

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

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>Youfan Gu</td> <td>01/06/2012</td> </tr> <tr> <td>David Neumeister</td> <td>01/06/2012</td> </tr> <tr> <td>Kevin Grout</td> <td>01/06/2012</td> </tr> </tbody> </table>	Name	Execution Date	Youfan Gu	01/06/2012	David Neumeister	01/06/2012	Kevin Grout	01/06/2012	
Name	Execution Date								
Youfan Gu	01/06/2012								
David Neumeister	01/06/2012								
Kevin Grout	01/06/2012								
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									
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>12968551</td> </tr> </tbody> </table>	Property Type	Number	Application Number:	12968551					
Property Type	Number								
Application Number:	12968551								
CORRESPONDENCE DATA									
Fax Number:	(970)492-1101								
Phone:	970 492 1100								
Email:	lynetted@patentlegal.com								
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>									
Correspondent Name:	COCHRAN FREUND & YOUNG LLC								
Address Line 1:	2026 Caribou Drive								
Address Line 2:	Suite 201								
Address Line 4:	Ft. Collins, COLORADO 80525								
ATTORNEY DOCKET NUMBER:	MKSI.83US01								
NAME OF SUBMITTER:	Lynette DeBrey-Cota								
Total Attachments: 2 source=MKS83_ASSIGNMENT#page1.tif source=MKS83_ASSIGNMENT#page2.tif									

CH \$40.00 12968551

When recorded please return to:
Cochran Freund & Young LLC
2826 Caribou Drive, Suite 201
Fort Collins, CO 80525

PATENT APPLICATION
DOCKET NO.: MKSL83US01

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each) have agreed and hereby agree to assign to MKS Instruments, Inc. of 2 Tech Drive, Suite 201, Andover, MA 01810 (hereinafter "Assignee"), for good and valuable consideration, receipt of which is hereby acknowledged, and do hereby sell, assign and transfer to Assignee, its successors and assigns, the entire right, title and interest in, to and under an application for Letters Patent of the United States entitled:

TWO-STAGE SLOW-START VALVE APPARATUS AND METHOD

Filing date: DECEMBER 15, 2010

Application No: 12/968,551

and the invention(s) and improvement(s) set forth therein, and any and all provisionals, non-provisionals, continuations, continuations-in-part (C-I-P's), divisionals, and renewals of and substitutes for said application for said Letter Patent, and any and all Letters Patent of the United States and of countries foreign thereto which may be granted thereon or therefor; and any reissues, or reexaminations, or extensions of said Letters Patent. The undersigned (each) also agree to and hereby do, assign and transfer to the assignee the right to claim priority to said patent application(s) as well as to claim priority to any parent or other application(s) to which said patent application(s) claim(s) priority.

I/We additionally authorize Assignee to file applications in my/our name for Letters Patent in any country, to be held and enjoyed by Assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by me/us had this assignment, sale and transfer not been made;

AND I/we hereby covenant that I/we have full right to convey the entire interest herein assigned, and that I/we have not executed and will not execute any agreement in conflict herewith, and I/we further covenant and agree that I/we will, each time a request is made, and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said invention(s) or improvement(s), said application and said Letters Patent, to Assignee, its successors, assigns, nominees or legal representatives, and I/we agree to communicate to Assignee or to its nominee, all known facts respecting said invention(s) or improvement(s), said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers, to execute all disclaimers and divisionals, continuations, C-I-P's, reissue and foreign applications, to make all rightful oaths and declarations, and generally to do everything possible to aid Assignee, its successors, assigns, nominees and legal representatives to obtain and enforce, for its or their own benefit, proper patent protection for said invention(s) or improvement(s) in any and all countries provided the expenses which may be incurred by me/us in lending such cooperation and assistance are paid by Assignee.

AND I/we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to Assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said invention(s) or improvement(s), including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

I/we further authorize and direct Assignee's attorneys to insert the serial number and filing date of said application now identified by the attorney docket number and title set forth above as soon as the same shall have been made known to them by the United States Patent and Trademark Office.

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):

Date Assignment Signed: Jan. 6, 2012

Inventor's Signature (Seal)

Inventor's Typed Name: Youfan Gu

State of Colorado

County of Boulder

} ss.:

Before me this 6th day of Jan, 2012, personally appeared Youfan Gu who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

JULIE A. HESS
Notary Public
State of Colorado

Notary Public

My commission expires: _____

PATENT

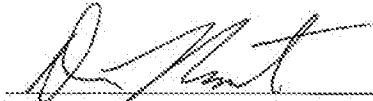
REEL: 027537 FRAME: 0295

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2026 Caribou Drive, Suite 201
Fort Collins, CO 80525

PATENT APPLICATION
DOCKET NO.:

ASSIGNMENT OF PATENT APPLICATION (cont.)

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):



Date Assignment Signed: 01-06-2012

Inventor's Signature (Seal)

Inventor's Typed Name: David Neumeister

State of

Colorado

County of

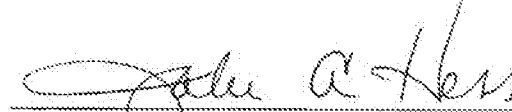
Boulder

ss.:

Before me this 6th day of Jan, 2012, personally appeared David Neumeister who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

JULIE A. HESS
Notary Public
State of Colorado

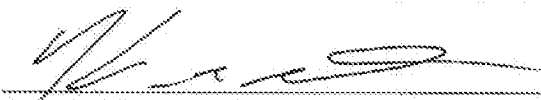
My Commission Expires August 25, 2015



Notary Public

My commission expires: _____

IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):



Date Assignment Signed: 01-06-2012

Inventor's Signature (Seal)

Inventor's Typed Name: Kevin Grout

State of

Colo

County of

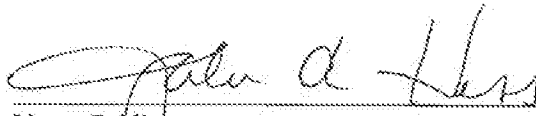
Boulder

ss.:

Before me this 6th day of Jan, 2012, personally appeared Kevin Grout who is personally known or proved to me on the basis of satisfactory evidence to be the person who acknowledged the foregoing instrument of assignment to be his/her free act and deed.

JULIE A. HESS
Notary Public
State of Colorado

My Commission Expires August 25, 2015



Notary Public

My commission expires: _____