

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT2583344

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
H.C. MATERIALS CORPORATION	10/11/2013
RECEIVING PARTY DATA	
Name:	CTG ADVANCED MATERIALS, LLC
Street Address:	479 QUADRANGLE DRIVE, SUITE E
City:	BOLINGBROOK
State/Country:	ILLINOIS
Postal Code:	60440
PROPERTY NUMBERS Total: 10	
Property Type	Number
Patent Number:	6942730
Patent Number:	7908722
Patent Number:	8535442
Application Number:	13025751
Application Number:	13821400
Application Number:	13821425
Application Number:	13957074
Application Number:	14019750
Application Number:	61803025
Application Number:	61849058
CORRESPONDENCE DATA	
Fax Number:	(617)523-6850
Phone:	617-523-2700
Email:	susan.dinicola@hklaw.com
<i>Correspondence will be sent via US Mail when the email attempt is unsuccessful.</i>	

OP \$400.00 6942730

502537951

PATENT
REEL: 031435 FRAME: 0991

Correspondent Name:	HOLLAND & KNIGHT LLP
Address Line 1:	10 ST. JAMES AVENUE
Address Line 4:	BOSTON, MASSACHUSETTS 02116

ATTORNEY DOCKET NUMBER:	132130.00017
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NAME OF SUBMITTER:	SUSAN C. DINICOLA
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Signature:	/Susan C. DiNicola/
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Date:	10/18/2013
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Total Attachments: 7

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ASSIGNMENT AND ASSUMPTION OF INTELLECTUAL PROPERTY AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION OF INTELLECTUAL PROPERTY AGREEMENT (this “**Agreement**”), dated as of October 11, 2013 (the “**Effective Date**”), is made by and between H.C. Materials Corporation, an Illinois corporation (“**Assignor**”) and CTG Advanced Materials, LLC, a Delaware limited liability company (“**Assignee**”). Capitalized terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement (as defined below).

WHEREAS, pursuant to that certain Asset Purchase and Contribution Agreement, dated as of September 20, 2013, among Assignor, Assignee, BW Piezo Holdings, LLC, a Delaware limited liability company, DHAN LLC, an Illinois limited liability company, and Dr. Pengdi Han (as amended and in effect, the “**Purchase Agreement**”), on October 11, 2013, Assignor transferred, sold, conveyed and assigned to Assignee, among other things, the intellectual property set forth on Exhibit A hereto (collectively, the “**Transferred Intellectual Property**” and such asset transfer, the “**HCMC Transfer**”);

WHEREAS, the Transferred Intellectual Property includes U.S. patents, pending U.S. patent applications, and abandoned/expired U.S. patent applications (collectively, “**Transferred U.S. Intellectual Property**”), expired PCT patent applications, and pending foreign patent applications; and

WHEREAS, in connection with such HCMC Transfer, Assignor and Assignee desire to enter into this Agreement to confirm the assignment and further document the HCMC Transfer of the Transferred U.S. Intellectual Property for purposes of recording the assignment of such Transferred U.S. Intellectual Property with the United States Patent and Trademark Office (the “**USPTO**”).

NOW THEREFORE, in consideration of the covenants set forth herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Assignment and Assumption. Assignor, for itself and its successors and assigns, effective as of the Effective Date, hereby assigns, conveys, grants, sells, sets over to, transfers, and vests to and in Assignee, and its successors and assigns, the entire right, title and interest throughout the world in the Transferred U.S. Intellectual Property, and Assignee hereby assumes from Assignor all of Assignor’s entire right, title and interest, legal and equitable, in and to the Transferred U.S. Intellectual Property (the “**Assignment**”).

2. Authorization. Assignor hereby authorizes and requests the USPTO to record “CTG Advanced Materials, LLC” as the assignee and owner of all rights, title and interest in and to the Transferred U.S. Intellectual Property.

3. Further Assurances. This Agreement concerns and shall include the Transferred U.S. Intellectual Property (including any/all future issued, registered and/or pending intellectual property that directly and/or indirectly claims priority to any of the Transferred U.S. Intellectual Property). Assignor hereby covenants and agrees to execute and deliver any and all papers and

do all lawful acts that may be reasonably necessary to prosecute, correct, perfect and/or record Assignee's title to the Transferred U.S. Intellectual Property, including but not limited to Assignor executing and delivering any and all papers and doing all lawful acts that may be reasonably necessary to prosecute, correct, perfect and/or record Assignee's title in the above-described future issued, registered and/or pending intellectual property that directly or indirectly claims priority to any of the Transferred U.S. Intellectual Property.

4. Miscellaneous.

a. The parties hereto agree that the purpose of this Agreement is to confirm the Assignment and further document the HCMC Transfer of the Transferred U.S. Intellectual Property contemplated by the Purchase Agreement for purposes of recording the Assignment with the USPTO. Nothing herein shall limit, expand upon or supersede, in any way, the agreement to transfer HCMC Intellectual Property and/or any other HCMC Owned Intellectual Property as set forth in the Purchase Agreement.

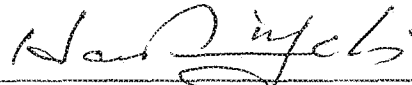
b. This Assignment and any amendments hereto may be executed in one or more counterparts, each of which shall be deemed an original but all of which together will constitute one and the same instrument.

[Signature Page to Follow on Next Page]

IN WITNESS WHEREOF, Assignor and Assignee have caused this Assignment and Assumption of Intellectual Property Agreement to be executed by its duly authorized officer this 11th day of October, 2013.

ASSIGNOR:

H.C. MATERIALS CORPORATION

By: 
Name: Dr. Pengdi Han
Title: President

ASSIGNEE:

CTG ADVANCED MATERIALS, LLC

By: _____
Name: Adam Blumenthal
Title: Chairman

IN WITNESS WHEREOF, Assignor and Assignee have caused this Assignment and Assumption of Intellectual Property Agreement to be executed by its duly authorized officer this 11th day of October, 2013.

ASSIGNOR:

H.C. MATERIALS CORPORATION

By: _____
Name: Dr. Pengdi Han
Title: President

ASSIGNEE:

CTG ADVANCED MATERIALS, LLC

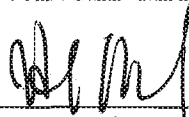
By:  _____
Name: Adam Blumenthal
Title: Chairman

EXHIBIT A

Transferred Intellectual Property

➤ TRANSFERRED U.S. INTELLECTUAL PROPERTY

○ U.S. PATENTS

<u>Country</u>	<u>Title</u>	<u>Application / Serial No.</u>	<u>App. Date</u>	<u>Patent No.</u>	<u>Issue Date</u>
U.S.	HYBRID STOCKBARGER ZONE-LEVELING MELTING METHOD FOR DIRECTED CRYSTALLIZATION AND GROWTH OF SINGLE CRYSTALS OF LEAD MAGNESIUM NIOBATE-LEAD TITANATE (PMN-PT) SOLID SOLUTIONS AND RELATED PIEZOCRYSTALS	10/288,042	11/04/02	6,942,730	09/13/05
U.S.	A PROCESS FOR THE PREPARATION OF PIEZOELECTRIC CRYSTAL ELEMENTS	12/252,037	10/15/08	7,908,722	03/22/11
U.S.	CRYSTAL GROWTH SYSTEM AND METHOD FOR LEAD-CONTAINED COMPOSITIONS USING BATCH AUTO-FEEDING	12/373,080	01/09/09	8,535,442	9/17/13

○ PENDING U.S. PATENT APPLICATIONS

<u>Country</u>	<u>Title</u>	<u>Application / Serial No.</u>	<u>App. Date</u>
U.S.	PROCESS FOR THE PREPARATION OF PIEZOELECTRIC CRYSTAL ELEMENTS AND A PRODUCT THEREOF	13/025,751	02/11/11
U.S.	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHODS FOR MANUFACTURING THE SAME	13/821,400	03/07/13
U.S.	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHOD FOR MANUFACTURING THE SAME	13/821,425	03/07/13
U.S.	CRYSTAL GROWTH SYSTEM AND METHOD FOR LEAD-CONTAINED COMPOSITIONS USING BATCH AUTO-FEEDING	13/957,074	08/01/13
U.S.	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES AND METHODS FOR MANUFACTURING THE SAME	14/019,750	09/06/13
U.S.	APPARATUS AND PROCESS FOR THE PREPARATION OF PIEZOELECTRIC CRYSTAL ELEMENTS AND SYSTEMS THEREOF	61/803,025	03/18/13

<u>Country</u>	<u>Title</u>	<u>Application / Serial No.</u>	<u>App. Date</u>
U.S.	<p>TITLE ON COVER SHEET FOR PROVISIONAL APPLICATION (PTO/SB/16):</p> <p>NEW TYPE ELECTRO-OPTICAL SINGLE CRYSTAL ELEMENTS, ITS' APPLICATIONS AND THE PREPARATION PROCESSES THEREOF</p> <p>TITLE ON ASSIGNMENT AND ON APPLICATION AS FILED:</p> <p>PIEZOELECTRIC CRYSTAL ELEMENTS OF D24 SHEAR MODE, APPLICATIONS AND PROCESSES FOR THE PREPARATION THEREOF</p> <p>TITLE ON NOTICE OF RECORDATION:</p> <p>TYPE ELECTRO-OPTICAL SINGLE CRYSTAL ELEMENTS, ITS' APPLICATIONS AND THE PREPARATION PROCESSES THEREOF</p>	61/849,058	01/18/13

○ **ABANDONED/EXPIRED U.S. PATENT APPLICATIONS**

<u>Country</u>	<u>Title</u>	<u>Application / Serial No.</u>	<u>App. Date</u>
U.S.	PIEZOELECTRIC CRYSTAL ELEMENTS OF SHEAR MODE AND PROCESS FOR THE PREPARATION THEREOF	11/182,704	7/14/05
U.S.	HYBRID STOCKBARGER ZONE-LEVELING MELTING METHOD FOR DIRECT CRYSTALLIZATION AND GROWTH OF...	11/205,875	8/17/05
U.S.	PIEZOELECTRIC CRYSTAL ELEMENTS OF SHEAR MODE AND PROCESS FOR THE PREPARATION THEREOF	11/818,735	6/15/07
U.S.	HYBRID STOCKBARGER ZONE-LEVELING MELTING METHOD FOR DIRECT CRYSTALLIZATION AND GROWTH OF...	12/212,445	9/17/08
U.S.	HYBRID STOCKBARGER ZONE-LEVELING MELTING METHOD FOR DIRECT CRYSTALLIZATION AND GROWTH OF...	60/330,915	11/2/01
U.S.	PIEZOELECTRIC CRYSTAL ELEMENTS OF SHEAR MODE AND PROCESS FOR THE PREPARATION THEREOF	60/598,885	7/14/04
U.S.	CRYSTAL GROWTH METHOD FOR LEAD-CONTAINING COMPOSITIONS USING BATCH AUTO-FEEDING	60/830,139	7/12/06
U.S.	HIGH FREQUENCY (20-100MHZ) PMN-PT-BASED PIEZOELECTRIC CRYSTAL COMPOSITES COMPOSITE-CRYSTAL-ELEMENT, AND THE PREPARATION PROCESSES THEREOF	61/344,801	10/13/10

➤ **EXPIRED PCT PATENT APPLICATIONS**

<u>Country</u>	<u>Title</u>	<u>Application / Serial No.</u>	<u>App. Date</u>
PCT	CRYSTAL GROWTH METHOD FOR LEAD-CONTAINING COMPOSITIONS USING BATCH AUTO-FEEDING	PCT/US2007/073412	7/12/07
PCT	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHOD FOR MANUFACTURING THE SAME	PCT/US2011/56230	10/13/11
PCT	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHOD FOR MANUFACTURING THE SAME	PCT/US2011/56231	10/13/11

➤ **PENDING FOREIGN PATENT APPLICATIONS**

<u>Country</u>	<u>Title</u>	<u>Application / Serial No.</u>	<u>App. Date</u>
China	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHODS FOR MANUFACTURING THE SAME	CN 201180047348.0	03/29/13
Japan	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHODS FOR MANUFACTURING THE SAME	JP 2013-534959	04/01/13
S. Korea	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHODS FOR MANUFACTURING THE SAME	KR 10-2013-7007909	03/28/13
China	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHOD FOR MANUFACTURING THE SAME	CN 201180047368.8	03/29/13
Japan	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHOD FOR MANUFACTURING THE SAME	JP 2013-534960	04/01/13
S. Korea	HIGH FREQUENCY PIEZOELECTRIC CRYSTAL COMPOSITES, DEVICES, AND METHOD FOR MANUFACTURING THE SAME	10-2013-7007910	03/28/13