

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT3908611

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
KANJIMPUREDATHIL MURALIKRISHNA MENON	06/03/2016
RAMKUMAR JEYACHANDRAN	06/02/2016
KAUSTUBH R PATIL	06/06/2016
SUKALYAN DUTTA	06/03/2016
GOKUL PRABHU LOGANATHAN	06/03/2016
DAVID B LURA	06/03/2016
BRYANT J PUDIL	06/03/2016
CHRISTOPHER M HOBOT	06/03/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MEDTRONIC, INC.
<b>Street Address:</b>	710 MEDTRONIC PARKWAY
<b>Internal Address:</b>	LC340
<b>City:</b>	MINNEAPOLIS
<b>State/Country:</b>	MINNESOTA
<b>Postal Code:</b>	55432
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15143487
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(763)505-2530
<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>	
<b>Phone:</b>	763-505-2523
<b>Email:</b>	juanita.traufler@medtronic.com
<b>Correspondent Name:</b>	JUANITA I. TRAUFLER
<b>Address Line 1:</b>	710 MEDTRONIC PARKWAY
<b>Address Line 2:</b>	LC340
<b>Address Line 4:</b>	MINNEAPOLIS, MINNESOTA 55432
<b>ATTORNEY DOCKET NUMBER:</b>	C00013261USI1/MED29111/CI
<b>NAME OF SUBMITTER:</b>	KENNETH J. COLLIER

PATENT

<b>SIGNATURE:</b>	/Kenneth J. Collier/
<b>DATE SIGNED:</b>	06/08/2016
<b>Total Attachments: 9</b> source=efs_Assignment_C00013261US11_060716#page1.tif source=efs_Assignment_C00013261US11_060716#page2.tif source=efs_Assignment_C00013261US11_060716#page3.tif source=efs_Assignment_C00013261US11_060716#page4.tif source=efs_Assignment_C00013261US11_060716#page5.tif source=efs_Assignment_C00013261US11_060716#page6.tif source=efs_Assignment_C00013261US11_060716#page7.tif source=efs_Assignment_C00013261US11_060716#page8.tif source=efs_Assignment_C00013261US11_060716#page9.tif	

ASSIGNMENT

WHEREAS, Kanjimpuredathil Muralikrishna MENON, Ramkumar JEYACHANDRAN, Kaustubh R. PATIL, Sukalyan DUTTA, Gokul Prabhu Loganathan, David B. LURA, Bryant J. PUDIL, and Christopher M. HOBOT, are the inventors of Zirconium Phosphate and Zirconium Oxide Recharging Flow Paths for which they have executed a Continuation application for filing in the United States Patent and Trademark Office preparatory to obtaining Letters Patent of the United States. The invention was disclosed in the following patent applications:

U.S. 15/143,487

Filed April 29, 2016

PCT/US2016/030319

Filed April 29, 2016

WHEREAS, MEDTRONIC, INC. a corporation organized and existing under the laws of the State of Minnesota and having a principal place of business at 710 Medtronic Parkway N.E., Minneapolis, Minnesota 55432 hereinafter referred to as "Corporation," is desirous of acquiring the entire right, title and interest in and to said invention for the United States and for all foreign countries and in and to any and all foreign and domestic Letters Patent which may be granted therefor;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Corporation, its successors and assigns, the entire right, title and interest in and to said invention 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 including my rights under the International Convention for the Protection of Industrial Property, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Letters Patent that may be granted, the same to be held and enjoyed by Corporation for its own use and behalf and use and behalf 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;

AND, for the consideration aforesaid, I materially represent to Corporation, its successors and assigns, that at the time of the execution and delivery of these presents, I am the sole lawful owners of the entire right, title and interest in and to the invention, application and Letters Patent above mentioned, and that the same are unencumbered, and that I have good right and lawful authority to sell and convey the same in the manner herein set forth;

AND, for the consideration aforesaid, I hereby individually covenant and agree to and with Corporation, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns, learned in the law, shall advise that an amendment or division of, or continuation or any continuation-in-part thereof, or any other proceeding in connection with the filing or prosecution of said domestic or foreign patent applications, including interference proceedings, is lawful and desirable, or that a reissue of extension of said Letters Patent is lawful and desirable, I, or my executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for the procurement of valid Letters Patent for said invention, or for the reissue or extension of the same, without charge to Corporation, its successors or assigns, but at Corporation's expense.

IN WITNESS WHEREOF, I have hereunto set my hand on this 3 day of JUNE 2016.

Khyati Bhayana  
Witness

[Signature]  
Kanjimpuredathil Muralikrishna MENON

3 June, 2016  
Date

Piyush Bhattacharya  
Witness

3 JUNE, 2016  
Date

\*\*\*\*\*

OR

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

IN WITNESS WHEREOF, I have hereunto set my hand on this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Kanjimpuredathil Muralikrishna MENON

STATE OF \_\_\_\_\_

ss.

COUNTRY OF \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me, \_\_\_\_\_ Notary Public, personally appeared Kanjimpuredathil Muralikrishna MENON, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

SEAL:

\_\_\_\_\_  
Signature of Notary Public  
My Commission Expires: \_\_\_\_\_

IN WITNESS WHEREOF, I have hereunto set my hand on this 2 day of JUNE 2016.

*Khyati Bhayana*

*J. Ramkumar*  
Ramkumar JEYACHANDRAN

Khyati Bhayana  
Witness

2 JUNE, 2016  
Date

*Piyush Bhagelima*  
Witness  
PIYUSH BHAGELIMA

2 JUNE, 2016  
Date

OR

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

IN WITNESS WHEREOF, I have hereunto set my hand on this \_\_\_\_\_ day of \_\_\_\_\_ 2016.

\_\_\_\_\_  
Ramkumar JEYACHANDRAN

STATE OF \_\_\_\_\_

ss.

COUNTRY OF \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me, \_\_\_\_\_ Notary Public, personally appeared Ramkumar JEYACHANDRAN, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

SEAL:

\_\_\_\_\_  
Signature of Notary Public  
My Commission Expires: \_\_\_\_\_

IN WITNESS WHEREOF, I have hereunto set my hand on this \_\_\_\_\_ day of \_\_\_\_\_ 2016.

\_\_\_\_\_  
Kaustubh R. PATIL

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

\*\*\*\*\*

OR

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

IN WITNESS WHEREOF, I have hereunto set my hand on this \_\_\_\_\_ day of June 6, 2016, 2016.

K. Patil  
\_\_\_\_\_  
Kaustubh R. PATIL

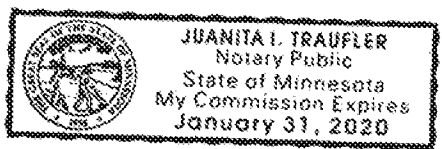
STATE OF Minnesota  
*jit* COUNTY OF Anoka ss.  
COUNTRY OF \_\_\_\_\_

On this 6<sup>th</sup> day of June, 2016, before me, Juanita I. Traufler Notary Public, personally appeared Kaustubh R. PATIL, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

Juanita I. Traufler  
Signature of Notary Public  
My Commission Expires: Jan. 31, 2020

SEAL:



IN WITNESS WHEREOF, I have hereunto set my hand on this 3rd day of June 2016.

Khyati Bhayana  
Witness

Sukalyan DUTTA  
Sukalyan DUTTA

5 June 2016  
Date

Riyush Bhageriya  
Witness

3 JUNE, 2016  
Date

\*\*\*\*\*

OR

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

IN WITNESS WHEREOF, I have hereunto set my hand on this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

\_\_\_\_\_  
Sukalyan DUTTA

STATE OF \_\_\_\_\_

ss.

COUNTRY OF \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me, \_\_\_\_\_ Notary Public, personally appeared Sukalyan DUTTA, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

SEAL:

\_\_\_\_\_  
Signature of Notary Public  
My Commission Expires: \_\_\_\_\_

IN WITNESS WHEREOF, I have hereunto set my hand on this 3<sup>rd</sup> day of JUNE 2016.

Khyati Bhayana  
Witness

[Signature]  
Gokul Prabhu Loganathan

3 June, 2016  
Date

[Signature]  
Witness

3 JUNE, 2016  
Date

\*\*\*\*\*

OR

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

IN WITNESS WHEREOF, I have hereunto set my hand on this \_\_\_\_\_ day of \_\_\_\_\_ 2016.

\_\_\_\_\_  
Gokul Prabhu Loganathan

STATE OF \_\_\_\_\_

ss.

COUNTRY OF \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me, \_\_\_\_\_ Notary Public, personally appeared Gokul Prabhu Loganathan, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

SEAL:

\_\_\_\_\_  
Signature of Notary Public  
My Commission Expires: \_\_\_\_\_



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

IN WITNESS WHEREOF, I have hereunto set my hand on this 3 day of June, 2016.

  
David B. LURA

STATE OF Minnesota

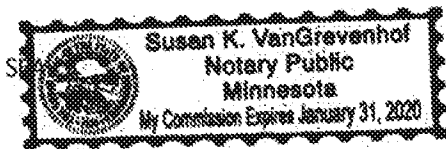
ss.

COUNTY OF Hennepin

On this 3<sup>rd</sup> day of June, 2016, before me, Susan K. VanGrevenhof, Notary Public, personally appeared David B. LURA, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.


IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

  
Signature of Notary Public  
My Commission Expires: January 31, 2020



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

IN WITNESS WHEREOF, I have hereunto set my hand on this 3 day of JUNE, 2016.

  
Bryant J. PUDIL

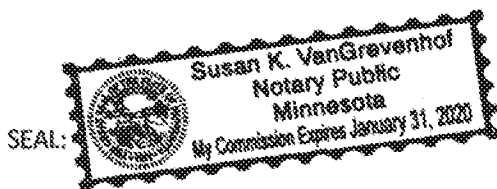
STATE OF Minnesota

ss.

COUNTY OF Hennepin

On this 3<sup>rd</sup> day of June, 2016, before me, Susan K. VanGreevenhof Notary Public, personally appeared Bryant J. PUDIL, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.


IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.



  
Signature of Notary Public  
My Commission Expires: January 31, 2020

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

IN WITNESS WHEREOF, I have hereunto set my hand on this 3<sup>rd</sup> day of June, 2016.

  
Christopher M. HOBOT

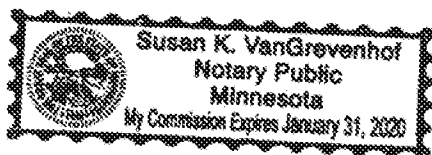
STATE OF Minnesota

ss.

COUNTY OF Hennepin

On this 3<sup>rd</sup> day of June, 2016, before me, Susan K. Van Grevenhof Notary Public, personally appeared Christopher M. HOBOT, personally known to me (or provided to me on the basis of satisfactory evidence) to be the person(s) whose name is subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.



SEAL:

  
Signature of Notary Public  
My Commission Expires: January 31, 2020