title and interest in and to the invention and application, without encumbrance, and that Assignor has good and full right and lawful authority to assign the invention and application in the manner set forth here.

Assignor further agrees to execute any and all patent applications, assignments, affidavits, declarations, and any

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WORLDWIDE ASSIGNMENT OF PATENT RIGHTS

other papers in connection therewith necessary to perfect such patent rights, and also agrees, at the request of the Assignee, its successors, or assigns, without charge, to testify in any legal proceedings, sign all lawful papers, make all lawful oaths, and generally do everything possible to aid Assignee, its successors and assigns, to obtain, maintain, enforce, and defend patent protection for the invention.

Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office, or the patent office of another nation, for recordation of this document:

Henry J. Daley / Venable LLP & The Johns Hopkins University and all practitioners at Customer Number 101887

IN WITNESS WHEREOF, each individual collectively referred to as Assignor has caused this Assignment to be executed, effective as of the filing date of the earliest filed application listed above, or the date of invention, whichever came first.

EXECUTED this 24th day of May 2012

ASSIGNOR: Paul A. BOTTOMLY

Signature: [Handwritten Signature]

WITNESS:

Signature: [Handwritten Signature]
Name: Peggy Heaman
Address: 1935 Blacksmith Dr. Merrittsville MD 20647

EXECUTED this 24th day of May 2012

ASSIGNOR: Refaat GABR

Signature: [Handwritten Signature]

WITNESS:

Signature: [Handwritten Signature]
Name: Peggy Heaman
Address: 1935 Blacksmith Dr. Merrittsville MD 20647

ENABLE LLP
ashington, D.C. 20004

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WORLDWIDE ASSIGNMENT
OF PATENT RIGHTS

EXECUTED this 24th day of May 2012

ASSIGNOR: YIZHANG

Signature: [Handwritten Signature]

WITNESS:

Signature: [Handwritten Signature]
Name: Reed Herman
Address: 1900 Blacksmith Dr.
Marionville MO 63451