

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3858012

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY AGREEMENT
SEQUENCE:	1

CONVEYING PARTY DATA

Name	Execution Date
MKS INSTRUMENTS, INC.	04/29/2016
NEWPORT CORPORATION	04/29/2016

RECEIVING PARTY DATA

Name:	BARCLAYS BANK PLC
Street Address:	745 7TH AVENUE
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10019

PROPERTY NUMBERS Total: 579

Property Type	Number
Patent Number:	8749939
Application Number:	14742402
Patent Number:	9039985
Application Number:	14705439
Application Number:	14723114
Application Number:	14212398
Patent Number:	8882885
Patent Number:	8520413
Application Number:	13314347
Application Number:	14616431
Application Number:	14616089
Patent Number:	8339607
Patent Number:	7502114
Patent Number:	8085401
Patent Number:	7616462
Patent Number:	7569790
Patent Number:	8124906
Patent Number:	8779322

PATENT

Property Type	Number
Patent Number:	8624501
Application Number:	14843412
Patent Number:	6150628
Patent Number:	6486431
Patent Number:	6815633
Patent Number:	6664497
Patent Number:	6559408
Patent Number:	7161112
Patent Number:	6924455
Patent Number:	7166816
Patent Number:	7541558
Patent Number:	6388226
Patent Number:	6552296
Patent Number:	6059517
Patent Number:	6948504
Patent Number:	7264006
Patent Number:	7622037
Patent Number:	6805791
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Patent Number:	7067017
Patent Number:	6872909
Patent Number:	7501600
Patent Number:	7659489
Patent Number:	8692466
Patent Number:	8888982
Patent Number:	7731161
Patent Number:	8448925
Patent Number:	8727323
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Patent Number:	8641978
Patent Number:	8226900
Patent Number:	7892502
Patent Number:	8480862

Property Type	Number
Patent Number:	8053700
Application Number:	14226994
Application Number:	14645837
Patent Number:	9056262
Application Number:	14710255
Application Number:	14990777
Patent Number:	9302912
Application Number:	15056330
Patent Number:	8680777
Patent Number:	7238266
Patent Number:	7969096
Application Number:	14978091
Patent Number:	7620516
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Patent Number:	7725606
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Patent Number:	7437204
Patent Number:	6993404
Patent Number:	8108174
Patent Number:	7630786
Patent Number:	6884147
Patent Number:	8855804
Application Number:	14324540
Patent Number:	8773019
Patent Number:	8791772
Application Number:	14444133
Application Number:	13826571
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Patent Number:	6781317
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Patent Number:	6995570
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Patent Number:	6707255
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Application Number:	62212212
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Property Type	Number
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Application Number:	15025261
Application Number:	14282999
Application Number:	62308863
Application Number:	62256611
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Application Number:	14253087
Application Number:	14559829
Application Number:	14501460
Application Number:	14484210
Application Number:	14147400
Application Number:	13609134

CORRESPONDENCE DATA

Fax Number:

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: 212-318-6824

Email: christinedionne@paulhastings.com

Correspondent Name: CHRISTINE DIONNE C/O PAUL HASTINGS LLP

Address Line 1: 200 PARK AVENUE

Address Line 4: NEW YORK, NEW YORK 10166

ATTORNEY DOCKET NUMBER:	F162680
NAME OF SUBMITTER:	CHRISTINE DIONNE
SIGNATURE:	/Christine Dionne/
DATE SIGNED:	05/04/2016

Total Attachments: 34

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PATENT SECURITY AGREEMENT

Patent Security Agreement, dated as of April 29, 2016 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Patent Security Agreement"), by MKS INSTRUMENTS, INC. and NEWPORT CORPORATION (each, a "Grantor"), in favor of BARCLAYS BANK PLC, in its capacity as collateral agent pursuant to the Credit Agreement (in such capacity, the "Collateral Agent").

WITNESSETH:

WHEREAS, the Grantor is party to that certain Security Agreement dated as of the date hereof (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"), by and among the Borrower, the other Grantors party thereto and the Collateral Agent, in favor of the Collateral Agent, pursuant to which the Grantor is required to execute and deliver to the Collateral Agent this Patent Security Agreement;

NOW, THEREFORE, in consideration of the premises and to induce the Collateral Agent, for the benefit of the Secured Parties, to enter into the Credit Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and with the intent to be legally bound hereby, the Grantor hereby agrees with the Collateral Agent as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, terms defined in the Credit Agreement or the Security Agreement and used herein have the respective meanings assigned thereto in the Credit Agreement or the Security Agreement, in each case, as applicable.

SECTION 2. Grant of Security Interest in Patent Collateral. As security for the payment or performance, as the case may be, in full of the Secured Obligations, including the Guarantees, each Grantor hereby pledges to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, and hereby grants to the Collateral Agent, its successors and assigns, for the benefit of the Secured Parties, a security interest in, all right, title or interest in or to any and all of the following assets and properties now owned or at any time hereafter acquired by such Grantor or in which such Grantor now has or at any time in the future may acquire any right, title or interest:

- (a) all Patents of the Grantor listed on Schedule I attached hereto; and
- (b) all products and Proceeds of any of the foregoing (together with clause (a), collectively, the "Patents").

SECTION 3. The Security Agreement. The security interests granted pursuant to this Patent Security Agreement are granted in conjunction with the security interests granted to the Collateral Agent pursuant to the Security Agreement, and the Grantor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the security interests in the Patents made and granted hereby are more fully set forth in the Security Agreement. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

SECTION 4. Termination. Upon the termination of the Security Agreement in accordance with, or as otherwise required pursuant to, Section 6.11 thereof, the Collateral Agent shall, at the expense of the Grantor, execute, acknowledge, and deliver to the Grantor an instrument in writing in recordable form releasing the liens on and security interests in the applicable Patents under this Patent

Security Agreement and any other documents required to evidence the termination of the Collateral Agent's interests in the applicable Patents.

SECTION 5. GOVERNING LAW; JURISDICTION; VENUE; WAIVER OF JURY TRIAL; CONSENT TO SERVICE OF PROCESS.

(A) **THE TERMS OF SECTION 10.13 OF THE CREDIT AGREEMENT WITH RESPECT TO GOVERNING LAW, SUBMISSION OF JURISDICTION, VENUE AND WAIVER OF JURY TRIAL ARE INCORPORATED HEREIN BY REFERENCE, *MUTATIS MUTANDIS*, AND THE PARTIES HERETO AGREE TO SUCH TERMS.**

(B) **EACH PARTY TO THIS PATENT SECURITY AGREEMENT IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 6.01 OF THE SECURITY AGREEMENT. NOTHING IN THIS PATENT SECURITY AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY TO THIS PATENT SECURITY AGREEMENT TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY LAW.**

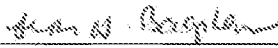
SECTION 6. Waivers; Amendments; Modifications. Neither this Patent Security Agreement nor any provision hereof may be waived, amended or modified except pursuant to an agreement or agreements in writing entered into by the Collateral Agent and the Grantor or Grantors with respect to which such waiver, amendment or modification is to apply, subject to any consent required in accordance with Section 10.01 of the Credit Agreement and subject to Section 6.02 of the Security Agreement.

SECTION 7. Notices; Communications. All communications and notices under this Patent Security Agreement shall be in writing and given as provided in Section 6.01 of the Security Agreement.


SECTION 8. Counterparts; Effectiveness. This Patent Security Agreement may be executed in any number of counterparts, all of which shall constitute one and the same instrument, and any party hereto may execute this Patent Security Agreement by signing and delivering to the other party hereto one or more counterparts. Delivery by facsimile or other electronic communication of an executed counterpart (including portable document format (PDF)) of a signature page to this Patent Security Agreement shall be effective as delivery of an original executed counterpart of this Patent Security Agreement. This Patent Security Agreement shall become effective as to the Grantor when a counterpart hereof executed on behalf of the Grantor shall have been delivered to the Collateral Agent and a counterpart hereof shall have been executed on behalf of the Collateral Agent, and thereafter shall be binding upon the Grantor and the Collateral Agent and their respective permitted successors and assigns, and shall inure to the benefit of the Grantor, the Collateral Agent and the other Secured Parties and their respective permitted successors and assigns, except that the Grantor shall not have the right to assign or transfer its rights or obligations hereunder or any interest herein or in the Collateral (and any such assignment or transfer shall be void) except as expressly contemplated by the Security Agreement or the Credit Agreement.

[Signature Pages Follow]


MKS INSTRUMENTS, INC.,
as a Grantor

By: 
Name: Seth H. Bagshaw
Title: Vice President and CFO

NEWPORT CORPORATION,
as a Grantor

By: 
Name: Seth H. Bagshaw
Title: President

BARCLAYS BANK PLC,
as the Collateral Agent

By: 
Name: Robert Chen
Title: Managing Director

[Signature Page to Term Loan Patent Security Agreement]

PATENT
REEL: 038663 FRAME: 0159

Schedule I
to
PATENT SECURITY AGREEMENT
UNITED STATES PATENTS AND PATENT APPLICATIONS

Patents:

Applications/Patents

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	13/106,920	8,749,939	METHOD AND SYSTEM FOR SHOOT-THROUGH PROTECTION
MKS Instruments, Inc.	14/742402		TOROIDAL PLASMA CHANNEL WITH VARYING CROSS- SECTION AREAS ALONG THE CHANNEL
MKS Instruments, Inc.	13/153649	9039985	OZONE GENERATOR
MKS Instruments, Inc.	14/705439		OZONE GENERATOR
MKS Instruments, Inc.	14/723114		SOLID STATE MICROWAVE GENERATOR AND POWER AMPLIFIER
MKS Instruments, Inc.	14/212,398		Toroidal Plasma Abatement Apparatus
MKS Instruments, Inc.	13/421346	8882885	System to Remove Dissolved Gases Selectively From Liquids
MKS Instruments, Inc.	13/211,892	8,520,413	ADJUSTABLE RESONANT BUCK CONVERTER
MKS Instruments, Inc.	13/314,347		GAS INJECTOR FOR PLASMA APPLICATOR
MKS Instruments, Inc.	14/616431		METASTABLE IGNITION OF PLASMA
MKS Instruments, Inc.	14/616089		MICROPLASMA IGNITION OF PLASMA
MKS Instruments, Inc.	13/117,831	8339607	OZONE CONCENTRATION SENSOR
MKS Instruments, Inc.	10/799331	7502114	OZONE CONCENTRATION SENSOR
MKS Instruments, Inc.	12/397,155	8,085,401	OZONE CONCENTRATION SENSOR
MKS Instruments, Inc.	11/077555	7616462	CONTROL CIRCUIT FOR SWITCHING POWER SUPPLY
MKS Instruments, Inc.	11/269917	7569790	METHOD AND APPARATUS FOR PROCESSING METAL BEARING GASES
MKS Instruments, Inc.	12/511,785	8,124,906	METHOD AND APPARATUS FOR PROCESSING METAL BEARING GASES
MKS Instruments, Inc.	13/336616	8779322	METHOD AND APPARATUS FOR PROCESSING METAL BEARING GASES
MKS Instruments, Inc.	12/963,209	8,624,501	MEASURING AND CONTROLLING PARAMETERS OF A PLASMA GENERATOR
MKS Instruments, Inc.	14/843412		DIRECT THREE PHASE PARALLEL RESONANT INVERTER FOR REACTIVE GAS GENERATOR APPLICATIONS
MKS Instruments, Inc.	08/883281	6150628	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	09/659881	6486431	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	09/804650	6815633	TOROIDAL LOW- FIELD REACTIVE GAS

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
			SOURCE
MKS Instruments, Inc.	10/143070	6664497	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	10/143061	6559408	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	10/689165	7161112	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	09/774165	6924455	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	10/837912	7166816	TOROIDAL LOW FIELD REACTIVE GAS SOURCE-
MKS Instruments, Inc.	11/636891	7,541,558	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	09/502087	6388226	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	09/953763	6552296	TOROIDAL LOW- FIELD REACTIVE GAS SOURCE
MKS Instruments, Inc.	08/999,937	6,059,517	END EFFECTOR ASSEMBLY FOR INCLUSION IN A SYSTEM FOR PRODUCING UNIFORM DEPOSITS ON A WAFER
MKS Instruments, Inc.	10/938,455	6,948,504	OZONATED WATER FLOW AND CONCENTRATION CONTROL APPARATUS AND METHOD
MKS Instruments, Inc.	11/207,989	7,264,006	OZONATED WATER FLOW AND CONCENTRATION CONTROL APPARATUS AND METHOD
MKS Instruments, Inc.	11/835,161	7,622,037	OZONATED WATER FLOW AND CONCENTRATION CONTROL APPARATUS AND METHOD
MKS Instruments, Inc.	10/133237	6805791	OZONATED WATER FLOW AND CONCENTRATION CONTROL APPARATUS AND METHOD
MKS Instruments, Inc.	09/019573	6163006	PERMANENT MAGNET ECR PLASMA SOURCE WITH MAGNETIC FIELD OPTI MIZATION
MKS Instruments, Inc.	08/770316	5869802	PLASMA PRODUCING STRUCTURE
MKS Instruments, Inc.	09/153193	6225592	METHOD AND APPARATUS FOR LAUNCHING MICROWAVE ENERGY INTO A PLASMA PROCESSING CHAMBER
MKS Instruments, Inc.	09/960227	6887339	RF POWER SUPPLY WITH INTEGRATED MATCHING NETWORK
MKS Instruments, Inc.	09/701854	6,786,976	METHOD AND SYSTEM FOR CLEANING SEMICONDUCTOR ELEMENTS
MKS Instruments, Inc.	10/892539	7067017	METHOD AND SYSTEM FOR CLEANING SEMICONDUCTOR ELEMENTS
MKS Instruments, Inc.	10/417408	6872909	TOROIDAL LOW- FIELD REACTIVE GAS AND PLASMA SOURCE HAVING A DIELECTRIC VACUUM VESSELT

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MKS Instruments, Inc.	11/058,620	7,501,600	TOROIDAL LOW- FIELD REACTIVE GAS AND PLASMA SOURCE HAVING A DIELECTRIC VACUUM VESSELT
MKS Instruments, Inc.	11/684,916	7,659,489	TOROIDAL LOW- FIELD REACTIVE GAS AND PLASMA SOURCE HAVING A DIELECTRIC VACUUM VESSELT
MKS Instruments, Inc.	12/394904	8692466	Method and Apparatus of Providing Power To Ignite and Sustain a Plasma in a Reactive
MKS Instruments, Inc.	12/794470	8888982	Gas Generator Reduction of Copper or Trace Metal Contaminants in Plasma Electrolytic Oxidation Coatings
MKS Instruments, Inc.	11/873,776	7731161	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER
MKS Instruments, Inc.	12/792,470	8448925	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER
MKS Instruments, Inc.	13/871,626	8,727,323	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER
MKS Instruments, Inc.	12/738314	9275839	TOROIDAL PLASMA CHAMBER FOR HIGH GAS FLOW RATE PROCESS
MKS Instruments, Inc.	11/268692	7353771	METHOD AND APPARATUS OF PROVIDING POWER TO IGNITE AND SUSTA IN A PLASMA IN A REACTIVE GAS GENERATOR
MKS Instruments, Inc.	13/528,580	8,641,978	POWER SUPPLY INCLUDING TRANSFORMER- LESS HIGH VOLTAGE POWER OSCILLATORS FOR OZONE GENERATION
MKS Instruments, Inc.	11/503,662	8226900	POWER SUPPLY INCLUDING TRANSFORMER- LESS HIGH VOLTAGE POWER OSCILLATORS FOR OZONE GENERATION
MKS Instruments, Inc.	11/482,508	7,892,502	OZONE SYSTEM FOR MULTI-CHAMBER TOOLS
MKS Instruments, Inc.	13/008,641	8480862	OZONE SYSTEM FOR MULTI-CHAMBER TOOLS
MKS Instruments, Inc.	11/541,388	8,053,700	APPLICATORS AND COOLING SYSTEMS FOR A PLASMA DEVICE
MKS Instruments, Inc.	14/226994		MICROWAVE PLASMA APPLICATOR WITH IMPROVED POWER UNIFORMITY
MKS Instruments, Inc.	14/645837		MICROWAVE PLASMA APPLICATOR WITH IMPROVED POWER UNIFORMITY
MKS Instruments, Inc.	13/836842	9056262	PRESSURE-LESS OZONIZED DI- WATER (DI03) RECIRCULATION RECLAIM SYSEM
MKS Instruments, Inc.	14/710255		PRESSURE-LESS OZONIZED DI- WATER (DI03) RECIRCULATION RECLAIM SYSEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	14/990777		METHOD AND APPARATUS FOR A DIRECTLY ELECTRICALLY HEATED FLOW- THROUGH CHEMICAL REACTOR
MKS Instruments, Inc.	13/432415	9302912	COMPACT, CONFIGURABLE POWER SUPPLY FOR ENERGIZING OZONE-PRODUCING CELLS
MKS Instruments, Inc.	15/056330		COMPACT, CONFIGURABLE POWER SUPPLY FOR ENERGIZING OZONE-PRODUCING CELLS
MKS Instruments, Inc.	13/431521	8680777	A VERSATILE ZERO-VOLTAGE SWITCH RESONANT INVERTER FOR INDUSTRIAL DIELECTRIC BARRIER DISCHARGE GENERATOR APPLICATIONS
MKS Instruments, Inc.	10/313,516	7,238,266	METHOD AND APPARATUS FOR FLUORINE GENERATION AND RECIRCULATION
MKS Instruments, Inc.	11/639680	7969096	INDUCTIVELY- COUPLED PLASMA SOURCE
MKS Instruments, Inc.	14/978091		METHOD AND APPARATUS FOR PROCESSING DIELECTRIC MATERIALS
MKS Instruments, Inc.	11/411,005	7,620,516	VERSATILE SEMICONDUCTOR MANUFACTURING CONTROLLER WITH STATISTICALLY REPEATABLE RESPONSE TIMES
MKS Instruments, Inc.	09/847,937	7,072,985	METHOD AND APPARATUS FOR TWO PHASE STRUCTURED MESSAGE TO TAGGED MESSAGE TRANSLATION
MKS Instruments, Inc.	11/479,151	7,725,606	METHOD AND APPARATUS FOR TWO PHASE STRUCTURED MESSAGE TO TAGGED MESSAGE TRANSLATION
MKS Instruments, Inc.	09/935,213	7,200,671	METHOD AND APPARATUS FOR MONITORING HOST TO TOOL COMMUNICATIONS
MKS Instruments, Inc.	11/565209	7437204	METHOD AND APPARATUS FOR MONITORING HOST TO TOOL COMMUNICATIONS
MKS Instruments, Inc.	10/617,355	6,993,404	GRAPHICAL USER INTERFACE WITH PROCESS QUALITY INDICATOR
MKS Instruments, Inc.	12/619,440	8,108,174	VERSATILE SEMICONDUCTOR MANUFACTURING CONTROLLER WITH STATISTICALLY REPEATABLE RESPONSE TIMES
MKS Instruments, Inc.	11/683,218	7,630,786	MANUFACTURING PROCESS END POINT DETECTION
MKS Instruments, Inc.	10/401,336	6884147	METHOD FOR CHEMICAL-MECHANICAL POLISH CONTROL IN SEMICONDUCTOR MANUFACTURING

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	12/947651	8855804	CONTROLLING A DISCRETE-TYPE MANUFACTURING PROCESS WITH A MULTIVARIATE MODEL
MKS Instruments, Inc.	14/324540		Feedback Control and Coherency of Multiple Power Supplies in Radio Frequency Power Delivery Systems for Pulsed Mode Schemes in Thin Film Processing
MKS Instruments, Inc.	13/403656	8773019	Feedback Control and Coherency of Multiple Power Supplies in Radio Frequency Power Delivery Systems
MKS Instruments, Inc.	13/222,014	8,791,772	for Pulsed Mode Schemes in Thin Film Processing LCL HIGH POWER COMBINER
MKS Instruments, Inc.	14/444133		LCL HIGH POWER COMBINER
MKS Instruments, Inc.	13/826,571		SECONDARD PLASMA DETECTION SYSTEMS AND METHODS
MKS Instruments, Inc.	14/953917		ADAPTIVE PERIODIC WAVEFORM CONTROLLER
MKS Instruments, Inc.	14/828597		SUPERVISORY CONTROL OF RADIO FRQUENCY (RF) IMPEDANCE TUNING OPERATION
MKS Instruments, Inc.	09/154235	6204657	TEMPERATURE COMPENSATED CLOSED-LOOP HALL EFFECT CURRENT TRANSFORMER
MKS Instruments, Inc.	10/947397	7304438	METHOD AND APPARATUS FOR PREVENTING INSTABILITIES IN RADIO-FREQUENCY PLASMA PROCESSING
MKS Instruments, Inc.	11/554,996	7,755,300	METHOD AND APPARATUS FOR PREVENTING INSTABILITIES IN RADIO-FREQUENCY PLASMA PROCESSING
MKS Instruments, Inc.	10/623414	7075366	METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER
MKS Instruments, Inc.	11/443884	7248113	METHODS AND SYSTEMS FOR STABILIZING AN
MKS Instruments, Inc.	11/770,493	7639015	AMPLIFIER METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER
MKS Instruments, Inc.	12/647,939	8461842	METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER
MKS Instruments, Inc.	10/642505	6995545	CONTROL SYSTEM FOR A SPUTTERING SYSTEM
MKS Instruments, Inc.	10/642509	6967305	CONTROL OF PLASMA TRANSITIONS IN SPUTTER PROCESSING SYSTEMS
MKS Instruments, Inc.	11/216,424	8,089,026	CONTROL OF PLASMA TRANSITIONS IN SPUTTER PROCESSING SYSTEMS
MKS Instruments, Inc.	11/696569	7336511	POWER SUPPLY CONTROL LOOP WITH MULTIPLE LEVELING MODES
MKS Instruments, Inc.	10/373163	6781317	METHODS AND APPARATUS FOR CALIBRATION AND METROLOGY FOR AN INTEGRATED RF GENERATOR SYSTEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	082645	6608446	METHOD AND APPARATUS FOR RADIO FREQUENCY (RF) METROLOGY
MKS Instruments, Inc.	180273	6995570	METHOD AND APPARATUS FOR DETECTING CONDITIONS IN PARALLELED DC POWER CABLES
MKS Instruments, Inc.	020836	6064559	FIBER OPTIC POSITION SENSOR FOR TUNING CAPACITOR
MKS Instruments, Inc.	10/192196	6707255	MULTIRATE PROCESSING FOR METROLOGY OF PLASMA RF SOURCE
MKS Instruments, Inc.	832476	6587019	DUAL DIRECTIONAL HARMONICS DISSIPATION SYSTEM
MKS Instruments, Inc.	835249	6750711	RF POWER AMPLIFIER STABILITY
MKS Instruments, Inc.	727081	6983215	RF METROLOGY CHARACTERIZATION FOR FIELD INSTALLATION AND SERVICEABILITY FOR THE PLASMA PROCESSING INDUSTRY
MKS Instruments, Inc.	11/164303	9011633	BROADBAND TECHNIQUES TO REDUCE THE EFFECT OR IMPEDANCE MISMATCH IN PLASMA CHAMBERS
MKS Instruments, Inc.	13/764285	9041292	PHASE AND FREQUENCY CONTROL OF A RADIO FREQUENCY GENERATOR FROM AN EXTERNAL SOURCE
MKS Instruments, Inc.	11/108626	7602127	PHASE AND FREQUENCY CONTROL OF A RADIO FREQUENCY GENERATOR FROM AN EXTERNAL SOURCE
MKS Instruments, Inc.	12/552603	8110991	PHASE AND FREQUENCY CONTROL OF A RADIO FREQUENCY GENERATOR
MKS Instruments, Inc.	13/241,650	8,395,322	FROM AN EXTERNAL SOURCE PHASE AND FREQUENCY CONTROL OF A RADIO FREQUENCY GENERATOR FROM AN EXTERNAL SOURCE
MKS Instruments, Inc.	11/115063	8,102,954	FREQUENCY INTERFERENCE DETECTION AND CORRECTION
MKS Instruments, Inc.	13/332459	9294136	FREQUENCY INTERFERENCE DETECTION AND CORRECTION
MKS Instruments, Inc.	10/914,046	7,506,014	TUNABLE MULTI-PHASE OFFSET DIRECT DIGITAL SYNTHESIZER
MKS Instruments, Inc.	11/627,002	7777567	RF POWER AMPLIFIER STABILITY NETWORK
MKS Instruments, Inc.	11/460409	9214909	HIGH RELIABILITY RF GENERATOR ARCHITECTURE
MKS Instruments, Inc.	11/468119	7548741	DUAL LOGARITHMIC AMPLIFIER PHASE- MAGNITUDE DETECTOR
MKS Instruments, Inc.	12/174893		SPUTTERING SYSTEM AND METHOD INCLUDING AN ARC DETECTION SYSTEM
MKS Instruments, Inc.	12/236716	7863996	TUNE RANGE LIMITER
MKS Instruments, Inc.	12/764145	8890537	HARMONIC DERIVED ARC DETECTOR
MKS Instruments, Inc.	11/675974	7728602	HARMONIC DERIVED ARC DETECTOR
MKS Instruments, Inc.	11/763298	8055203	MULTIPOINT VOLTAGE AND CURRENT PROBE SYSTEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	13/241,633	8,190,380	MULTIPOINT VOLTAGE AND CURRENT PROBE SYSTEM
MKS Instruments, Inc.	13/339494	8576013	POWER DISTORTION- BASED SERVO CONTROL SYSTEMS FOR FREQUENCY TUNING RF POWER SOURCES
MKS Instruments, Inc.	14/044547	9041471	POWER DISTORTION- BASED SERVO CONTROL SYSTEMS FOR FREQUENCY TUNING RF POWER SOURCES
MKS Instruments, Inc.	13/803170	8952765	System and Methods of Bimodal Automatic Power and Frequency Tuning of RF Generators
MKS Instruments, Inc.	13/828628	9291649	ON THE ENHANCEMENTS OF PLANAR BASED RF SENSOR TECHNOLOGY
MKS Instruments, Inc.	13/222202	8237501	POWER AMPLIFIER WITH TRANSISTOR INPUT MISMATCHING
MKS Instruments, Inc.	13/648,317	8581597	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS
MKS Instruments, Inc.	12/031171	8264237	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS
MKS Instruments, Inc.	12/175867	8289029	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS
MKS Instruments, Inc.	12/727715	8334700	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS
MKS Instruments, Inc.	12/491538	8659335	Method and System for Controlling Radio Frequency Power
MKS Instruments, Inc.	14/151321	8912835	Method and System for Controlling Radio Frequency Power
MKS Instruments, Inc.	12/760771	8314561	MULTI-CHANNEL RADIO FREQUENCY (RF) GENERATOR
MKS Instruments, Inc.	678993	6524455	SPUTTERING APPARATUS USING PASSIVE ARC CONTROL SYSTEM AND METHOD
MKS Instruments, Inc.	341078	6863789	SPUTTERING APPARATUS USING PASSIVE ARC CONTROL SYSTEM AND METHOD
MKS Instruments, Inc.	044912	7261797	SPUTTERING APPARATUS USING PASSIVE ARC CONTROL SYSTEM AND METHOD

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	686403	6555994	PREDICTIVE CONTROL OF A GENERATOR OUTPUT
MKS Instruments, Inc.	640426	6677828	METHOD OF HOT SWITCHING A PLASMA TUNER
MKS Instruments, Inc.	11/132,551	7,477,711	SYNCHRONOUS UNDERSAMPLING FOR HIGH- FREQUENCY VOLTAGE AND CURRENT MEASUREMENTS
MKS Instruments, Inc.	09/107163	6201395	DUAL MODE GRADIENT COIL SYSTEM
MKS Instruments, Inc.	09/397362	6178102	POWER SUPPLY FOR AMPLIFIERS
MKS Instruments, Inc.	13/368920	8710926	RADIO FREQUENCY POWER DELIVERY SYSTEM
MKS Instruments, Inc.	11/554,979	7764140	RADIO FREQUENCY POWER DELIVERY SYSTEM
MKS Instruments, Inc.	12/786,763	8,633,782	RADIO FREQUENCY POWER DELIVERY SYSTEM
MKS Instruments, Inc.	599608	RE38273	BASEBAND RF VOLTAGE- CURRENT PROBE
MKS Instruments, Inc.	14/837512		FEEDBACK CONTROL BY RF WAVEFORM TAILORING FOR ION ENERGY DISTRIBUTION
MKS Instruments, Inc.	13/834965	9214901	WIDEBAND AFT POWER AMPLIFIER SYSTEMS WITH FREQUENCY- BASED OUTPUT TRANSFORMER IMPEDANCE BALANCING
MKS Instruments, Inc.	14/751586		POWER SUPPLY CIRCUITS INCORPORATING TRANSFORMERS FOR COMBINING OF POWER AMPLIFIER OUTPUTS AND ISOLATION OF LOAD VOLTAGE CLAMPING CIRCUITS
MKS Instruments, Inc.	13/832901	9041480	VIRTUAL RF SENSOR
MKS Instruments, Inc.	14/249972		MULTIPLE RADIO FREQUENCY POWER SUPPLY CONTROL OF FREQUENCY AND PHASE
MKS Instruments, Inc.	13/761955	9136093	SYNCHRONIZATION OF RF PULSING WITH RF METROLOGY, PROCESSING, AND CONTROL
MKS Instruments, Inc.	14/797347		UNIFIED RF POWER DELIVERY SINGLE INPUT, MULTIPLE OUTPUT CONTROL FOR CONTINUOUS AND PULSE MODE OPERATION
MKS Instruments, Inc.	62/212661		PLASMA RF BIAS CANCELLATION SYSTEM
MKS Instruments, Inc.	13/834786		PULSE SYNCHRONIZATION BY MONITORING POWER IN ANOTHER FREQUENCY BAND
MKS Instruments, Inc.	13/761,679	8,781,415	DISTORTION CORRECTION BASED FEEDFORWARD CONTROL SYSTEMS AND METHODS FOR RADIO FREQUENCY POWER SOURCES
MKS Instruments, Inc.	13/663574	8736377	RF PULSE EDGE SHAPING
MKS Instruments, Inc.	12/366274	8040068	Radio Frequency Power Control System

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	12/166,160	7,872,523	RF ENVELOPE PULSING USING PHASE SWITCHING CONTROL OF SWITCH - MODE POWER AMPLIFIERS
MKS Instruments, Inc.	12/421196	8040141	ORTHOGONAL RF VOLTAGE CURRENT SENSOR WITH HIGH DYNAMIC RANGE
MKS Instruments, Inc.	12/483,717	8264238	Method for Calibrating a Broadband Voltage/Current Probe
MKS Instruments, Inc.	09/121136	6046641	PARALLEL HV MOFSET HIGH POWER STABLE AMPLIFIER
MKS Instruments, Inc.	954387	5971591	PROCESS DETECTION SYSTEM FOR PLASMA PROCESS
MKS Instruments, Inc.	703976	6718272	FAST TRANSIENT PROTECTION FOR RF PLASMA GENERATOR
MKS Instruments, Inc.	494589	6970700	POWER DELIVERY SYSTEM
MKS Instruments, Inc.	724136	5810982	PREFERENTIAL SPUTTERING OF INSULATORS FROM CONDUCTIVE TARGETS
MKS Instruments, Inc.	803776	5717293	STRIKE ENHANCEMENT CIRCUIT FOR A PLASMA GENERATOR
MKS Instruments, Inc.	031879	6449568	VI PROBE AND HIGH MATCHING DIRECTIVITY
MKS Instruments, Inc.	194688	6708123	VI PROBE AND HIGH MATCHING DIRECTIVITY
MKS Instruments, Inc.	020835	6020794	RATIOMETRIC AUTOTUNING ALGORITHM FOR RF PLASMA GENERATOR
MKS Instruments, Inc.	12/763640	8344801	VARIABLE CLASS CHARACTERISTIC AMPLIFIER
MKS Instruments, Inc.	763500	6469919	POWER SUPPLIES HAVING PROTECTION CIRCUITS
MKS Instruments, Inc.	227613	6618276	POWER SUPPLIES HAVING PROTECTION CIRCUITS
MKS Instruments, Inc.	657825	6885567	POWER SUPPLIES HAVING PROTECTION CIRCUITS
MKS Instruments, Inc.	760174	7180758	POWER SUPPLIES HAVING PROTECTION CIRCUITS
MKS Instruments, Inc.	619246	7397676	POWER SUPPLIES HAVING PROTECTION CIRCUITS
MKS Instruments, Inc.	827719	6657394	REFLECTION COEFFICIENT PHASE DETECTOR
MKS Instruments, Inc.	827880	6459067	PULSING INTELLIGENT RF MODULATION CONTROLLER
MKS Instruments, Inc.	227157	6700092	PULSING INTELLIGENT RF MODULATION CONTROLLER
MKS Instruments, Inc.	827520	6778921	MODULAR ARCHITECTURE FOR INDUSTRIAL POWER DELIVERY SYSTEM
MKS Instruments, Inc.	080252	6765469	PRINTED CIRCUIT BOARD TRANSFORMER
MKS Instruments, Inc.	778453	6627464	ADAPTIVE PLASMA CHARACTERIZATION SYSTEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	811507	6522121	BROADBAND DESIGN OF A PROBE ANALYSIS SYSTEM
MKS Instruments, Inc.	874439	6559650	RF POWER PROBE HEAD WITH A THERMALLY CONDUCTIVE BUSHING
MKS Instruments, Inc.	255425	6788040	POWER HOLDUP CIRCUIT WITH INCREASED POWER FACTOR
MKS Instruments, Inc.	606206	6879140	POWER HOLDUP CIRCUIT WITH INCREASED POWER FACTOR
MKS Instruments, Inc.	712596	RE39051	FUZZY LOGIC TUNING OF RF MATCHING NETWORK
MKS Instruments, Inc.	827723	6417732	CONTROLLER FOR RF POWER GENERATOR WITH REDUCED CABLE LENGTH SENSITIVITY
MKS Instruments, Inc.	11/340,260	7,467,027	COMPENSATION FOR THERMAL SIPHONING IN MASS FLOW CONTROLLERS
MKS Instruments, Inc.	11/333,142	8,037,896	PRESSURE REGULATION IN REMOTE ZONES
MKS Instruments, Inc.	11/279786	8997791	MULTIPLE- CHANNEL FLOW RATIO CONTROLLER
MKS Instruments, Inc.	11/367,641	7,463,991	MASS FLOW VERIFIER WITH FLOW RESTRICTOR
MKS Instruments, Inc.	11/387,042	7,369,920	PRESSURE CONTROL SYSTEM WITH OPTIMIZED PERFORMANCE
MKS Instruments, Inc.	14/180,063		SYSTEM FOR AND METHOD OF PROVIDING PRESSURE INSENSITIVE SELF VERIFYING MASS FLOW CONTROLLER
MKS Instruments, Inc.	62/212212		METHOD AND APPARATUS FOR PRESSURE- BASED FLOW MEASUREMENT IN NON-CRITICAL FLOW CONDITIONS
MKS Instruments, Inc.	14/304463		GAS DELIVERY METHOD AND SYSTEM INCLUDING A FLOW RATIO CONTROLLER USING ANTISYMMETRIC OPTIMAL CONTROL
MKS Instruments, Inc.	14/209,216		SYSTEM FOR AND METHOD FOR FAST PULSE GAS DELIVERY
MKS Instruments, Inc.	13/354988		SYSTEM FOR AND METHOD OF MONITORING FLOW THROUGH MASS FLOW CONTROLLERS IN REAL TIME
MKS Instruments, Inc.	14/205,030		SYSTEM FOR AND METHOD OF MONITORING FLOW THROUGH MASS FLOW CONTROLLERS IN REAL TIME
MKS Instruments, Inc.	14/194092		PILOT VALVE STRUCTURES AND MASS FLOW CONTROLLER
MKS Instruments, Inc.	09/335,953	6,595,049	THERMAL MASS FLOW SENSOR WITH IMPROVED SENSITIVITY AND RESP O

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MKS Instruments, Inc.	09/539,109	6,446,504	CONSTANT TEMPERATURE GRAIDENT DIFFERENTIAL THERMAL MASS FLOW SENSOR
MKS Instruments, Inc.	09/339,083	6186177	INTEGRATED GAS DELIVERY SYSTEM
MKS Instruments, Inc.	10/603,946	6,955,072	SYSTEM AND METHOD FOR IN- SITU FLOW VERIFICATION AND CALIBRATION
MKS Instruments, Inc.	10/814,973	7,073,771	POROUS VALVE ASSEMBLY
MKS Instruments, Inc.	10/796,723	6,986,359	SYSTEM AND METHOD FOR CONTROLLING PRESSURE IN REMOTE ZONES
MKS Instruments, Inc.	10/796,693	7,072,743	SEMICONDUCTOR MANUFACTURING GAS FLOW DIVIDER SYSTEM AND METHOD
MKS Instruments, Inc.	10/814,970	7,120,542	FLOW MONITORING SYSTEM
MKS Instruments, Inc.	10/943,377	7,000,465	ATTITUDE ERROR SELF- CORRECTION FOR THERMAL SENSORS OF MASS FLOW METERS AND CONTROLLERS
MKS Instruments, Inc.	10/718,511	RE39466	FLOW RATE SENSOR IMPLEMENTING A PLURALITY IF INNER TUBES LOCATED WITHIN A SENSOR TUBE
MKS Instruments, Inc.	10/822,358	7,628,860	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD
MKS Instruments, Inc.	11/586,782	7,829,353	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD
MKS Instruments, Inc.	11/588,042	7,615,120	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD
MKS Instruments, Inc.	10/987,718	7,121,139	THERMAL MASS FLOW RATE SENSOR HAVING FIXED BYPASS RATIO
MKS Instruments, Inc.	11/015,465	7,628,861	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD
MKS Instruments, Inc.	10/987,719	7,000,463	REYNOLDS NUMBER CORRECTION FUNCTION FOR MASS FLOW RATE SENSOR
MKS Instruments, Inc.	11/284,452	7,296,465	VERTICAL MOUNT MASS FLOW SENSOR
MKS Instruments, Inc.	11/090,120	7,174,263	EXTERNAL VOLUME INSENSITIVE FLOW VERIFICATION
MKS Instruments, Inc.	11/111,646	7,621,290	GAS DELIVERY METHOD AND SYSTEM INCLUDING A FLOW RATIO CONTROLLER USING ANTISYMMETRIC OPTIMAL CONTROL
MKS Instruments, Inc.	11/021,912	7,387,135	VALVE ASSEMBLY HAVING RIGID SEATING SURFACES
MKS Instruments, Inc.	09/715,890	6,505,812	SOLENOID VALVE
MKS Instruments, Inc.	09/836,748	6,418,954	SYSTEM AND METHOD FOR DIVIDING FLOW
MKS Instruments, Inc.	09/687,572	6349744B1	MANIFOLD FOR MODULAR GAS BOX SYSTEM
MKS Instruments, Inc.	09/748,472	6631334	PRESSURE- BASED MASS FLOW CONTROLLER SYSTEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	14/265804		PRESSURE- BALANCED CONTROL VALVES
MKS Instruments, Inc.	10/816,412	6,918,295	THERMAL MAN FLOW RATE SENSOR PROVIDING INCREASED RATE OF HEAT TRANSFER TO GAS
MKS Instruments, Inc.	10/988,026	7,107,834	THERMAL MASS FLOW RATE SENSOR INCLUDING BYPASS PASSAGEWAYS AND A SENSOR PASSAGEWAY HAVING SIMILAR ENTRANCE EFFECTS
MKS Instruments, Inc.	10/391,829	6,813,943	METHOD AND APPARATUS FOR CONDITIONING A GAS FLOW TO IMPROVE A RATE OF PRESSURE CHANGE MEASUREMENT
MKS Instruments, Inc.	10/669,065	6,857,323	TWP PHASE FLOW SENSOR USING TOMOGRAPHY TECHNIQUES
MKS Instruments, Inc.	12/508,799	8,793,082	UPSTREAM VOLUME MASS FLOW VERIFICATION SYSTEMS AND METHODS
MKS Instruments, Inc.	12/632514	9127361	METHODS AND APPARATUS FOR MULTIPLE ZONE PRESSURE CONTROLLERS
MKS Instruments, Inc.	12/893554	8997686	SYSTEM FOR AND METHOD OF FAST PULSE GAS DELIVERY
MKS Instruments, Inc.	13/035534		SYSTEM FOR AND METHOD OF FAST PULSE GAS DELIVERY
MKS Instruments, Inc.	12/873,089	8,150,553	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE MASS FLOW CONTROL
MKS Instruments, Inc.	13/425,784	8,738,187	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE MASS FLOW CONTROL
MKS Instruments, Inc.	08/664,141	5693880	HEATER WITH TAPERED HEATER DENSITY FUNCITON FOR USE WITH MASS FLOWMETER
MKS Instruments, Inc.	08/852,430	5824894	IMPROVED MASS FLOWMETER AND LAMINAR FLOW ELEMENTS FOR USE THEREIN
MKS Instruments, Inc.	08/901,217	5966499	SYSTEM FOR DELIVERING A SUBSTANTIALLY CONSTANT VAPOR FLOW T O
MKS Instruments, Inc.	08/682,857	5868159	IMPROVED PRESSURE- BASED MASS FLOW CONTROLLER
MKS Instruments, Inc.	10/178,261	6,868,862	APPARATUS AND METHOD FOR MASS FLOW CONTROLLER WITH A PLURALITY OF CLOSED LOOP CONTROL CODE SETS
MKS Instruments, Inc.	10/440,371	6,868,723	THERMAL ANEMOMETRY MASS FLOW MEASUREMENT APPARATUS AND METH OD
MKS Instruments, Inc.	10/816,084	7,007,707	MASS FLOW RATIO SYSTEM AND METHOD

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	10/037,882	6,766,260	MASS FLOW RATIO SYSTEM AND METHOD
MKS Instruments, Inc.	10/032,273	6,668,642	METHOD AND APPARATUS FOR THERMAL ISOLATION OF THERMAL MASS FLOW SENSOR
MKS Instruments, Inc.	10/032,259	6,668,641	METHOD AND APPARATUS FOR THERMAL DISSIPATION IN A THERMAL MASS FLOW SENSOR
MKS Instruments, Inc.	10/032,258	6,779,394	APPARATUS AND METHOD FOR THERMAL MANAGEMENT OF A MASS FLOW CONTROLLER
MKS Instruments, Inc.	10/178,721	6,712,084	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE MASS FLOW CONTROL
MKS Instruments, Inc.	10/806,974	6,932,098	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE MASS FLOW CONTROL
MKS Instruments, Inc.	11/304,456	7,424,346	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE MASS FLOW CONTROL
MKS Instruments, Inc.	11/950,966	7,809,473	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE MASS FLOW CONTROL
MKS Instruments, Inc.	10/170,861	6,687,635	APPARATUS AND METHOD FOR COMPENSATED SENSOR OUTPUT
MKS Instruments, Inc.	10/256,917	6,725,166	FLOW PICKUP CIRCUIT
MKS Instruments, Inc.	10/178,119	7,136,767	APPARATUS AND METHOD FOR CALIBRATION OF MASS FLOW CONTROLLER
MKS Instruments, Inc.	10/178,378	6,948,508	APPARATUS AND METHOD FOR SELF-CALIBRATION OF MASS FLOW CONTROLLER
MKS Instruments, Inc.	10/178,884	6,810,308	APPARATUS AND METHOD FOR MASS FLOW CONTROLLER WITH NETWORK ACCESS TO DIAGNOSTICS
MKS Instruments, Inc.	10/178,586	7,552,015	APPARATUS AND METHOD FOR DISPLAYING MASS FLOW CONTROLLER PRESSURE
MKS Instruments, Inc.	10/178,810	7,004,191	APPARATUS AND METHOD FOR MASS FLOW CONTROLLER WITH EMBEDDED WEB SERVER
MKS Instruments, Inc.	11/479,092	7,474,968	CRITICAL FLOW BASED MASS FLOW VERIFIER
MKS Instruments, Inc.	11/708,284	7,673,645	GAS DELIVERY METHOD AND SYSTEM INCLUDING A FLOW RATIO CONTROLLER USING A MULTIPLE ANTISYMMETRIC OPTIMAL CONTROL ARRANGEMENT

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	11/769,435	7461549	MASS FLOW VERIFIERS CAPABLE OF PROVIDING DIFFERENT VOLUMES AND RELATED METHODS
MKS Instruments, Inc.	11/635,726	8,079,383	CONTROLLER GAIN SCDULING FOR MASS FLOW CONTROLLERS
MKS Instruments, Inc.	11/651,908	7,706,925	INTEGRATED PRESSURE AND FLOW RATIO CONTROL SYSTEM
MKS Instruments, Inc.	12/050,597	7,757,554	HIGH ACCURACY MASS FLOW VERIFIER WITH MULTIPLE INLETS
MKS Instruments, Inc.	12/273,234	7,891,228	DUAL-MODE MASS FLOW VERIFICATION AND MASS FLOW DELIVERY SYSTEM AND METHOD
MKS Instruments, Inc.	14/269,778		SYSTEM FOR AND METHOD OF MULTIPLE CHANNEL FAST PULSE GAS DELIVERY
MKS Instruments, Inc.	12/689961	8790464	CONTROL FOR AND METHOD OF PULSED GAS DELIVERY
MKS Instruments, Inc.	12/139,633	8,386,083	SYSTEMS AND METHODS FOR UPDATING VALVE CRACKING CURRENT IN MASS FLOW CONTROLLERS
MKS Instruments, Inc.	09/442,712	6,508,631	RADIAL FLOW TURBOMOLECULAR VACUUM PUMP
MKS Instruments, Inc.	10/017,766	6,781,119	ION STAGE SYSTEM
MKS Instruments, Inc.	14/596737		DIGITILIZATION OF ANALOG MFC CONTROL INPUT
MKS Instruments, Inc.	13/626432		Method and Apparatus for Self- Verification of Pressured Based Mass Flow Controllers
MKS Instruments, Inc.	13/271,447	8,689,822	PRESSURE REGULATION IN REMOTE ZONES
MKS Instruments, Inc.	13/344,387		SYSTEM FOR AND METHOD OF FAST PULSE GAS DELIVERY
MKS Instruments, Inc.	13/252363	8849466	METHOD AND APPARATUS FOR MULTIPLE- CHANNEL PULSE GAS DELIVERY SYSTEM
MKS Instruments, Inc.	14/275309	9310294	USE OF A RETRO- REFLECTOR AS A QUANTUM CASCADE LASER (QCL) EXTERNAL CAVITY MIRROR
MKS Instruments, Inc.	12/880,903	8,645,082	MONITORING, DETECTING AND QUANTIFYING CHEMICAL COMPOUNDS IN A SAMPLE
MKS Instruments, Inc.	09/158380	6192287	METHOD AND APPARATUS FOR FAULT DETECTION AND CONTROL
MKS Instruments, Inc.	14/511842		SYSTEMS AND METHODS FOR PRESSURE DIFFERENTIAL MOLECULAR SPECTROSCOPY OF COMPRESSIBLE FLUIDS
MKS Instruments, Inc.	08/202300	7436234	SIGNAL OVERSAMPLING FOR IMPROVED S:N REFLECTOR MOVEMENT SYS TEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	11/074307	7,546,208	METHOD AND APPARATUS OF SIGNAL PROCESSING FOR USE IN SPECTROMETRY USING AN IMPROVED APODIZATION FUNCTION
MKS Instruments, Inc.	08/990834	5900633	SPECTROMETRIC METHOD FOR ANALYSIS OF FILM THICKNESS AND COMPOSITION ON A PATTERNED SAMPLE
MKS Instruments, Inc.	09/156277	6161054	CELL CONTROL METHOD AND APPARATUS
MKS Instruments, Inc.	11/240799	7372573	MULTIGAS MONITORING AND DETECTION SYSTEM
MKS Instruments, Inc.	12/119244	7595887	MULTIGAS MONITORING AND DETECTION SYSTEM
MKS Instruments, Inc.	09/718602	6485872	METHOD AND APPARATUS FOR MEASURING THE COMPOSITION AND OTHER PROPERTIES OF THIN FILMS
MKS Instruments, Inc.	14/637094		METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS
MKS Instruments, Inc.	12/720,542	8462347	METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS
MKS Instruments, Inc.	13/743671	9001335	METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS
MKS Instruments, Inc.	11/943,084	8083359	CORNER CUBE RETROREFLECTOR MOUNT
MKS Instruments, Inc.	14/518974		MULTIPLEX TUNABLE FILTER SPECTROMETER
MKS Instruments, Inc.	12/755980	8896839	MULTIPLEX TUNABLE FILTER SPECTROMETER
MKS Instruments, Inc.	14/753366		SYSTEMS, METHODS, AND APPARATUS FOR OPTICAL HYDROCARBON GAS COMPOSITION MONITORING
MKS Instruments, Inc.	10/273,402	6,938,493	Apparatus and methods for heat loss pressure measurement
MKS Instruments, Inc.	14/582750		IONIZATION GAUGE WITH EMISSION CURRENT AND BIAS POTENTIAL CONTROL
MKS Instruments, Inc.	62/191140		POLYMER COMPOSITE VACUUM COMPONENTS
MKS Instruments, Inc.	14/795729		IONIZATION PRESSURE GAUGE WITH BIAS VOLTAGE AND EMISSION CURRENT CONTROL AND MEASUREMENT
MKS Instruments, Inc.	14/994969		POLYMER COMPOSITE VACUUM COMPONENTS
MKS Instruments, Inc.	13/559347	8928329	COLD CATHODE GAUGE FAST RESPONSE SIGNAL CIRCUIT

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	11/700,303	7,360,429	HIGH- SENSITIVITY PRESSURE ACTUATED SWITCH BASED ON MEMS-FABRICATED SILICON DIAPHRAM AND HAVING ELECTRICALLY ADJUSTABLE SWITCH POINT
MKS Instruments, Inc.	14/072188		PRESSURE SENSOR WITH REAL TIME HEALTH MONITORING AND COMPENSATION
MKS Instruments, Inc.	12/313,778	7,847,559	METHOD AND APPARATUS FOR SHIELDING FEEDTHROUGH PIN INSULATORS IN AN IONIZATION GAUGE OPERATING IN HARSH ENVIRONMENTS
MKS Instruments, Inc.	11/146,721	7,249,516	METHOD OF OPERATING A RESISTIVE HEAT- LOSS PRESSURE SENSOR
MKS Instruments, Inc.	13/051430	8947098	IONIZATION GAUGE WITH EMISSION CURRENT AND BIAS POTENTIAL CONTROL
MKS Instruments, Inc.	14/377449		IONIZATION GAUGE FOR HIGH PRESSURE OPERATION
MKS Instruments, Inc.	14/224927		MICRO-PIRANI VACUUM GAUGES
MKS Instruments, Inc.	08/917,932	6,025,723	Miniature Ionization Gauge Utilizing Multiple Ion Collectors
MKS Instruments, Inc.	12/860,050	8,648,604	IONIZATION GAUGE WITH OPERATIONAL PARAMETERS AND GEOMETRY DESIGNED FOR HIGH PRESSURE OPERATION
MKS Instruments, Inc.	14/174,386		IONIZATION GAUGE WITH OPERATIONAL PARAMETERS AND GEOMETRY DESIGNED FOR HIGH PRESSURE OPERATION
MKS Instruments, Inc.	09/276,985	6,046,456	Miniature Ionization Gauge Utilizing Multiple Ion Collectors
MKS Instruments, Inc.	08/745,419	5,801,535	IONIZATION GAUGE AND METHOD OF USING AND CALIBRATING SAME
MKS Instruments, Inc.	08/897,629	6,023,979	APPARATUS AND METHODS FOR HEAT LOSS PRESSURE MEASUREMENT
MKS Instruments, Inc.	14/101207		INTEGRATED BAFFLE FOR MEMS PRESSURE SENSOR
MKS Instruments, Inc.	13/649476	8887575	SINGLE-SLOT BAFFLE FOR CAPACITANCE PRESSURE SENSOR
MKS Instruments, Inc.	09/998292	6581471	OUTPUT DEVICE FOR PRESSURE TRANSDUCER
MKS Instruments, Inc.	10/095143	7252011	SURFACE AREA DEPOSITION TRAP
MKS Instruments, Inc.	10/127630	6588280	PRESSURE TRANSDUCER WITH COMPENSATION FOR THERMAL TRANSIENT S
MKS Instruments, Inc.	10/440391	6993973	CONTAMINANT DEPOSITION CONTROL BAFFLE FOR A CAPACITIVE PRES SURE TRANSDUCER

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	10/954386	7201057	HIGH- TEMPERATURE REDUCED SIZE MANOMETER
MKS Instruments, Inc.	11/120,396	7,890,220	LOW OVERHEAD CLOSED LOOP CONTROL SYSTEM
MKS Instruments, Inc.	10/960158	7141447	METHOD OF FORMING A SEAL BETWEEN A HOUSING AND DIAPHRAGM OF A CAPACITANCE SENSOR
MKS Instruments, Inc.	11/543606	7316163	METHOD OF FORMING A SEAL BETWEEN A HOUSING AND DIAPHRAGM OF A CAPACITANCE SENSOR
MKS Instruments, Inc.	10/960153	7137301	METHOD AND APPARATUS FOR FORMING A REFERENCE PRESSURE WITHIN A CHAMBER OF A CAPACITANCE SENSOR
MKS Instruments, Inc.	11/542,316	7,624,643	METHOD AND APPARATUS FOR FORMING A REFERENCE PRESSURE WITHIN A CHAMBER OF A CAPACITANCE SENSOR
MKS Instruments, Inc.	11/036775	7204150	TURBO SUMP FOR USE WITH CAPACITIVE PRESSURE SENSOR
MKS Instruments, Inc.	11/011615	7284439	PRESSURE SENSOR FOR DETECTING SMALL PRESSURE DIFFERENCES AND LOW PRESSURES
MKS Instruments, Inc.	11/134001	7389697	PRESSURE SENSOR FOR DETECTING SMALL PRESSURE DIFFERENCES AND LOW PRESSURES
MKS Instruments, Inc.	14/537593		Cold Cathode Ionization Vacuum Gauge
MKS Instruments, Inc.	12/514339	9000364	Electrostatic Ion Trap
MKS Instruments, Inc.	13/508644	9322738	VACUUM QUALITY MEASUREMENT SYSTEM
MKS Instruments, Inc.	14/354227	9040907	Method And Apparatus For Tuning An Electrostatic Ion Trap
MKS Instruments, Inc.	14/384782		Trace Gas Concentration In ART MS Traps
MKS Instruments, Inc.	13/289,142	8,586,918	ELECTROSTATIC ION TRAP
MKS Instruments, Inc.	14/500820		Cold Cathode Ionization Vacuum Gauge
MKS Instruments, Inc.	14/536102		Long Lifetime Cold Cathode Ionization Gauge Design
MKS Instruments, Inc.	14/795706		Feedthrough Leakage Current Detection And Decontamination In Hot Cathode Ionization Gauges
MKS Instruments, Inc.	11/012,871	7,313,966	METHOD AND APPARATUS FOR STORING VACUUM GAUGE CALIBRATION PARAMETERS AND MEASUREMENT DATA ON A VACUUM GAUGE STRUCTURE

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	11/820,629	7,921,719	METHOD AND APPARATUS FOR STORING VACUUM GAUGE CALIBRATION PARAMETERS AND MEASUREMENT DATA ON A VACUUM GAUGE STRUCTURE
MKS Instruments, Inc.	09/993111	6688321	Method and Apparatus For A Flow Regulator Having An Integral Hinge
MKS Instruments, Inc.	12/828,518	8,704,538	IMPROVEMENTS IN CAPACITANCE SENSORS
MKS Instruments, Inc.	08/679,952	5808206	IMPROVED HEATED PRESSURE TRANSDUCER ASSEMBLY
MKS Instruments, Inc.	08/863,547	5932332	IMPROVED HEATED PRESSURE TRANSDUCER
MKS Instruments, Inc.	08/763,020	5811685	FLUID PRESURE SENSOR WITH CONTAMINANT EXCLUSION SYSTEM
MKS Instruments, Inc.	08/835,668	5942692	CAPACITIVE PRESSURE SENSING METHOD AND APPARATUS
MKS Instruments, Inc.	10/852,896	6,945,119	APPARATUS AND METHODS FOR HEAT LOSS PRESSURE MEASUREMENT
MKS Instruments, Inc.	11/180370	7124640	THERMAL MOUNTING PLATE FOR HEATED PRESSURE TRANSDUCER
MKS Instruments, Inc.	11/119604	7000479	HEATED PRESSURE TRANSDUCER
MKS Instruments, Inc.	11/891,167	7,451,654	CONSTANT POWER DISSIPATION IN CAPACITANCE PRESSURE TRANSDUCERS
MKS Instruments, Inc.	722012	5920015	A STABILIZED PRESSURE SENSOR
MKS Instruments, Inc.	666593	6122976	MOUNTING OF PRESSURE SENSOR
MKS Instruments, Inc.	09/377832	6439056	A SENSOR ELEMENT HAVING TEMPERATURE MEASURING MEANS
MKS Instruments, Inc.	08/880035	5911162	CAPACITIVE PRESSURE TRANSDUCER WITH IMPROVED ELECTRODE SUPPORT
MKS Instruments, Inc.	08/887579	5965821	PRESSURE SENSOR
MKS Instruments, Inc.	09/018395	6029525	IMPROVED CAPACITIVE BASED PRESSURE SENSOR DESIGN
MKS Instruments, Inc.	09/475,392	6,227,056	METHOD OF PRESSURE MEASUREMENT
MKS Instruments, Inc.	09/360308	6105436	CAPACITIVE PRESSURE TRANSDUCER WITH IMPROVED ELECTRODE SUPPORT
MKS Instruments, Inc.	09/394,804	6443015	BAFFLE FOR A CAPACITIVE PRESSURE SENSOR
MKS Instruments, Inc.	09/637980	6568274	CAPACITIVE BASED PRESSURE SENSOR DESIGN
MKS Instruments, Inc.	09/685154	6772640	MULTI TEMPERATURE HEATER FOR USE WITH PRESSURE TRANSDUCERS
MKS Instruments, Inc.	09/528,472	6,198,105	Miniature Ionization Gauge Utilizing Multiple Ion Collectors
MKS Instruments, Inc.	11/827,370	7,768,267	AN IONIZATION GAUGE WITH A COLD ELECTRON SOURCE

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	09/750428	6612176	PRESSURE TRANSDUCER ASSEMBLY WITH THERMAL SHIELD
MKS Instruments, Inc.	10/799,446	7,030,619	IONIZATION GAUGE
MKS Instruments, Inc.	12/808983	8686733	IONIZATION GAUGE HAVING ELECTRON MULTIPLIER COLD EMISSION SOURCE
MKS Instruments, Inc.	11/439,875	7,418,869	WIDE RANGE COMBINATION VACUUM GAUGE
MKS Instruments, Inc.	11/488,457	7,429,863	METHOD AND APPARATUS FOR MAINTAINING EMISSION CAPABILITIES OF HOT CATHODES IN HARSH ENVIRONMENTS
MKS Instruments, Inc.	11/354,278	7,295,015	AN IONIZATION GAUGE
MKS Instruments, Inc.	13/018,941	8,333,118	CAPACITIVE PRESSURE SENSOR
MKS Instruments, Inc.	13/248,521	8,561,471	PRESSURE SENSOR WITH IMPROVED ELECTRODE SUPPORT
MKS Instruments, Inc.	14/616017		STRESS RELIEF STRUCTURES FOR SENSORS AND THEIR PACKAGING
MKS Instruments, Inc.	09/377,833	6,735,845	METHOD OF PRODUCING AN INTEGRATED REFERENCE PRESSURE SENSOR ELEMENT
MKS Instruments, Inc.	12/229,271	7,656,165	METHOD AND APPARATUS FOR MAINTAINING EMISSION CAPABILITIES OF HOT CATHODES IN HARSH ENVIRONMENTS
MKS Instruments, Inc.	09/010,484	6,081,121	IONIZATION GAUGE AND METHOD OF USING AND CALIBRATING SAME
MKS Instruments, Inc.	12/100,634	7,757,563	CAPACITANCE MANOMETERS AND METHODS OF MAKING SAME
MKS Instruments, Inc.	11/735,654	7,706,995	CAPACITANCE MANOMETERS AND METHODS RELATING TO AUTO-DRIFT CORRECTION
MKS Instruments, Inc.	11/136610	8679287	METHOD AND APPARATUS FOR PREVENTING ALD REACTANTS FROM DAMAGING VACUUM PUMPS
MKS Instruments, Inc.	11/759,202	7,477,996	Integrated absolute and differential pressure transducer
MKS Instruments, Inc.	12/353,201	7,962,294	Integrated absolute and differential pressure transducer
MKS Instruments, Inc.	12/016,838	7,704,392	MINIMAL RESIDUAL LIQUID RETENTION FILTER HOUSING
MKS Instruments, Inc.	09/250,928	6197119	METHOD AND APPARATUS FOR CONTROLLING POLYMERIZED TEOS BUILD -UP IN VACUUM PUMP LINES
MKS Instruments, Inc.	09/489,374	6238514	Rotating plate heat exchanger
MKS Instruments, Inc.	09/782,105	6,361,607	APPARATUS FOR CONTROLLING POLYMERIZED TEOS BUILD-UP IN VACUUM PUMP LINES
MKS Instruments, Inc.	09/816,639	6488745	TRAP APPARATUS AND METHOD FOR CONDENSABLE BY-PRODUCTS OF DEPOSITION REACTIONS

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	09/815,376	7,076,920	Method of using a combination differential and absolute pressure transducer for controlling a load lock
MKS Instruments, Inc.	08/782,785	5,827,370	METHOD AND APPARATUS FOR REDUCING BUILD-UP OF MATERIAL ON INNER SURFACE OF TUBE DOWNSTREAM FROM A REACTION FURNACE
MKS Instruments, Inc.	09/907,494	6,894,254	Heater control system with combination modular and daisy chained connectivity and optimum allocation of functions betw
MKS Instruments, Inc.	907541	6672171	Combination differential and absolute pressure transducer f or load lock control
MKS Instruments, Inc.	09/821,713	6,562,109	Acceleration assisted particle/gas separation system
MKS Instruments, Inc.	10/196,572	6895178	Vapor delivery system
MKS Instruments, Inc.	29/145,150	D472,881	PIPE HEATER CONTROLLER
MKS Instruments, Inc.	10/205,014	6756785	Pressure controlled degas system for hot cathode ionization pressure gauges
MKS Instruments, Inc.	10/721,817	6909975	Integrated absolute and differential pressure transducer
MKS Instruments, Inc.	11/060,071	7,455,720	METHOD AND APPARATUS FOR PREVENTING PRODUCTS OF TiCl ₄ and NH ₃ OR OTHER FEED GAS REACTIONS FROM DAMAGING VACUUM PUMPS IN TIN OR OTHER DEPOSITION SYSTEM
MKS Instruments, Inc.	14/794550		TRIMMABLE HEATER
MKS Instruments, Inc.	09/847,674	6,790,258	METHOD FOR REMOVING CONDENSABLE ALUMINUM CHLORIDE VAPOR FROM ALUMINUM ETCH EFFLUENT
MKS Instruments, Inc.	12/645,455	7871587	REACTIVE CHEMICAL CONTAINMENT SYSTEM (RCCS)
MKS Instruments, Inc.	14/263779		STREAMLINED HEATER ASSEMBLY WITH FRONT AND INTERMEDIATE DAISY CHAIN POWER INJECTION, SHIELDING, AND WATER RESISTANT FEATURES
MKS Instruments, Inc.	11/278,800	7932480	MULTIPLE HEATER CONTROL SYSTEM WITH EXPALDABLE MODULAR FUNCTIONALITY
MKS Instruments, Inc.	13/048,824	8541716	MULTIPLE HEATER CONTROL SYSTEM WITH EXPANDABLE MODULAR FUNCTIONALITY
MKS Instruments, Inc.	11/566,632	7,693,687	CONTROLLER AND METHOD TO MEDIATE DATA COLLECTION FROM SMART SENSORS FOR FAB APPLICATIONS

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	10/948,085	7,219,255	FAILSAFE SWITCHING OF INTELLIGENT CONTROLLER METHOD AND DEVICE
MKS Instruments, Inc.	11/178,626	7,787,477	ADDRESS- TRANSPARENT DEVICE AND METHOD
MKS Instruments, Inc.	09/179,124	6239429	QUADRUPOLE MASS SPECTROMETER ASSEMBLY
MKS Instruments, Inc.	13/328,765	8415942	A Wide-Dynamic Range Electrometer with a Fast Response
MKS Instruments, Inc.	12/504,652	8278909	A Wide-Dynamic Range Electrometer with a Fast Response
MKS Instruments, Inc.	13/155,890	8,796,620	MASS SPECTROMETRY FOR GAS ANALYSIS WITH A ONE-STAGE CHARGED PARTICLE DEFLECTOR LENS BETWEEN A CHARGED PARTICLE SOURCE AND A CHARGED PARTICLE ANALYZER BOTH OFFSET FROM A CENTRAL AXIS OF THE DEFLECTOR LENS
MKS Instruments, Inc.	13/155,894	8,796,638	MASS SPECTROMETRY FOR A GAS ANALYSIS WITH A TWO-STAGE CHARGED PARTICLE DEFLECTOR LENS BETWEEN A CHARGED PARTICLE SOURCE AND A CHARGED PARTICLE ANALYZER BOTH OFFSET FROM A CENTRAL AXIS OF THE DEFLECTOR LENS
MKS Instruments, Inc.	13/155,896	8450681	MASS SPECTROMETRY FOR GAS ANALYSIS IN WHICH BOTH A CHARGED PARTICLE SOURCE AND A CHARGED PARTICLE ANALYZER ARE OFFSET FROM AN AXIS OF A DEFLECTOR LENS, RESULTING IN REDUCED BASELINE SIGNAL OFFSETS
MKS Instruments, Inc.	11/229153	7151976	MULTIVARIATE CONTROL OF SEMICONDUCTOR PROCESSES
MKS Instruments, Inc.	12/358864	9069345	CONTROLLING A MANUFACTURING PROCESS WITH A MULTIVARIATE MODEL
MKS Instruments, Inc.	13/336,623	8412356	Methods and Apparatus for Automated Predictive Design Space Estimation
MKS Instruments, Inc.	12/466,098	8,086,327	Methods and Apparatus for Automated Predictive Design Space Estimation
MKS Instruments, Inc.	13/775,708	8,577,480	Methods and Apparatus for Automated Predictive Design Space Estimation
MKS Instruments, Inc.	11/481,140	7,809,450	SELF- CORRECTING MULTIVARIATE ANALYSIS FOR USE IN MONITORING DYNAMIC PARAMETERS IN PROCESS ENVIRONMENTS
MKS Instruments, Inc.	14/273669		COMPUTER- IMPLEMENTED SYSTEMS AND METHODS FOR GENERATING

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
			GENERALIZED FRACTIONAL DESIGNS
MKS Instruments, Inc.	12/339,595	8,244,498	HIERARCHICALLY ORGANIZING DATA USING A PARTIAL LEAST SQUARE S ANALYSIS (PLS- TREES)
MKS Instruments, Inc.	12/202,848	8494798	AUTOMATED MODEL BUILDING AND BATCH MODEL BUILDING FOR A MANUFACTURING PROCESS, PROCESS MONITORING, AND FAULT DETECTION
MKS Instruments, Inc.	12/113,613	8,271,103	AUTOMATED MODEL BUILDING AND MODEL UPDATING
MKS Instruments, Inc.	13/039,818	8,725,469	OPTIMIZATION OF DATA PROCESSING PARAMETERS
MKS Instruments, Inc.	13/441,513		MULTIVARIATE MONITORING OF A BATCH MANUFACTURING PROCESS
MKS Instruments, Inc.	14/158,914		MULTIVARIATE PREDICTION OF A BATCH MANUFACTURING PROCESS
MKS Instruments, Inc.	12/611,760	8,763,987	BUTTERFLY VALVE AND SYSTEM EMPLOYING SAME AND METHOD FOR USING SAME FIELD
MKS Instruments, Inc.	14/075163	9314824	POWDER AND DEPOSITION CONTROL IN THROTTLE VALVES
MKS Instruments, Inc.	14/994668		METHOD AND APPARATUS FOR VALVE DEPOSITION CLEANING AND PREVENTION BY PLASMA DISCHARGE
MKS Instruments, Inc.	14/995727		RADIAL SEALING BUTTERFLY VALVE
MKS Instruments, Inc.	10/673,989	7,032,882	VALVE ASSEMBLY HAVING IMPROVED CONDUCTANCE CONTROL
MKS Instruments, Inc.	09/339,084	6,089,537	PENDULUM VALVE ASSEMBLY
MKS Instruments, Inc.	09/339,082	6,161,576	INTEGRATED TURBO PUMP AND CONTROL VALVE SYSTEM
MKS Instruments, Inc.	11/063,075	7,278,444	VALVE ASSEMBLY HAVING IMPROVED PUMP-DOWN PERFORMANCE
MKS Instruments, Inc.	11/278,071	7,643,909	HIGHLY RESPONSIVE MASTER-SLAVE VALVE POSITIONING
MKS Instruments, Inc.	09/715,404	6439255	VALVE FLAPPER WITH DYNAMIC CIRCUMFERENCE SEAL
MKS Instruments, Inc.	09/606,382	6328051B1	DUAL PENDULUM VALVE ASSEMBLY
MKS Instruments, Inc.	09/612,812	6,409,149	DUAL PENDULUM VALVE ASSEMBLY WITH VALVE SEAT COVER
MKS Instruments, Inc.	11/114,388	7,428,913	VALVE ASSEMBLY HAVING ARTICULATING RIGID SEATING SURFACE
MKS Instruments, Inc.	10/369,952	6,863,256	SEAL RING FOR PENDULUM VALVE ASSEMBLY
MKS Instruments, Inc.	62/320718		ACTIVELY COOLED VACUUM ISOLATION VALVE
MKS Instruments, Inc.	14/162514	9200711	METHOD OF TWO-STAGE FLOW CONTROL

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
MKS Instruments, Inc.	14/061553	9206919	CORROSION AND DEPOSITION PROTECTED VALVE APPARATUS AND METHOD
MKS Instruments, Inc.	12/143,106	7,950,294	PREVENTIVE MAINTENANCE DIAGNOSTICS FOR VALVE SYSTEMS
MKS Instruments, Inc.	11/456,044	8172197	FAST-ACTING PNEUMATIC DIAPHRAGM VALVE
MKS Instruments, Inc.	12/194,463	8196893	ISOLATION VALVE WITH CORROSION PROTECTED AND HEAT TRANSFER ENHANCED VALVE ACTUATOR AND CLOSURE APPARATUS AND METHOD
MKS Instruments, Inc.	12/968,551	8,671,987	TWO-STAGE, SLOW-START VALVE APPARATUS AND METHOD
MKS Instruments, Inc.	12/983,162	8241596	TWO-STAGE, SLOW-START VALVE APPARATUS AND METHOD
MKS Instruments, Inc.	13/753019	9133960	FLUID CONTROL VALVES
MKS Instruments, Inc.	10/334,088	6,776,394	PENDULUM VALVE ASSEMBLY
Newport Corporation		9,086,112	INSTRUMENTED PLATFORM FOR VIBRATION SENSITIVE EQUIPMENT
Newport Corporation		9,040,914	OPTICAL DEMULTIPLEXING SYSTEM
Newport Corporation		8,736,825	QUANTUM EFFICIENCY MEASUREMENT SYSTEM AND METHOD OF USE
Newport Corporation		8,902,939	BROADLY TUNABLE OPTICAL PARAMETRIC OSCILLATOR
Newport Corporation		8,942,266	ANGULAR BEAM ADJUSTMENT SYSTEMS AND METHODS FOR LASER SYSTEMS
Newport Corporation		8,928,102	PERFORMANCE OPTICALLY COATED SEMICONDUCTOR DEVICES AND RELATED METHODS OF MANUFACTURE
Newport Corporation		8,857,585	TUNABLE VIBRATION DAMPERS AND METHODS OF MANUFACTURE AND TUNING
Newport Corporation		8,807,515	INSTRUMENTED PLATFORM FOR VIBRATION SENSITIVE EQUIPMENT
Newport Corporation		8,755,133	OPTICAL ADJUSTABLE MOUNTS WITH ABSOLUTE POSITION FEEDBACK
Newport Corporation		8,651,447	METHODS AND DEVICES FOR ACTIVE VIBRATION DAMPING OF AN OPTICAL STRUCTURE
Newport Corporation		8,633,440	OPTICAL DEMULTIPLEXING SYSTEM
Newport Corporation		8,520,327	OPTICAL ADJUSTMENT MOUNTS WITH PIEZOELECTRIC INERTIAL DRIVER
Newport Corporation		8,482,868	OPTICAL ADJUSTMENT MOUNTS WITH ABSOLUTE POSITION FEEDBACK

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation		8,441,748	ADJUSTABLE OPTICAL MOUNT WITH LOCKING DEVICES AND METHODS
Newport Corporation		8,445,299	PERFORMANCE OPTICALLY COATED SEMICONDUCTOR DEVICES AND RELATED METHODS OF MANUFACTURE
Newport Corporation		8,441,630	SYSTEM AND METHOD FOR MONITORING IN-SITU PROCESSING OF SPECIMENS USING COHERENT ANT-STOKES RAMAN MICROSCOPY (CARS)
Newport Corporation		6,517,060	MICRO VIBRATION ISOLATION DEVICE
Newport Corporation		6,520,283	MECHANICAL SIGNAL FILTER
Newport Corporation		8,400,623	MACHINE AND METHOD FOR MEASURING CHARACTERISTICS OF AN OPTICAL SIGNAL
Newport Corporation		8,276,873	INSTRUMENTED PLATFORM FOR VIBRATION SENSITIVE EQUIPMENT
Newport Corporation		8,231,098	METHODS AND DEVICES FOR ACTIVE VIBRATION DAMPING OF AN OPTICAL STRUCTURE
Newport Corporation		8,218,587	AUTOMATED BANDWIDTH/WAVELENGTH ADJUSTMENT SYSTEMS AND METHODS FOR SHORT PULSE LASERS AND OPTICAL AMPLIFIERS
Newport Corporation		8,196,891	INSTRUMENTED PLATFORM FOR VIBRATION SENSITIVE EQUIPMENT
Newport Corporation		8,194,076	AUTO-SCALING STRIP CHART
Newport Corporation		8,072,587	MACHINE AND METHOD FOR MEASURING CHARACTERISTICS OF AN OPTICAL SIGNAL
Newport Corporation		8,004,527	SELF-CENTERING ZOOM BAR GRAPH
Newport Corporation		7,982,980	ADJUSTABLE OPTICAL MOUNT WITH LOCKING DEVICES AND METHODS
Newport Corporation		7,962,046	AUTOMATED DISPERSION COMPENSATION OVER A BROAD WAVELENGTH RANGE FOR COHERENT OPTICAL PULSES
Newport Corporation		7,855,845	OPTICAL CONTROL SYSTEM INCLUDING MOUNT FOR OPTICAL COMPONENT HAVING INDEPENDENT MULTI-AXIAL CONTROL
Newport Corporation		7,751,461	LINEWIDTH-NARROWED EXCIMER LASER CAVITY
Newport Corporation		7,750,608	METHODS AND DEVICES FOR LOW NOISE CURRENT SOURCE WITH DYNAMIC POWER DISTRIBUTION
Newport Corporation		7,688,528	MOUNT FOR OPTICAL COMPONENT HAVING INDEPENDENT MULTI-AXIAL CONTROL

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation		7,653,267	ELECTRO-OPTIC MODULATOR WITH ADJUSTABLE CAVITY SIZE
Newport Corporation		7,528,364	OPTICAL BEAM STEERING AND SAMPLING APPARATUS AND METHOD
Newport Corporation		7,496,271	PRINTED CIRCUIT BOARD WITH RECESSED REGION
Newport Corporation		7,495,849	KINEMATIC OPTICAL MOUNT
Newport Corporation		7,463,397	ELECTRO-OPTIC MODULATOR
Newport Corporation		7,450,300	HIGH RESOLUTION OBJECTIVE LENS ASSEMBLY
Newport Corporation		7,440,176	BI-DIRECTIONALLY PUMPED OPTICAL FIBER LASERS AND AMPLIFIERS
Newport Corporation		7,423,364	SEALED MOVER ASSEMBLY
Newport Corporation		7,400,802	ADJUSTABLE SUPPORT DEVICE FOR OPTICAL COMPONENTS AND METHODS OF USE
Newport Corporation		7,388,890	PIEZOELECTRIC-TUNED EXTERNAL CAVITY LASER
Newport Corporation		7,388,354	METHODS AND DEVICES FOR LOW NOISE CURRENT SOURCE WITH DYNAMIC POWER DISTRIBUTION
Newport Corporation		7,376,525	APPARATUS AND METHOD FOR ESTIMATION OF INITIAL PHASE OF A BRUSHLESS MOTOR
Newport Corporation		7,365,665	PHOTODIODE DIGITIZER WITH FAST GAIN SWITCHING
Newport Corporation		7,330,657	METHOD TO DEMULTIPLEX WAVELENGTHS OF LIGHT
Newport Corporation		7,323,804	LINEAR OUTPUT, CLOSED LOOP MOVER ASSEMBLY
Newport Corporation		7,321,175	LOW COST PRECISION LINEAR ACTUATOR AND CONTROL SYSTEM
Newport Corporation		7,320,455	INSTRUMENTED PLATFORM FOR VIBRATION-SENSITIVE EQUIPMENT
Newport Corporation		7,292,387	METHODS AND SYSTEMS TO ENHANCE MULTIPLE WAVE MIXING
Newport Corporation		7,286,577	LASER WAVELENGTH ACTUATORS
Newport Corporation		7,280,568	LASER COHERENCE CONTROL USING HOMOGENOUS LINEWIDTH BROADENING
Newport Corporation		7,271,523	CLOSED LOOP MOVER ASSEMBLY WITH MEASUREMENT SYSTEM
Newport Corporation		7,235,902	COOLING SYSTEM FOR LINEAR MOTORS
Newport Corporation		7,230,960	TUNABLE EXTERNAL CAVITY LASER WITH ADJUSTABLE CAVITY LENGTH AND MODE-HOP SUPPRESSION
Newport Corporation		7,173,950	LOW-NOISE HIGH POWER SHG LASER SYSTEM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation		7,122,989	MULTIPLE SPEED MOVER ASSEMBLY
Newport Corporation		7,092,644	OPTICAL RECEIVER USING A DUAL GAIN PATH AMPLIFIER SYSTEM
Newport Corporation		7,016,389	DIODE PUMPED LASER WITH INTRACAVITY HARMONICS
Newport Corporation		7,016,107	LOW GAIN REGENERATIVE AMPLIFIER SYSTEM
Newport Corporation		6,996,506	PROCESS AND DEVICE FOR DISPLACING A MOVEABLE UNIT ON A BASE
Newport Corporation		6,966,535	SNUBBER FOR PNEUMATICALLY ISOLATED PLATFORMS
Newport Corporation		6,940,879	EXTERNAL CAVITY LASER WITH DISPERSION COMPENSATION FOR MODE-HOP-FREE TUNING
Newport Corporation		6,930,822	WAVELENGTH LOCKER
Newport Corporation		6,922,419	LONG PULSE VANADATE LASER
Newport Corporation		6,911,763	CLOSED LOOP MOVER ASSEMBLY WITH MEASUREMENT SYSTEM
Newport Corporation		6,891,876	METHOD AND APPLICATION FOR POLARIZATION AND WAVELENGTH INSENSITIVE PUMPING OF SOLID STATE LASERS
Newport Corporation		6,891,601	HIGH RESOLUTION DYNAMIC POSITIONING MECHANISM FOR SPECIMEN INSPECTION AND PROCESSING
Newport Corporation		6,890,474	ALGORITHM FOR INCREASING THE LIFETIME OF CRITICAL COMPONENTS IN A LASER SYSTEM
Newport Corporation		6,853,655	SYSTEM FOR IMPROVED POWER CONTROL
Newport Corporation		6,816,536	METHOD AND APPARATUS FOR IN-SITU PROTECTION OF SENSITIVE OPTICAL MATERIALS
Newport Corporation		6,788,726	EXTERNAL CAVITY LASER WITH HIGH SPECTRAL PURITY OUTPUT
Newport Corporation		6,707,231	METHOD AND APPARATUS FOR CONTROLLING A PIEZO ACTUATOR
Newport Corporation		6,697,390	EXTENDED LIFE HARMONIC GENERATOR
Newport Corporation		6,642,680	MULTI-RATE COMMUTATION OF MOTORS
Newport Corporation		6,619,611	PNEUMATIC VIBRATION ISOLATOR UTILIZING AN ELASTOMERIC ELEMENT FOR ISOLATION AND ATTENUATION OF HORIZONTAL VIBRATION
Newport Corporation		6,614,829	MECHANICALLY GROUNDED TUNABLE LASER
Newport Corporation		6,614,601	GIMBALED OPTICAL MOUNT

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation		6,611,375	SELECTIVELY TUNED ULTRAVIOLET OPTICAL FILTERS AND METHODS OF USE THEREOF
Newport Corporation		6,608,847	TUNABLE LASER WITH SUPPRESSION OF SPONTANEOUS EMISSION
Newport Corporation		6,606,340	CONTINUOUSLY GRATING-TUNED EXTERNAL CAVITY LASER WITH AUTOMATIC SUPPRESSION OF SOURCE SPONTANEOUS EMISSION AND AMPLIFIED SPONTANEOUS EMISSION
Newport Corporation		6,598,545	VIBRATION DAMPER FOR OPTICAL TABLES AND OTHER STRUCTURES
Newport Corporation		6,597,449	REAL TIME PROCESS CONTROL OF OPTICAL COMPONENTS USING A LINEARLY SWEEPED TUNABLE LASER
Newport Corporation		6,587,264	SELECTIVELY TUNED ULTRAVIOLET OPTICAL FILTERS AND METHODS OF USE THEREOF
Newport Corporation		6,568,666	METHOD FOR PROVIDING HIGH VERTICAL DAMPING TO PNEUMATIC ISOLATORS DURING LARGE AMPLITUDE DISTURBANCES OF ISOLATED PAYLOAD
Newport Corporation		6,511,035	ACTIVE VIBRATION ISOLATION SYSTEMS WITH NONLINEAR COMPENSATION TO ACCOUNT FOR ACTUATOR SATURATION
Newport Corporation		6,504,858	LASERS WITH LOW-DOPED GAIN MEDIUM
Newport Corporation		6,476,537	APPARATUS FOR CONTROLLING A PIEZOELECTRIC ASSEMBLY OF A PIEZO ACTUATOR COUPLED WITH A DRIVEN MEMBER
Newport Corporation		6,462,878	DOUBLE CHIRPED MIRROR
Newport Corporation		6,438,461	METHOD AND DEVICE FOR DISPLACING A MOVING BODY ON A BASE MOUNTED ELASTICALLY WITH RESPECT TO THE GROUND
Newport Corporation		6,394,407	PASSIVE VIBRATION ISOLATOR WITH PROFILED SUPPORTS
Newport Corporation		6,389,198	PHOTONIC CRYSTAL FIBER SYSTEM FOR SUB-PICOSECOND PULSES
Newport Corporation		6,301,049	DOUBLE CHIRPED MIRROR
Newport Corporation		6,246,706	LASER WRITING METHOD AND APPARATUS
Newport Corporation		6,198,580	GIMBALLED OPTICAL MOUNT
Newport Corporation		6,185,235	LASERS WITH LOW DOPED GAIN MEDIUM

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation		6,157,503	HIGH PERFORMANCE OPTICAL FILTERS SUITABLE FOR INTENSE ULTRAVIOLET IRRADIANCE APPLICATIONS
Newport Corporation		6,067,197	DIFFRACTION GRATING HAVING ENHANCED BLAZE PERFORMANCE AT TWO WAVELENGTHS
Newport Corporation		5,999,318	REFLECTIVE OVERCOAT FOR REPLICATED DIFFRACTION GRATINGS
Newport Corporation		5,995,521	EXTERNAL CAVITY LASER PIVOT DESIGN
Newport Corporation		5,907,570	DIODE PUMPED LASER USING GAIN MEDIUMS WITH STRONG THERMAL FOCUSING
Newport Corporation		5,852,519	POSITIONABLE MULTI-OPTIC HOLDER
Newport Corporation		5,847,885	WIDE RANGE CYLINDRICAL MIRROR MOUNT WITH RADIAL CLAMP
Newport Corporation		5835513	Q-SWITCHED LASER PROVIDING UV LIGHT
Newport Corporation		5,812,583	DIODE PUMPED, FIBER COUPLED LASER WITH DEPOLARIZED PUMP BEAM
Newport Corporation		5,737,132	FLIP-TYPE MIRROR MOUNT
Newport Corporation		5,694,257	ROTARY BEAMSPLITTER PRISM MOUNT
Newport Corporation		6,741,786	OPTICAL FIBER HOLDER WITH FIBER ENGAGING PROTRUSIONS, AND ASSOCIATED METHODS
Newport Corporation		6,810,161	INTEGRATING CAVITY FOR OPTICAL MEASUREMENTS
Newport Corporation	62/327,362		OPTICAL COMPONENT MOUNT DEVICE AND POST SYSTEM AND METHOD OF USE (added 4/26/16)
Newport Corporation	15/025,261		LED-BASED SOLAR SIMULATOR AND METHOD OF USE
Newport Corporation	14/282,999		QUANTUM EFFICIENCY MEASUREMENT SYSTEM AND METHOD OF USE
Newport Corporation	62/308,863		HOMOGENEOUS LASER LIGHT SOURCE FOR AREA PROCESSING APPLICATIONS
Newport Corporation	62/256,611		HOMOGENEOUS LASER LIGHT SOURCE FOR AREA PROCESSING APPLICATIONS
Newport Corporation	62/294,832		OPTICAL COMPONENT MOUNT DEVICE AND POST SYSTEM AND METHOD OF USE
Newport Corporation	14/764,565		OPTICAL POST MOUNT SYSTEM AND METHOD OF USE

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation	62/249,188		HIGH POWER LASER DIODE TEST SYSTEM
Newport Corporation	62/239,937		HYBRID VIBRATION ISOLATION SYSTEM AND METHOD OF MANUFACTURE
Newport Corporation	62/220,337		OPTICAL COMPONENT MOUNT SYSTEM FOR USE WITH AN OPTICAL SYSTEM
Newport Corporation	14/440,783		SYSTEM AND METHOD FOR DETECTING THE PRESENCE AND TYPE OF CAPACITIVE LOADS
Newport Corporation	14/582,925		SYSTEM AND METHOD FOR MOUNTING AND ALIGNING OPTICAL COMPONENTS USING SINGLE RAIL MOUNTING
Newport Corporation	14/695,009		OPTICAL DEMULTIPLEXING SYSTEM
Newport Corporation	62/184,978		PROGRAMMABLE LIGHT BIAS AMPLIFIER FOR USE IN INTERNAL QUANTUM EFFICIENCY TESTING SYSTEMS
Newport Corporation	14/125,718		SOLAR SIMULATOR AND ULTRAVIOLET FILTER SYSTEM FOR USE IN SOLAR SIMULATORS
Newport Corporation	13/819,695		MICROPROCESSOR-BASED MULTI-JUNCTION PHOTODETECTION SYSTEMS AND METHODS FOR USE
Newport Corporation	14/649,793		DIAMOND-BASED SUPERCONTINUUM GENERATION SYSTEM
Newport Corporation	14/765,074		METHOD AND APPARATUS FOR LASER CUTTING TRANSPARENT AND SEMITRANSSPARENT SUBSTRATES
Newport Corporation	14/791,570		INSTRUMENTED PLATFORM FOR VIBRATION SENSITIVE EQUIPMENT
Newport Corporation	14/182,019		SYSTEM AND METHOD FOR CHARACTERIZING MATERIAL SHRINKAGE USING COHERENT ANTI-STOKES RAMAN (CARS) MICROSCOPY
Newport Corporation	62/183,155		DIODE PUMPED HIGH PEAK POWER LASER SYSTEM FOR MULTI-PHOTON APPLICATIONS
Newport Corporation	14/253,087		INTEGRAL PRELOAD MECHANISM FOR PIEZOELECTRIC ACTUATOR (title corrected)
Newport Corporation	14/559,829		ANGULAR BEAM ADJUSTMENT SYSTEMS AND METHODS OF USE
Newport Corporation	14/501,460		BROADLY TUNABLE OPTICAL PARAMETRIC OSCILLATOR
Newport Corporation	14/484,210		TUNABLE VIBRATION DAMPERS AND METHODS OF MANUFACTURE AND TUNING

OWNER	APPLICATION NUMBER	PATENT NUMBER	TITLE
Newport Corporation	14/147,400		METHODS AND DEVICES FOR ACTIVE VIBRATION DAMPING OF AN OPTICAL STRUCTURE
Newport Corporation	13/609,134		INSTRUMENTED PLATFORM FOR VIBRATION SENSITIVE EQUIPMENT