PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------------------|----------------|
| Ross Peter Jones | 05/23/2013 |
| Martin Joseph Crnkovich | 04/03/2013 |
| Fei Wang | 04/03/2013 |
| Thomas Irvin Folden | 04/03/2013 |
| Lynn Jensen | 07/30/2013 |
| Shashikant Dattatraya Kalaskar | 04/08/2013 |

RECEIVING PARTY DATA

| Name: | Fresenius Medical Care Holdings, Inc. |
|-----------------|---------------------------------------|
| Street Address: | 929 Winter Street |
| City: | Waltham |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 02541-1457 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13836450 |

CORRESPONDENCE DATA

Fax Number: 8777697945

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: (617) 542-5070 Email: apsi@fr.com Correspondent Name: Michael R. Hamlin

Address Line 1: FISH & RICHARDSON P.C.

Address Line 2: P.O.BOX 1022

Address Line 4: MINNEAPOLIS, MINNESOTA 55440-1022

ATTORNEY DOCKET NUMBER: 18196-0181001

REEL: 031150 FRAME: 0590

502485654

PATENT

| NAME OF SUBMITTER: | Matthew G. Doherty |
|--|----------------------|
| Signature: | /Matthew G. Doherty/ |
| Date: | 09/06/2013 |
| Total Attachments: 7 source=Assign0181#page1.tif source=Assign0181#page2.tif source=Assign0181#page3.tif source=Assign0181#page4.tif source=Assign0181#page5.tif source=Assign0181#page6.tif source=Assign0181#page7.tif | |

PATENT REEL: 031150 FRAME: 0591

ASSIGNMENT

For valuable consideration, we, Ross Peter Jones, of 84 Wulfstan Way, Cambridge, United Kingdom CB1 8 QH; Martin Joseph Crnkovich, of 3436 Cassena Drive, Walnut Creek, CA 94598; Fei Wang, of 1283 Kestrel Court, Concord, CA 94521, Thomas Irvin Folden, of 155 Erselia Trail, Alamo, CA 94507-1311; Lynn Jensen, of 1355 S. 2500 W., Syracuse, UT 84075; Shashikant Dattatraya Kalaskar, of P.O. Box 6175, Ogden, UT 84402; hereby assign to FRESENIUS MEDICAL CARE HOLDINGS, INC., a corporation of New York, having a place of business at 920 Winter St., Waltham, MA 02451-1457, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are subject of an application for United States Patent signed by us, entitled MEDICAL FLUID SENSORS AND RELATED SYSTEMS, filed March 15, 2013, and assigned U.S. Serial Number 13/836,450, this assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment,

Assignment Page 1 of 7

| | DATE: _ | 23 | MAY | 2013 |
|------------------|---------|-----|-----|-------|
| Ross Peter Jones | | | | |
| | | | | |
| Find Pu | DATE: _ | 23 | MAT | 2013 |
| Witness | | | | |
| Stell | DATE: | 2-3 | man | 2013. |
| Witness | _ | | | |

| Acknowledgment | | | | |
|---|--|--|--|--|
| State of California | | | | |
| County of Conta Costa | | | | |
| On April 3d, 203 before me, Tabret T. Constantently, Notary Public, (insert name and title of the officer) | | | | |
| personally appeared | | | | |
| foregoing paragraph is true and correct. | | | | |
| WITNESS my hand and official seal. TABORA T. CONSTANTENNIA: COMM. #1948000 Notary Public · California & Contra Costa County Signature Signature Signature (Seal) My Comm. Expires Aug. 13, 2015 | | | | |

Fei Wang DATE: 4

| Acknowledgment | | | | |
|---|--|--|--|--|
| State of California | | | | |
| County of Corla Costa. | | | | |
| On April 3rd 2013 before me, Tabroa T. Constantenning, Notara Riblic, (insert name and title of the officer) | | | | |
| personally appeared <u>Fig. 1. Dava</u> , who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) yare subscribed to the within instrument and acknowledged to me that fill/she/they executed the same in fill/her/their authorized capacity(ies), and that by fill/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument. | | | | |
| I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct. | | | | |
| WITNESS my hand and official seal. TABORA T. CONSTANTENNIA, COMM. #1948009 Notary Public - California Contra Costa County My Comm. Expires Aug. 13, 2015 | | | | |
| | | | | |

Attorney Docket No.: 18196-0181001 130017

| Manual Company | DATE: 4/03/2013 | Phomas Irvin Folden | Phomas I

| Acknowledgment | | | | |
|--|--|--|--|--|
| State of California | | | | |
| County of Conta Coda | | | | |
| On April 35th, 2013 before me, Thoma T. Constatantia, Notice Rublic, (insert name and title of the officer) | | | | |
| who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s)(s) are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument. | | | | |
| I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct. | | | | |
| WITNESS my hand and official seal. TABORA T. CONSTANTENNIA COMM. #1948009 2 Notary Public - California Contra Costa County My Comm. Expires Aug. 13, 2015 | | | | |

| 15/1 | DAT | E: 7/30/ | 13 | |
|---|---------------------------|-----------------------|---|----------------------|
| Lynn Jensen | | | | |
| | | | | |
| | | | | |
| State of Utah |) | | | |
| § County of Liber | , i | | | |
| | | | 0,0 | 5 .1. |
| On this day ZO_of _ a notary public, personal | ly appeared / comp | 20 13 , before | me <u>lamela s</u> | lockin ar |
| proved on the basis of sat | distactory evidence to be | me berson(s) a | enose namets) (israic) | |
| subscribed to this instrum hand and official seal, | ient, and acknowledged (| (he/she/they) e | xecuted the same. Wit | ness my |
| mand and official cour, | 2 | | 0-1 | |
| | • | NOTARY I | VE SOOVIN | na- |
| | | 110 21111 4 | | S |
| | | | PAMELA E SPARKMA Notary Public & State of Utal | |
| | • | | Commission # 580690 | L |
| | | | COMM. EXP. 11-17-201 | 3 |

DATE: April 8,2013 Shashikant Dattatraya Kalaskar

State of Utah County of Lacoer

On this day 8 of Opril, in the year 2015, before me tomela Sparkmen a notary public, personally appeared Spanks of Satisfactory evidence to be the person(s) whose name(s) (is/are) subscribed to this instrument, and acknowledged (he/she/they) executed the same. Witness my hand and official seal.

PARIELA E SPARKHAN Notary Public e State of Utali Commission # 500880

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PATENT REEL: 031150 FRAME: 0598