

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT4852221

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JUNHUA DING	02/27/2018
MICHAEL L'BASSI	02/27/2018
GORDON HILL	02/27/2018
RECEIVING PARTY DATA	
Name:	MKS INSTRUMENTS, INC.
Street Address:	2 TECH DRIVE
Internal Address:	SUITE 201
City:	ANDOVER
State/Country:	MASSACHUSETTS
Postal Code:	01810
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15887447
CORRESPONDENCE DATA	
Fax Number:	(978)341-0136
<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>	
Phone:	(978) 341-0036
Email:	amy.comeau@hbsr.com
Correspondent Name:	JAMES M. SMITH, ESQ.
Address Line 1:	HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
Address Line 2:	P.O. BOX 9133, 530 VIRGINIA ROAD
Address Line 4:	CONCORD, MASSACHUSETTS 01742-9133
ATTORNEY DOCKET NUMBER:	5089.3019-000
NAME OF SUBMITTER:	AMY T. COMEAU
SIGNATURE:	/Amy T. Comeau/
DATE SIGNED:	03/05/2018
Total Attachments: 3	
source=5089.3019-000 Executed Assignment for filing#page1.tif	
source=5089.3019-000 Executed Assignment for filing#page2.tif	

JointASSIGNMENT

WHEREAS, we, **Junhua Ding, Michael L'Bassi, Gordon Hill**, have invented a certain improvement in **Method And Apparatus For Pulse Gas Delivery With Isolation Valves** described in an application for Patent,

- ☐ the specification of which is about to be filed in the United States Patent Office (*use for utility (37 CFR § 1.53(b)) and design filings only*);
- ☐ is about to be filed in the United States Patent Office as a Provisional Application;
- ☒ the specification of which is United States Application No. **15/887,447**, filed **February 2, 2018**;
- ☐ the specification of which is a Patent Cooperation Treaty Application, International Application No. [], filed [], which designates the United States of America [and is assigned United States Application No. []];
- ☐ which was patented under United States Patent No. [].

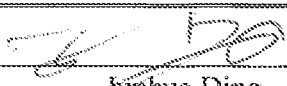

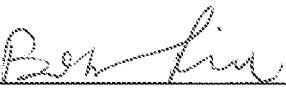
WHEREAS, **MKS Instruments, Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **Commonwealth of Massachusetts**, and having a usual place of business at **2 Tech Drive, Suite 201, Andover, Massachusetts 01810** desires to confirm its interest therein in accordance with agreements duly entered into with us;

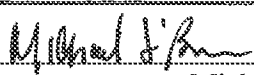
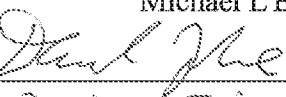
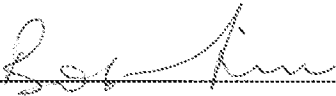
NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, 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 by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for any and all related provisional and nonprovisional, international and national phase applications, including any and all substitution, reissue, divisional, continuation, and continuation-in-part applications, and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein; we hereby expressly authorize the filing of an International Patent Application under the

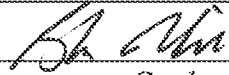
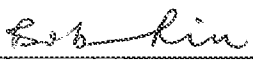
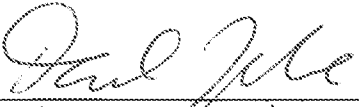
Patent Cooperation Treaty which corresponds to and claims the priority of the above-identified application;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation, continuation-in-part applications, and all related provisional and nonprovisional, international and national phase applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

Inventor  Date 2/27/2018
Kimhua Ding
Witness Signature 
Print Witness Name Daniel Zube
Witness Signature 
Print Witness Name Bob Liu

Inventor  Date 2/27/2018
Michael L'Bassi
Witness Signature 
Print Witness Name Daniel Zube
Witness Signature 
Print Witness Name Bob Liu

Inventor  Date 2/27/18
Gordon Hill
Witness Signature 
Print Witness Name Bob Liu
Witness Signature 
Print Witness Name Daniel Zube