

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT7299157

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY AGREEMENT

**CONVEYING PARTY DATA**

Name	Execution Date
ELECTRO SCIENTIFIC INDUSTRIES, INC.	04/22/2022
MKS INSTRUMENTS, INC.	04/22/2022

**RECEIVING PARTY DATA**

<b>Name:</b>	BARCLAYS BANK PLC
<b>Street Address:</b>	745 SEVENTH AVENUE
<b>City:</b>	NEW YORK
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	10019

**PROPERTY NUMBERS Total: 12**

Property Type	Number
Application Number:	17647239
Application Number:	17651751
Application Number:	63298825
Application Number:	17590874
Application Number:	17583712
Application Number:	63302931
Application Number:	17656177
Application Number:	63302887
Application Number:	63304349
Application Number:	17633828
Application Number:	63314437
Application Number:	63314438

**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: 8006665597  
 Email: caleb.oakley@wolterskluwer.com  
 Correspondent Name: CT CORP  
 Address Line 1: 555 CAPITOL MALL

PATENT

**Address Line 2:** SUITE 1150  
**Address Line 4:** SACRAMENTO, CALIFORNIA 95814

**NAME OF SUBMITTER:** JOHN KLINE

**SIGNATURE:** /John Kline/

**DATE SIGNED:** 04/26/2022

**Total Attachments: 6**

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**PATENT SECURITY AGREEMENT**

**Patent Security Agreement**, dated as of April 22, 2022 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Patent Security Agreement"), by ELECTRO SCIENTIFIC INDUSTRIES, INC., an Oregon corporation and MKS INSTRUMENTS, INC., a Massachusetts 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, each Grantor is party to that certain Security Agreement dated as of February 1, 2019 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"), by and among the Grantors, the other Grantors (as defined therein) party thereto and the Collateral Agent, in favor of the Collateral Agent, pursuant to which each 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, each 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 Grantors 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 each 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 Grantors, execute, acknowledge, and deliver to the Grantors 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.

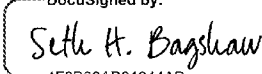
SECTION 7. Notices; Communications. All communications and notices under this Patent Security Agreement shall be in writing and given as provided in Section 6.01 of the Security Agreement.

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 Grantors when a counterpart hereof executed on behalf of the Grantors 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 Grantors and the Collateral Agent and their respective permitted successors and assigns, and shall inure to the benefit of the Grantors, the Collateral Agent and the other Secured Parties and their respective permitted successors and assigns, except that the Grantors shall not have the right to assign or transfer their 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]

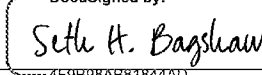
**MKS INSTRUMENTS, INC.,**

as a Grantor

By: DocuSigned by:  
  
Name: Seth H. Bagshaw  
Title: Senior Vice President, Chief Financial Officer and Treasurer

**ELECTRO SCIENTIFIC INDUSTRIES, INC.,**

as a Grantor

By: DocuSigned by:  
  
Name: Seth H. Bagshaw  
Title: President and Treasurer

*[Signature Page to ABL Patent Security Agreement]*

**BARCLAYS BANK PLC,**  
as the Collateral Agent

DocuSigned by:  
*Koruthu Mathew*  
By: \_\_\_\_\_  
Name: Koruthu Mathew  
Title: VP

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

Ref.	Case	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
5089.3103-000		MKS Instruments, Inc.	Ion Source with Gas Delivery for High-Fidelity Analysis	Filed	17/647,239	1/6/2022		
5089.3105-000		MKS Instruments, Inc.	Method and Apparatus for Pressure Based Mass Flow Controller	Filed	17/651,751	2/18/2022		
3197-000143-US-PS1		MKS Instruments, Inc.	Pulse and Bias Synchronization Methods and Systems	Filed	63/298,825	1/12/2022		
0229-800WIL-20UT		MKS Instruments, Inc.	Apparatus and Methods for Microwave-Assisted Surface Chemistry Annealing of ALD Processes Utilizing Microwave Radiation Energy	Filed	17/590,874	2/2/2022		
0195-800WIL-17UT-CON		MKS Instruments, Inc.	Multi-Sensor Gas Sampling Detection System for Radial Gases and Short-Lived Molecules and Method of Use	Filed	17/583,712	1/25/2022		
E308-P1		MKS Instruments, Inc.	Power Combiner Having Integrated Thermal Management System and Methods of Manufacture	Filed	63/302,931	1/25/2022		
5089.3106-000		MKS Instruments, Inc.	Method and Apparatus for Improving Mass Flow Verification Accuracy	Filed	17/656,177	3/23/2022		
E302-P1		Electro Scientific Industries, Inc.	High Accuracy, Illumination-agnostic, Auto Focus Algorithm for High Contrast Features	Pending	63/302,887	1/25/2022		
E307-P1		Electro Scientific Industries, Inc.	Germanium AOD system with parallel and perpendicular polarizations	Pending	63/304,349	1/28/2022		
E286-US1		Electro Scientific Industries, Inc.	Reduced Impedance Variation in a Modular 2-Terminal Contacting Electrical Measurement System	Pending	17/633,828	2/8/2022		
E306-P1		Electro Scientific Industries, Inc.	Optical power equalization for thermal stability of AODs	Pending	63/314,437	2/27/2022		
E306-P2		Electro Scientific Industries, Inc.	Optical power equalization for thermal stability of AODs	Pending	63/314,438	2/27/2022		