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| PATENT ASSIGNMENT COVER SHEET |
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Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3975615

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| NIPRO CORPORATION | 06/22/2016 |

RECEIVING PARTY DATA

| | |
|------------------------|-----------------|
| Name: | INFRAREDX, INC. |
| Street Address: | 34 THIRD AVENUE |
| City: | BURLINGTON |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 01803 |

PROPERTY NUMBERS Total: 37

| Property Type | Number |
|----------------|---------|
| Patent Number: | 7486985 |
| Patent Number: | 7689268 |
| Patent Number: | 7376456 |
| Patent Number: | 8060187 |
| Patent Number: | 7450241 |
| Patent Number: | 7679754 |
| Patent Number: | 7929145 |
| Patent Number: | 8035819 |
| Patent Number: | 7426410 |
| Patent Number: | 7996069 |
| Patent Number: | 8386023 |
| Patent Number: | 7672713 |
| Patent Number: | 8280495 |
| Patent Number: | 6654630 |
| Patent Number: | 7873406 |
| Patent Number: | 6873868 |
| Patent Number: | 7742805 |
| Patent Number: | 6706004 |
| Patent Number: | 6701181 |
| Patent Number: | 6615062 |

PATENT

| Property Type | Number |
|---------------------|----------|
| Patent Number: | 6949072 |
| Patent Number: | 6904199 |
| Patent Number: | 7616321 |
| Patent Number: | 6895137 |
| Patent Number: | 7292715 |
| Patent Number: | 7310357 |
| Patent Number: | 7313432 |
| Application Number: | 13967905 |
| Patent Number: | 8052605 |
| Application Number: | 12062188 |
| Patent Number: | 7535935 |
| Patent Number: | 6980573 |
| Patent Number: | 7132645 |
| Patent Number: | 7539530 |
| Patent Number: | 8000774 |
| Patent Number: | 8958867 |
| Application Number: | 14621963 |

CORRESPONDENCE DATA

Fax Number: (202)783-6031

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: 202-783-6040

Email: mlucier@rfem.com

Correspondent Name: ROTHWELL, FIGG, ERNST & MANBECK PC

Address Line 1: 607 14TH STREET

Address Line 2: SUITE 800

Address Line 4: WASHINGTON, D.C. 20005

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|--------------------------------|-------------------|
| ATTORNEY DOCKET NUMBER: | 3619-000 |
| NAME OF SUBMITTER: | RICHARD WYDEVEN |
| SIGNATURE: | /Richard Wydeven/ |
| DATE SIGNED: | 07/25/2016 |

Total Attachments: 4

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ASSIGNMENT

WHEREAS, NIPRO CORPORATION, a Japan corporation with principal offices at 3-9-3 Honjo-Nishi, Kita-Ku, Osaka 531-8510, Japan ("ASSIGNOR"), owns, by assignment, all right, title, and interest in the United States Patents and Patent Applications listed on EXHIBIT A of this document (collectively the "Patents"), and any invention(s) claimed therein; and

WHEREAS INFRARED X, INC., a Delaware Corporation with principal offices at 34 Third Avenue, Burlington, MA 01803, United States ("ASSIGNEE"), desires to own ASSIGNOR'S entire right, title, and interest in and to the Patents.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. ASSIGNOR hereby sells, assigns, transfers, and sets over to ASSIGNEE, its lawful successors and assigns, ASSIGNOR'S entire right, title, and interest in and to the Patents, the invention(s) claimed therein, any other patent application(s) directed to the invention(s), and all Letters Patent of the United States that may be granted thereon, and all continuations, reissues, reexaminations, and extensions thereof; and all rights to claim priority on the basis of such application(s), and all applications for Letters Patent that may be filed for the invention(s) in any foreign country and all Letters Patent that may be granted on the invention(s) in any foreign country, and all extensions, renewals, and reissues thereof;
2. ASSIGNOR hereby grants to ASSIGNEE the right to recover damages and all other relief for all infringements of the Patents that have occurred prior to the date of this Assignment with the right to sue for and collect the same, for ASSIGNEE'S own use and enjoyment and for the use and enjoyment of its successors, assigns or other legal representatives, free and clear of all liens, claims, charges, security interests, and other encumbrances;
3. ASSIGNOR covenants that ASSIGNOR has the full right to convey the interest assigned by this Assignment;
4. ASSIGNOR hereby further covenants and agrees that ASSIGNOR, through its officers and employees, will, without further consideration, communicate with ASSIGNEE, its successors and assigns, any facts known to ASSIGNOR and its officers, employees, and agents respecting the Patents and invention(s) and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver all papers that may be necessary or desirable to perfect the title to the Patents and invention(s) in said ASSIGNEE, its successors and assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths, and generally do everything possible to aid ASSIGNEE, its successors and assigns, to obtain and enforce proper patent protection for the invention(s) in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by ASSIGNEE, its successors and assigns.

IN TESTIMONY WHEREOF, each party has caused its authorized representative to execute this Assignment.

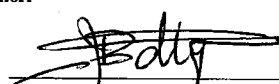
ASSIGNOR:

ASSIGNEE:

NIPRO CORPORATION
Yoshihiko Sano

INFRAREDx, INC
Jason Bottiglieri

By: 

By: 

Title: President and Representative Director

Title: President & CEO

Date: June.22.2016

Date: 7/5/10

EXHIBIT A

List of the assignment

| Country | Application No. | Filing Date YY/MM/DD | Registration No. | Registration Date YY/MM/DD | Title |
|---------|-----------------|-------------------------|------------------|-------------------------------|---|
| 1 US | 10/212,845 | 2002/8/5 | 7,486,985 | 2009/2/3 | NEAR-INFRARED SPECTROSCOPIC ANALYSIS OF BLOOD VESSEL WALLS |
| 2 US | 10/426,750 | 2003/4/30 | 7,889,288 | 2010/3/30 | SPECTROSCOPIC UNWANTED SIGNAL FILTERS FOR DISCRIMINATION OF VULNERABLE PLAQUE AND METHOD THEREFOR |
| 3 US | 10/635,330 | 2003/8/5 | 7,376,456 | 2008/5/20 | NEAR-INFRARED SPECTROSCOPIC ANALYSIS OF BLOOD VESSEL WALLS |
| 4 US | 12/123,890 | 2008/5/20 | 8,060,187 | 2011/11/15 | NEAR-INFRARED SPECTROSCOPIC ANALYSIS OF BLOOD VESSEL WALLS |
| 5 US | 11/241,726 | 2005/9/30 | 7,450,241 | 2008/11/11 | DETECTING VULNERABLE PLAQUE |
| 6 US | 12/247,565 | 2008/10/8 | 7,679,754 | 2010/3/16 | ARTERIAL PROBE FOR OCT |
| 7 US | 12/725,091 | 2010/3/16 | 7,929,145 | 2011/4/19 | ARTERIAL PROBE FOR OCT |
| 8 US | 12/938,020 | 2010/11/2 | 8,035,819 | 2011/10/11 | ARTERIAL PROBE FOR OCT |
| 9 US | 10/456,979 | 2003/6/6 | 7,426,410 | 2008/9/16 | SPECTROSCOPY OF DEEPLY-SCATTERED LIGHT |
| 10 US | 12/210,669 | 2008/9/15 | 7,996,069 | 2011/8/9 | SPECTROSCOPY OF DEEPLY-SCATTERED LIGHT |
| 11 US | 13/084,418 | 2011/4/11 | 8,386,023 | 2013/2/26 | CATHETER PROBE ARRANGEMENT FOR TISSUE ANALYSIS BY RADIANT ENERGY DELIVERY AND RADIANT ENERGY COLLECTION |
| 12 US | 10/175,479 | 2002/6/19 | 7,672,713 | 2010/3/2 | MULTI-CHANNEL CATHETER TIP |
| 13 US | 12/715,945 | 2010/3/2 | 8,280,495 | 2012/10/2 | MULTI-CHANNEL CATHETER TIP |
| 14 US | 09/871,578 | 2001/5/31 | 6,654,630 | 2003/11/25 | APPARATUS AND METHOD FOR THE OPTICAL IMAGING OF TISSUE SAMPLES |
| 15 US | 11/772,887 | 2007/7/3 | 7,873,406 | 2011/1/18 | SPECTROSCOPE FOR RECOVERING LIGHT FROM RE-ENTRANT ZONE OF ARTERIAL WALL |
| 16 US | 10/037,307 | 2001/12/31 | 6,873,868 | 2005/3/29 | MULTI-FIBER CATHETER PROBE ARRANGEMENT FOR TISSUE ANALYSIS OR TREATMENT |
| 17 US | 10/655,671 | 2003/9/5 | 7,742,805 | 2010/6/22 | OPTICAL CATHETER WITH DUAL-STAGE BEAM REDIRECTOR |
| 18 US | 09/871,771 | 2001/5/31 | 6,706,004 | 2004/3/16 | BALLOON CATHETER |
| 19 US | 09/871,770 | 2001/5/31 | 6,701,181 | 2004/3/2 | MULTI-PATH OPTICAL CATHETER |
| 20 US | 09/871,759 | 2001/5/31 | 6,615,062 | 2003/9/2 | REFERENCING OPTICAL CATHETERS |
| 21 US | 10/668,012 | 2003/9/22 | 6,949,072 | 2005/9/27 | DEVICES FOR VULNERABLE PLAQUE DETECTION |
| 22 US | 10/218,939 | 2002/8/14 | 6,904,199 | 2005/6/7 | OPTICAL CATHETER WITH DOUBLE-CLAD FIBER |
| 23 US | 10/615,279 | 2003/7/8 | 7,616,321 | 2009/11/10 | OPTICAL COUPLER FOR ROTATING CATHETER |
| 24 US | 10/164,721 | 2002/6/7 | 6,895,137 | 2005/5/17 | MULTI-CHANNEL OPTICAL COUPLER FOR SPINNING CATHETER |

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| 25 US | 10/457,812 | 2003/6/9 | 7,292,715 | 2007/11/6 | DISPLAY OF DIAGNOSTIC DATA |
| 26 US | 11/071,120 | 2005/3/2 | 7,310,357 | 2007/12/18 | PROVIDING LOW-COHERENCE LIGHT |
| 27 US | 10/269,698 | 2002/10/11 | 7,313,432 | 2007/12/25 | PHASE DISCRIMINATION FOR DETECTION OF VULNERABLE-PLAQUE |
| 28 US | 13/967,905 | 2013/8/15 | - | - | HIGH RESOLUTION INTRAVASCULAR ULTRASOUND IMAGING SYSTEMS AND METHODS |
| 29 US | 12/437,022 | 2009/5/7 | 8,052,605 | 2011/11/8 | MULTIMODAL CATHETER SYSTEM AND METHOD FOR INTRAVASCULAR ANALYSIS |
| 30 US | 12/062,188 | 2008/4/3 | - | - | SYSTEM AND METHOD FOR INTRAVASCULAR STRUCTURAL ANALYSIS COMPENSATION OF CHEMICAL ANALYSIS MODALITY |
| 31 US | 10/259,076 | 2002/9/27 | 7,535,935 | 2009/5/19 | SPECTROSCOPIC CATHETER SYSTEM WITH WIDELY TUNABLE SOURCE AND METHOD OF OPERATION |
| 32 US | 10/314,648 | 2002/12/9 | 6,980,573 | 2006/12/27 | TUNABLE SPECTROSCOPIC SOURCE WITH POWER STABILITY AND METHOD OF OPERATION |
| 33 US | 10/384,342 | 2003/3/7 | 7,132,645 | 2006/11/7 | SYSTEM AND METHOD FOR ASSESSING CATHETER CONNECTION USING RETURN LOSS |
| 34 US | 10/646,271 | 2003/8/22 | 7,539,530 | 2009/5/28 | METHOD AND SYSTEM FOR SPECTRAL EXAMINATION OF VASCULAR WALLS THROUGH BLOOD DURING CARDIAC MOTION |
| 35 US | 11/619,387 | 2007/1/3 | 8,000,774 | 2011/8/16 | METHOD AND SYSTEM FOR INTRA LUMINAL THROMBUS DETECTION |
| 36 US | 13/220,347 | 2011/8/29 | 8,958,867 | 2015/2/17 | DETECTION OF LIPID CORE PLAQUE CAP THICKNESS |
| 37 US | 14/621,963 | 2015/2/13 | - | - | DETECTION OF LIPID CORE PLAQUE CAP THICKNESS |