

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5022843

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST
CONVEYING PARTY DATA	
Name	Execution Date
CRYSTAL SOLAR INC.	06/19/2018
RECEIVING PARTY DATA	
Name:	SUNBEAM TECHNIK INC.
Street Address:	17256 COUNTRY GIRL LANE
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92127
PROPERTY NUMBERS Total: 10	
Property Type	Number
Application Number:	15175000
Application Number:	15630277
Application Number:	15204979
Application Number:	15831146
Patent Number:	8030119
Patent Number:	8298629
Patent Number:	8900399
Patent Number:	9255346
Application Number:	15895278
Application Number:	13776471
CORRESPONDENCE DATA	
Fax Number:	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Email:	BNolan@mayerbrown.com
Correspondent Name:	BRIAN W. NOLAN
Address Line 1:	1221 AVENUE OF THE AMERICAS
Address Line 4:	NEW YORK, NEW YORK 10020
ATTORNEY DOCKET NUMBER:	18588790
NAME OF SUBMITTER:	BRIAN W. NOLAN

SIGNATURE:	/BRIAN W. NOLAN/
DATE SIGNED:	06/25/2018
Total Attachments: 8 source=Solar - Patent Security Agreement (executed) (729075731_1)#page1.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page2.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page3.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page4.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page5.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page6.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page7.tif source=Solar - Patent Security Agreement (executed) (729075731_1)#page8.tif	

PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT (“**Patent Security Agreement**”), dated as of June 19, 2018 is made by and between **CRYSTAL SOLAR INC.**, a Delaware corporation (the “**Borrower**” or “**Grantor**”) in favor of **SUNBEAM TECHNIK INC.**, a California corporation (the “**Lender**”).

WHEREAS, the Borrower has entered into a Promissory Note of even date (the “**Note**”), with Lender.

WHEREAS, as a condition precedent to the making of the loan by Lender under the Note, Grantor has agreed to execute and deliver to Lender this Patent Security Agreement.

WHEREAS, Grantor intends to grant to Lender a security interest in, among other property, certain intellectual property and assets of the Grantor as described below, and has agreed to execute and deliver this Patent Security Agreement for recording with governmental authorities, including, but not limited to, the United States Patent and Trademark Office.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Grant of Security. Grantor hereby pledges and grants to the Lender a security interest, with power of sale to the extent permitted by law, in and to all of the right, title, and interest of Grantor in, to, and under the following (the “**Patent Collateral**”):

(a) the patents and patent applications set forth in Schedule 1 hereto and all reissues, divisions, continuations, continuations-in-part, renewals, extensions, and reexaminations thereof and amendments thereto (the “**Patents**”);

(b) all rights of any kind whatsoever of Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions, and otherwise throughout the world;

(c) any and all royalties, fees, income, payments, and other proceeds now or hereafter due or payable with respect to any and all of the foregoing; and

(d) any and all claims and causes of action, with respect to any of the foregoing, whether occurring before, on, or after the date hereof, including all rights to and claims for damages, restitution, and injunctive and other legal and equitable relief for past, present, and future infringement, misappropriation, violation, misuse, breach, or default, with the right, but no obligation, to sue for such legal and equitable relief and to collect, or otherwise recover, any such damages.

2. Recordation. Grantor authorizes the Commissioner for Patents and any other government officials to record and register this Patent Security Agreement upon request by the Lender. Grantor further authorizes Lender to record any Uniform Commercial Code (“**UCC**”) Financing Statement it deems necessary to perfect its lien on the Patent Collateral.

3. Representations, Warranties and Agreements. Grantor represents, warrants and agrees as follows:

(a) Existence; Authority. Grantor is a corporation duly organized, validly existing and in good standing under the laws of Delaware, and this Patent Security Agreement has been duly and validly authorized by all necessary corporate action on the part of Grantor.

(b) Patents. Schedule 1 accurately lists the U.S. patents and patent applications constituting Patent Collateral owned by Grantor as of the date hereof, or to which Grantor has a right as of the date hereof to have assigned to it, and accurately reflects the existence and status of applications and letters patent pertaining to the Patents as of the date hereof. If after the date hereof, Grantor owns or has a right to have assigned to it any patents or patent applications not listed on Schedule 1, or if Schedule 1 ceases to accurately reflect the existence and status of applications and letters patent pertaining to the Patents, then Grantor shall immediately provide written notice to Lender with a replacement Schedule 1, which upon acceptance by Lender shall become part of this Patent Security Agreement.

(c) Title. Grantor has absolute title to each registration and each application for each Patent listed on Schedule 1 and to the asset listed under Schedule 1, free and clear of all liens and encumbrances. Grantor will keep all Patent Collateral free and clear of all liens and encumbrances.

(d) No Sale. Except as permitted in the Note, Grantor will not assign, transfer, encumber or otherwise dispose of the Patent Collateral, or any interest therein, without Lender's prior written consent.

(e) Defense. While any obligations under the Note are outstanding, Grantor will at its own expense and using commercially reasonable efforts, protect and defend the Patent Collateral against all claims or demands of all persons.

(f) Maintenance. While the loan is outstanding, Grantor will at its own expense maintain its registrations for Patents and maintain the Patents to the extent reasonably advisable in its business including, but not limited to, filing affidavits, maintenance fees, annuities, and renewals possible with respect to letters patent, and applications therefor. Grantor covenants that it will not abandon nor fail to pay any maintenance fee or annuity due and payable on any Patent, nor fail to file any required affidavit or renewal in support thereof, without first providing Lender: (i) sufficient written notice to allow Lender to timely pay any such maintenance fees or annuities which may become due on any Patents, or to file any affidavit or renewal with respect thereto, and (ii) a separate written power of attorney or other authorization to pay such maintenance fees or annuities, or to file such affidavit or renewal, should such be necessary or desirable.

(g) Power of Attorney. To facilitate Lender's taking action under subsection (f) above and exercising its rights hereunder, Grantor hereby irrevocably appoints (which appointment is coupled with an interest) Lender, or its delegate, as the attorney-in-fact of Grantor with the right (but not the duty) from time to time to create, prepare, complete, execute, deliver, endorse or file, in the name and on behalf of Grantor, any and all instruments, documents,

applications, financing statements, and other agreements and writings required to be obtained, executed, delivered or endorsed by Grantor hereunder, or, necessary for Lender, after an Event of Default (as defined in the Note), to enforce or use the Patents or to grant or issue any exclusive or non-exclusive license under the Patents to any third party, or to sell, assign, transfer, pledge, encumber or otherwise transfer title in or dispose of the Patents to any third party. Grantor hereby ratifies all that such attorney shall lawfully do or cause to be done by virtue hereof. The power of attorney granted herein shall terminate upon the termination of the Note as provided therein and the payment and performance of all obligations due thereunder.

4. Remedies. This Patent Security Agreement has been entered into pursuant to and in conjunction with the Note, which is hereby incorporated by reference. If any Event of Default (as defined in the Note) will have occurred and be continuing, Lender, without any other notice to or demand upon Grantor, may assert all rights and remedies of a secured party under the UCC or other applicable law, including, without limitation, the right to take possession of, hold, collect, sell, lease, deliver, grant options to purchase or otherwise retain, liquidate or dispose of all or any portion of the Patent Collateral. All rights and remedies herein provided and in the Note are cumulative and are not exclusive of any rights or remedies provided by applicable law or under the Note.

5. Execution in Counterparts. This Patent Security Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this Patent Security Agreement by facsimile or in electronic (i.e., "pdf" or "tif" format) shall be effective as delivery of a manually executed counterpart of this Patent Security Agreement.

6. Successors and Assigns. This Patent Security Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.


7. Governing Law. This Patent Security Agreement and any claim, controversy, dispute, or cause of action (whether in contract or tort or otherwise) based upon, arising out of, or relating to this Patent Security Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the State of Delaware, without giving effect to any choice or conflict of law provision or rule (whether of the State of Delaware or any other jurisdiction).

8. Termination. This Patent Security Agreement shall terminate at such time as all of the obligations of Grantor to Lender have been fully paid, performed and satisfied, and the Note has been permanently terminated by discharge of amounts payable by the Grantor to the Lenders under the Note. Upon request by Grantor following termination of this Patent Security Agreement, Lender shall, at the sole cost and expense of Grantor, promptly execute and deliver such releases and termination statements as are reasonably requested by Grantor to terminate the security interest granted under this Patent Security Agreement.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, Grantor has caused this Patent Security Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

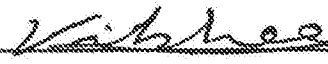
CRYSTAL SOLAR INC., a Delaware
corporation

By: 
Name: T.S. RAVI
Title: CEO

Address for Notices:
3050 Coronado Drive
Santa Clara, CA 95054
Attention: TS Ravi
Email: tsravi@xtalsolar.com

AGREED TO AND ACCEPTED:

SUNBEAM TECHNIK INC., a California
corporation

By: 
Name: VIBHAA KALATHIA
Title: Director

Address for Notices:
17256 Country Girl Lane
San Diego, CA 92127
Attention: VIBHAA KALATHIA
Email: vibhaa@kghotel.com

[signature page to Patent Security Agreement]

STATE OF _____

COUNTY OF _____

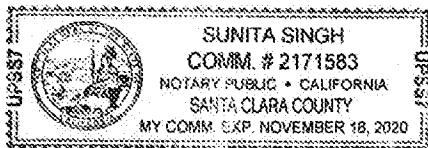
I, _____, a Notary Public for said County and State, do hereby certify that _____ personally appeared before me this day and acknowledged that s/he is the _____ of Crystal Solar Inc., a Delaware corporation, and that by authority duly given, the foregoing instrument was signed by him on behalf of the company.

Sworn and subscribed to me this the 19 day of May, 2018.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA, COUNTY OF SANTA CLARA. Subscribed and sworn to (or affirmed) before me on this 19 day of May, 2018 by Sunita Singh proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Sunita Singh
(Signature of Notary) Notary Public
Official Signature of Notary



Sunita Singh, Notary Public
Notary Public's printed or typed name

(Official Stamp or Seal)

My Commission expires: 11/18/2020

SCHEDULE 1**PART A**

Client Ref.	Patent No.	Title	Issue Date	Pub. No. And Pub. Date	Inventors
CRY-025	15/175,000 Claims priority to U.S. Prov. Serial Nos. 62/171,202 filed 06/04/2015, and 62/213,087 filed 09/01/2015.	CVD REACTOR CHAMBER WITH RESISTIVE HEATING AND SUBSTRATE HOLDER	06/06/2016	US 2017-0037514 02/09/2017	1. Visweswaren Sivaramakrishnan 2. Tirunelveli S. Ravi 3. Timothy N. Kleiner 4. Quoc Truong
CRY-026	15/630,277 Claims priority to U.S. Prov. Ser. No. 62/354,663 filed 06/24/2016.	SEMICONDUCTOR LAYER SEPARATION FROM SINGLE CRYSTAL SILICON SUBSTRATE BY INFRARED IRRADIATION OF POROUS SILICON SEPARATION LAYER	06/22/2017	US2017-0372966 12/28/2017	1) Tirunelveli S. Ravi 2) Stephen Daniel Miller
CRY-024	15/204,979 Claims priority to U.S. Prov. Serial No. 62/189,643 filed 07/07/2015.	HIGH EFFICIENCY SINGLE CRYSTAL SILICON SOLAR CELL WITH EPITAXIALLY DEPOSITED SILICON LAYERS WITH DEEP JUNCTION(S)	07/07/2016	US 2017-0012149 01/12/2017	1. Ruiying Hao 2. Tirunelveli S. Ravi
CRY-030	15/831,146 Claims priority to U.S. Prov. Ser. No. 62/429,689 filed 12/02/2016	PROCESS CHAMBER WITH RESISTIVE HEATING	12/04/2017		1) Tirunelveli S. Ravi 2) Visweswaren Sivaramakrishnan

PART B

Client Ref.	Patent No.	Title	Issue Date	Pub. No. And Pub. Date	Inventors
CRY-006	8,030,119 Serial No. 12/399,248 filed 03/06/2009 Claims priority to 61/068,629 filed 03/08/2008.	INTEGRATED METHOD AND SYSTEM FOR MANUFACTURING MONOLITHIC PANELS OF CRYSTALLINE SOLAR CELLS	10/04/2011	US2009-0227063 09/10/2009	1. Tirunelveli S. Ravi 2. Ananda H. Kumar 3. Ashish Asthana
CRY-005	8,298,629 Serial No. 12/392,448 filed 02/25/2009	HIGH THROUGHPUT MULTI-WAFER EPITAXIAL REACTOR	10/30/2012	US2010-0215872 08/26/2010	1. Visweswaren Sivaramakrishnan 2. Kedarnath Sangam 3. Tirunelveli S. Ravi 4. Andrzej Kaszuba 5. Quoc Vinh Truong
CRY-006 (DIV)	8,900,399 Serial No. 13/050,807 filed 03/17/2011 Divisional of U.S. Ser. No. 12/399,248 filed 03/06/2009.	INTEGRATED METHOD AND SYSTEM FOR MANUFACTURING MONOLITHIC PANELS OF CRYSTALLINE SOLAR CELLS	12/02/2014	US2011-0300715 12/08/11	1. Tirunelveli S. Ravi 2. Ananda H. Kumar 3. Ashish Asthana 4. Kyle Ross Tantiwong 5. Visweswaren Sivaramakrishnan

Client Ref.	Patent No.	Title	Issue Date	Pub. No. And Pub. Date	Inventors
CRY-012	9,255,346 Serial No. 13/483,002 Filed 05/29/2012 Claims priority to U.S. Prov. Serial No. 61/491,152 filed 05/27/2011	SILICON WAFERS BY EPITAXIAL GROWTH	02/09/2016	US2013-0032084 02/07/2013	1. Visweswaren Sivaramakrishnan 2. Tirunelveli S. Ravi 3. Andrzej Kaszuba 4. Quoc Vinh Truong 5. Jean R. Vatus
CRY-017C	15/895,278 Claims priority to U.S. Serial No. 13/776,471 which claims priority to Prov. Serial No. 61/602,396 filed 02/25/2012	EPITAXIAL GROWTH OF III-V SOLAR CELLS ON REUSABLE SILICON SUBSTRATE WITH POROUS SILICON SEPARATION LAYER	02/13/2018	Non-publication requested	1. Tirunelveli S. Ravi
	13/776,471	EPITAXIAL GROWTH OF III-V SOLAR CELLS ON REUSABLE SILICON SUBSTRATE WITH POROUS SILICON SEPARATION LAYER	2/25/2013	Non publication requested	