

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3851098

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	PATENT SECURITY AGREEMENT		
CONVEYING PARTY DATA			
Name			Execution Date
SUNEDISON, LLC			04/26/2016
RECEIVING PARTY DATA			
Name:	DEUTSCHE BANK AG NEW YORK BRANCH, AS ADMINISTRATIVE AGENT		
Street Address:	60 WALL STREET		
City:	NEW YORK		
State/Country:	NEW YORK		
Postal Code:	10005		
PROPERTY NUMBERS Total: 4			
Property Type	Number		
Application Number:	12853838		
Application Number:	13048054		
Application Number:	13209033		
Application Number:	14361846		
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:	iprecordations@whitecase.com		
Correspondent Name:	THERESA TRAN/WHITE & CASE LLP		
Address Line 1:	1155 AVENUE OF THE AMERICAS		
Address Line 4:	NEW YORK, NEW YORK 10036		
ATTORNEY DOCKET NUMBER:	1111788-0154-T194		
NAME OF SUBMITTER:	THERESA TRAN		
SIGNATURE:	/Theresa Tran/		
DATE SIGNED:	04/28/2016		
Total Attachments: 27			
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PATENT SECURITY AGREEMENT

This **PATENT SECURITY AGREEMENT**, dated as of April 26, 2016 (as it may be amended, restated, supplemented or otherwise modified from time to time, this “**Agreement**”), is made by the entities identified as grantors on the signature pages hereto (collectively, the “**Grantors**”) in favor of Deutsche Bank AG New York Branch, solely in its capacity as Administrative Agent for the Secured Parties (in such capacity, together with its successors and permitted assigns in such capacity, the “**Administrative Agent**”).

WHEREAS, the Grantors are party to that certain Pledge and Security Agreement dated as of April 26, 2016 (as it may be amended, restated, supplemented or otherwise modified from time to time, the “**Pledge and Security Agreement**”) between each of the Grantors, the other grantors party thereto and the Administrative Agent pursuant to which the Grantors granted a security interest to the Administrative Agent in the Patent Collateral (as defined below) and are required to execute and deliver this Agreement.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Grantors hereby agree with the Administrative Agent as follows:

SECTION 1. Defined Terms

Unless otherwise defined herein, terms defined in the Pledge and Security Agreement and used herein have the meaning given to them in the Pledge and Security Agreement.

SECTION 2. Grant of Security Interest

Each Grantor hereby grants to the Administrative Agent, for the benefit of the Secured Parties, a security interest in and continuing lien on all of such Grantor’s right, title and interest in, to and under the following, in each case whether now or hereafter existing or in which such Grantor now has or hereafter acquires an interest and wherever the same may be located (collectively, the “**Patent Collateral**”):

all United States and foreign patents and certificates of invention, or similar industrial property rights, and applications for any of the foregoing, including, but not limited to: (i) each patent and patent application listed in Schedule A attached hereto (as such schedule may be amended or supplemented from time to time), (ii) all reissues, divisions, continuations, continuations-in-part, extensions, renewals, and reexaminations thereof, (iii) all patentable inventions and improvements thereto, (iv) the right to sue or otherwise recover for any past, present and future infringement or other violation thereof, (v) all Proceeds of the foregoing, including, without limitation, license fees, royalties, income, payments, claims, damages, and proceeds of suit now or hereafter due and/or payable with respect thereto, and (vi) all other rights of any kind accruing thereunder or pertaining thereto throughout the world.

Notwithstanding anything herein to the contrary, in no event shall the Patent Collateral include or the security interest granted under this Section 2 attach to Excluded Property.

SECTION 3. Security Agreement

The security interest granted pursuant to this Agreement is granted in conjunction with the security interest granted to the Administrative Agent for the Secured Parties pursuant to the Pledge and Security Agreement, and the Grantors hereby acknowledge and affirm that the rights and remedies of the Administrative Agent with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Pledge and Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Agreement (other than Section 4) is deemed to conflict with the Pledge and Security Agreement, the provisions of the Pledge and Security Agreement shall control.

SECTION 4. Financing Orders; Post-Petition Intercreditor Arrangements

This Agreement shall be subject to the terms of Section 3.3 of the Pledge and Security Agreement.

SECTION 5. Governing Law

THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK INCLUDING SECTIONS 5-1401 AND 5-1402 OF THE NEW YORK GENERAL OBLIGATIONS LAW (OTHER THAN ANY MANDATORY PROVISIONS OF THE UCC RELATING TO THE LAW GOVERNING PERFECTION AND THE EFFECT OF PERFECTION OF THE SECURITY INTEREST) AND, TO THE EXTENT APPLICABLE, THE BANKRUPTCY CODE.

SECTION 6. Counterparts

This Agreement may be executed in one or more counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one and the same instrument.

SECTION 7. Concerning the Administrative Agent

Deutsche Bank AG New York Branch is entering into this Agreement solely in its capacity as Administrative Agent and not in its individual or corporate capacity. The rights, privileges and immunities of the Administrative Agent pursuant to the Pledge and Security Agreement shall be incorporated as though fully set forth herein.

[Remainder of page intentionally left blank]

Accepted and Agreed:

SUNEDISON, INC.,
as Grantor

By: 

Name: Patrick Cook

Title: Vice President – Capital Markets and
Corporate Finance

NVT, LLC,
as Grantor

By: 

Name: Patrick Cook

Title: Authorized Representative

SOLAICX,
as Grantor

By: 

Name: Patrick Cook

Title: Authorized Representative

SUNEDISON, LLC,
as Grantor

By: 


Name: Patrick Cook

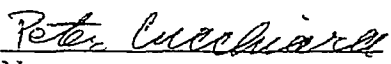
Title: Authorized Representative

[Patent Security Agreement]

Accepted and Agreed:

DEUTSCHE BANK AG NEW YORK BRANCH,
solely in its capacity as Administrative Agent

By: 
Name:
Title:

By: 
Name:
Title: Peter Cucchiara
Vice President

[Patent Security Agreement]

SCHEDULE A
to
PATENT SECURITY AGREEMENT

PATENTS AND PATENT APPLICATIONS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	NVT, LLC	D560605	29/249104	SOLAR PANEL FRAME
US	Granted	NVT, LLC	D560606	29/249321	FRAMED SOLAR PANEL
US	Granted	Solaicx	7635414	10/789638	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
US	Granted	Solaicx	8257496	12/315452	CRUCIBLE WEIGHT MEASUREMENT SYSTEM FOR CONTROLLING FEEDSTOCK INTRODUCTION IN CZOCHRALSKI CRYSTAL GROWTH
US	Granted	Solaicx	8262797	12/075513	WEIR DESIGN PROVIDING OPTIMAL PURGE GAS FLOW, MELT CONTROL, AND TEMPERATURE STABILIZATION FOR IMPROVED SINGLE CRYSTAL GROWTH IN A CONTINUOUS CZOCHRALSKI PROCESS
US	Granted	Solaicx	8317919	10/525824	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
US	Allowed	Solaicx	2013-0233237	13/604277	WEIR METHOD FOR IMPROVED SINGLE CRYSTAL GROWTH IN A CONTINUOUS CZOCHRALSKI PROCESS
US	Allowed	Solaicx	2014-0144372	13/689189	WEIR FOR IMPROVED CRYSTAL GROWTH IN A CONTINUOUS CZOCHRALSKI PROCESS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison LLC	8272176	12/853838	METHODS OF ASSEMBLING SOLAR ENERGY COLLECTING MODULES
US	Granted	SunEdison LLC	8726897	13/048054	COLLAPSIBLE SOLAR MODULE SUPPORT SYSTEM AND METHOD FOR ASSEMBLING THE SAME
US	Granted	SunEdison LLC	8816189	13/209033	INTEGRATED SOLAR MODULE
US	Published	SunEdison LLC	2014-0366932	14/361846	METHODS AND SYSTEMS FOR EVAPORATION CONTROL AND POWER PRODUCTION
US	Granted	SunEdison, Inc.	5910295	08/966798	CLOSED LOOP PROCESS FOR PRODUCING POLYCRYSTALLINE SILICON AND FUMED SILICA
US	Granted	SunEdison, Inc.	7691351	12/202807	METHOD FOR TREATMENT OF A GAS STREAM CONTAINING SILICON TETRAFLUORIDE AND HYDROGEN CHLORIDE
US	Granted	SunEdison, Inc.	7721492	11/851299	STRUT RUNNER MEMBER AND ASSEMBLY USING SAME FOR MOUNTING ARRAYS ON ROOFTOPS AND OTHER STRUCTURES
US	Granted	SunEdison, Inc.	7856769	11/332000	RACK ASSEMBLY FOR MOUNTING SOLAR MODULES
US	Granted	SunEdison, Inc.	7857269	11/947658	MOUNTING ASSEMBLY FOR ARRAYS AND OTHER SURFACE-MOUNTED EQUIPMENT
US	Granted	SunEdison, Inc.	7900407	11/750948	INTERCONNECTED SOLAR MODULE DESIGN AND SYSTEM
US	Granted	SunEdison, Inc.	7943108	12/208464	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
US	Granted	SunEdison, Inc.	8023266	12/468468	AC PHOTOVOLTAIC MODULE AND INVERTER ASSEMBLY
US	Granted	SunEdison, Inc.	8177180	12/947601	MOUNTING ASSEMBLY FOR ARRAYS AND OTHER SURFACE-MOUNTED EQUIPMENT
US	Granted	SunEdison, Inc.	8234821	12/761325	STRUT RUNNER MEMBER AND ASSEMBLY USING SAME FOR MOUNTING ARRAYS ON ROOFTOPS AND OTHER STRUCTURES

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison, Inc.	8256170	12/949551	RACK ASSEMBLY FOR MOUNTING SOLAR MODULES
US	Granted	SunEdison, Inc.	8300439	12/450002	DATA ACQUISITION APPARATUS AND METHODOLOGY FOR SELF-DIAGNOSING OF AC MODULES
US	Granted	SunEdison, Inc.	8344239	10/855254	MECHANISM FOR MOUNTING SOLAR MODULES
US	Granted	SunEdison, Inc.	8360050	12/709308	METHOD AND SYSTEM FOR OPERATING A THERMAL SOLAR SYSTEM USING A REVERSE MOTOR CONFIGURATION FOR THAWING ICE
US	Granted	SunEdison, Inc.	8375936	12/639970	METHOD AND SYSTEM FOR OPERATING A THERMAL SOLAR SYSTEM USING A REVERSE MOTOR CONFIGURATION
US	Granted	SunEdison, Inc.	8383943	12/411786	ELECTRICAL CABLE HARNESS AND ASSEMBLY FOR TRANSMITTING AC ELECTRICAL POWER
US	Granted	SunEdison, Inc.	8386197	12/684788	METHOD AND SYSTEM FOR PROCESSING INFORMATION FROM A COMBINATION OF A SOLAR THERMAL SYSTEM AND A PHOTOVOLTAIC APPARATUS
US	Granted	SunEdison, Inc.	8388914	12/978189	SYSTEMS FOR PRODUCING SILANE
US	Granted	SunEdison, Inc.	8388925	12/969058	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
US	Granted	SunEdison, Inc.	8404206	13/163027	METHODS FOR PRODUCING POLYCRYSTALLINE SILICON THAT REDUCE THE DEPOSITION OF SILICON ON REACTOR WALLS
US	Granted	SunEdison, Inc.	8418688	12/592751	ASSEMBLY AND METHOD FOR MOUNTING SOLAR PANELS TO STRUCTURAL SURFACES
US	Granted	SunEdison, Inc.	8449848	12/910553	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP SYSTEMS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison, Inc.	8452547	12/981084	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
US	Granted	SunEdison, Inc.	8524044	12/898487	SYSTEMS FOR RECOVERING SILANE FROM HEAVY-ENDS SEPARATION OPERATIONS
US	Granted	SunEdison, Inc.	8524045	13/246574	SYSTEMS FOR PURIFYING SILANE
US	Granted	SunEdison, Inc.	8524048	12/898494	PROCESSES FOR RECOVERING SILANE FROM HEAVY-ENDS SEPARATION OPERATIONS
US	Granted	SunEdison, Inc.	8529860	12/969089	METHODS FOR PRODUCING SILICON TETRAFLUORIDE
US	Granted	SunEdison, Inc.	8551298	13/246571	PROCESSES FOR PURIFYING SILANE
US	Granted	SunEdison, Inc.	8656659	13/042266	INTERCONNECTED SOLAR MODULE DESIGN AND SYSTEM
US	Granted	SunEdison, Inc.	8659880	13/200190	AC PHOTOVOLTAIC MODULE AND INVERTER ASSEMBLY
US	Granted	SunEdison, Inc.	8660708	13/151989	METHOD AND SYSTEM FOR HEALTHY HOME ZONING CONTROL CONFIGURED FOR EFFICIENT ENERGY USE AND CONSERVATION OF ENERGY RESOURCES
US	Granted	SunEdison, Inc.	8665610	12/88948	MODIFIED ZERO VOLTAGE TRANSITION (ZVT) FULL BRIDGE CONVERTER AND PHOTOVOLTAIC (PV) ARRAY USING THE SAME

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison, Inc.	8715597	13/328030	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP SYSTEMS THAT INVOLVE DISPROPORTIONATION OPERATIONS
US	Granted	SunEdison, Inc.	8728574	13/455483	METHODS FOR INTRODUCING A FIRST GAS AND A SECOND GAS INTO A REACTION CHAMBER
US	Granted	SunEdison, Inc.	8739478	13/250908	INTEGRATED THERMAL MODULE AND BACK PLATE STRUCTURE AND RELATED METHODS
US	Granted	SunEdison, Inc.	8745936	13/566935	RACK ASSEMBLY FOR MOUNTING SOLAR MODULES
US	Granted	SunEdison, Inc.	8790451	13/235338	METHOD AND SYSTEM FOR INTEGRATED HOME COOLING UTILIZING SOLAR POWER
US	Granted	SunEdison, Inc.	8806813	11/848766	TECHNIQUE FOR ELECTRICALLY BONDING SOLAR MODULES AND MOUNTING ASSEMBLIES
US	Granted	SunEdison, Inc.	8807839	13/319296	SYNTHETIC RESIN BEARING FOR PHOTOVOLTAGIC TRACKING SYSTEM
US	Granted	SunEdison, Inc.	8816870	12/750631	HEALTHY HOME GRAPHICAL USER INTERFACE METHOD AND DEVICE
US	Granted	SunEdison, Inc.	8821825	12/978209	METHODS FOR PRODUCING SILANE
US	Granted	SunEdison, Inc.	8828324	12/977849	FLUIDIZED BED REACTOR SYSTEMS AND DISTRIBUTORS FOR USE IN SAME
US	Granted	SunEdison, Inc.	8834825	13/528386	PROCESSES FOR PRODUCING SILANE IN A BUBBLE COLUMN
US	Granted	SunEdison, Inc.	8849584	12/981074	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR FOR USE WITH THERMALLY DECOMPOSABLE SILICON-CONTAINING GAS
US	Granted	SunEdison, Inc.	8878112	13/380714	SOLAR POWER GENERATING APPARATUS AND SOLAR TRACKING METHOD

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison, Inc.	8906313	12/494006	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
US	Granted	SunEdison, Inc.	8946542	13/531779	SOLAR MODULE BONDING METHOD INTEGRATED INTO A PAN STRUCTURE
US	Granted	SunEdison, Inc.	8953350	13/439135	PHOTOVOLTAIC POWER CONVERTERS
US	Granted	SunEdison, Inc.	8956584	13/328029	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES THAT INVOLVE DISPROPORTIONATION OPERATIONS
US	Granted	SunEdison, Inc.	8960657	13/253509	SYSTEMS AND METHODS FOR CONNECTING AN INGOT TO A WIRE SAW
US	Granted	SunEdison, Inc.	8974761	14/335531	METHODS FOR PRODUCING SILANE
US	Granted	SunEdison, Inc.	8988182	13/425561	TRANSFORMERS AND METHODS FOR CONSTRUCTING TRANSFORMERS
US	Granted	SunEdison, Inc.	9011803	13/715642	SYSTEMS FOR PRODUCING SILANE
US	Granted	SunEdison, Inc.	9027289	13/562192	INTEGRATED THERMAL MODULE AND BACK PLATE STRUCTURE AND RELATED METHODS
US	Granted	SunEdison, Inc.	9061916	13/709318	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
US	Granted	SunEdison, Inc.	9103563	12/851310	INTEGRATED THERMAL MODULE AND BACK PLATE STRUCTURE AND RELATED METHODS
US	Granted	SunEdison, Inc.	9114996	13/628277	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison, Inc.	9114997	13/628282	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR
US	Granted	SunEdison, Inc.	9142616	14/596269	SILICON WAFERS WITH SUPPRESSED MINORITY CARRIER LIFETIME DEGRADATION
US	Granted	SunEdison, Inc.	9156705	12/977712	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF DICHLOROSILANE IN A FLUIDIZED BED REACTOR
US	Granted	SunEdison, Inc.	9170031	12/952095	ENERGY TRANSFER MODULE UTILIZING THERMAL POWER GENERATED BY SOLAR PANELS
US	Granted	SunEdison, Inc.	9174848	14/549145	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
US	Granted	SunEdison, Inc.	9188367	13/319290	SOLAR POWER GENERATION APPARATUS CAPABLE OF TRACKING SUNLIGHT
US	Published	SunEdison, Inc.	2016-0024685	14/341580	CRYSTAL GROWING SYSTEMS AND METHODS INCLUDING A PASSIVE HEATER
US	Published	SunEdison, Inc.	2016-0024686	14/341589	METHOD OF DESIGNING A PASSAGE THROUGH A WEIR FOR ALLOWING DILUTIONS OF IMPURITIES
US	Published	SunEdison, Inc.	2011-0300050	12/796360	TRICHLOROSILANE VAPORIZATION SYSTEM
US	Published	SunEdison, Inc.	2013-0136686	13/751294	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
US	Allowed	SunEdison, Inc.	2013-0168131	13/762416	ELECTRICAL CABLE HARNESS AND ASSEMBLY FOR TRANSMITTING AC ELECTRICAL POWER
US	Allowed	SunEdison, Inc.	2013-0236367	13/871205	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP SYSTEMS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Published	SunEdison, Inc.	2013-0284585	13/836018	METHODS FOR PURIFYING HALOSILANE-CONTAINING STREAMS
US	Published	SunEdison, Inc.	2014-0112831	13/656336	USING WAVELET DECOMPOSITION TO DETERMINE THE FLUIDIZATION QUALITY IN A FLUIDIZED BED REACTOR
US	Published	SunEdison, Inc.	2014-0166099	14/098918	CRYSTALLINE PHOTOVOLTAIC CELLS AND METHODS OF MANUFACTURING
US	Published	SunEdison, Inc.	2014-0174337	14/107743	WEIR FOR INHIBITTING MELT FLOW IN A CRUCIBLE
US	Published	SunEdison, Inc.	2014-0174338	14/134861	METHODS TO BOND SILICA PARTS
US	Granted	SunEdison, Inc.	2014-0182115	13/731219	METHODS FOR ALIGNING AN INGOT WITH MOUNTING BLOCK
US	Published	SunEdison, Inc.	2014-0183806	13/731222	SYSTEM AND METHOD FOR ALIGNING AN INGOT WITH MOUNTING BLOCK
US	Published	SunEdison, Inc.	2014-0261154	13/804585	CZOCHELSKI CRUCIBLE FOR CONTROLLING OXYGEN AND RELATED METHODS
US	Published	SunEdison, Inc.	2014-0261155	13/837092	CRUCIBLE FOR CONTROLLING OXYGEN AND RELATED METHODS
US	Granted	SunEdison, Inc.	2014-0271372	13/830514	GAS DECOMPOSITION REACTOR FEEDBACK CONTROL USING RAMAN SPECTROMETRY
US	Published	SunEdison, Inc.	2014-0375132	14/310654	SMART PHOTOVOLTAIC MODULES WITH HIGH DC-AC RATIOS
US	Published	SunEdison, Inc.	2015-0110702	14/582256	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES THAT INVOLVE DISPROPORTIONATION OPERATIONS
US	Published	SunEdison, Inc.	2015-0144056	14/087604	CRYSTAL GROWING SYSTEMS AND CRUCIBLES FOR ENHANCING HEAT TRANSFER TO A MELT
US	Published	SunEdison, Inc.	2015-0151977	14/622326	SYSTEMS FOR PRODUCING SILANE

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Published	SunEdison, Inc.	2015-0315028	14/799705	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR
US	Published	SunEdison, Inc.	2015-0315029	14/799728	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR
US	Published	SunEdison, Inc.	2015-0329366	14/650959	IMPROVING OPERATION OF FLUIDIZED BED REACTORS BY OPTIMIZING TEMPERATURE GRADIENTS VIA PARTICLE SIZE DISTRIBUTION CONTROL
US	Published	SunEdison, Inc.	2015-0333193	14/758467	INDIUM-DOPED SILICON WAFER AND SOLAR CELL USING THE
US	Published	SunEdison, Inc.	2015-0354088	14/758143	LIQUID DOPING SYSTEMS AND METHODS FOR CONTROLLED DOPING OF SINGLE CRYSTAL SEMICONDUCTOR MATERIAL
US	Published	SunEdison, Inc.	2015-0355017	14/297348	METHODS AND SYSTEMS FOR CALIBRATING IRRADIANCE SENSORS
US	Published	SunEdison, Inc.	2015-0360141	14/301968	INDUCTION HEATER SYSTEM FOR A FLUIDIZED BED REACTOR
US	Published	SunEdison, Inc.	2016-0024684	14/341584	WEIR FOR INHIBITTING MELT CONTAMINATION
US	Published	SunEdison, Inc.	2016-0056760	14/463316	METHODS AND SYSTEMS FOR PERFORMANCE RATIO-BASED SCHEDULING OF SOLAR MODULE MAINTENANCE
US	Published	SunEdison, Inc.	2016-0068399	14/840514	METHODS FOR SEPARATING HALOSILANES
US	Published	SunEdison, Inc.	2016-0079907	14/489178	A FIELD-ASSEMBLED AC PHOTOVOLTAIC MODULE
US	Published	SunEdison, Inc.	2016-0083864	14/857880	CRYSTAL PULLER FOR INHIBITING MELT CONTAMINATION

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
US	Granted	SunEdison, Inc.	D600638	29/328548	RECESSED SOLAR MODULE APPARATUS
US	Granted	SunEdison, Inc.	D601491	29/329770	THERMAL SOLAR CELL DESIGN
US	Granted	SunEdison, Inc.	D605652	29/328160	GRAPHICAL USER INTERFACE FOR COMPUTER
US	Granted	SunEdison, Inc.	D611895	29/342168	RECESSED SOLAR MODULE APPARATUS
US	Granted	SunEdison, Inc.	D613243	29/342710	THERMAL SOLAR CELL DESIGN
US	Granted	SunEdison, Inc.	D630576	29/344587	SOLAR MODULE APPARATUS
US	Granted	SunEdison, Inc.	D647843	29/343919	ENERGY TRANSFER MODULE
US	Granted	SunEdison, Inc.	D648425	29/351766	CONCENTRIC ADAPTOR
US	Granted	SunEdison, Inc.	D649554	29/346056	GRAPHICAL USER INTERFACE FOR COMPUTER
US	Granted	SunEdison, Inc.	D655210	29/385310	WEB-BASED THERMOSTAT WITH CALENDAR SCHEDULER
US	Granted	SunEdison, Inc.	D677619	29/401866	SOLAR MODULE ASSEMBLY
US	Granted	SunEdison, Inc.	D687839	29/393636	COMPUTER DISPLAY WITH GRAPHICAL USER INTERFACE
US	Granted	SunEdison, Inc.	D688620	29/357428	THERMAL SOLAR CELL DESIGN
US	Granted	SunEdison, Inc.	D697022	29/360845	SOLAR PAN WITH INSERTED FORM
US	Published	SunEdison, Inc. and SunEdison LLC	2015-0287858	14/243691	PHOTOVOLTAIC MODULE INTEGRATED MOUNTING AND ELECTRONICS SYSTEMS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
AU	Granted	SunEdison, Inc.	326737	200912235	THERMAL SOLAR CELL
AU	Granted	SunEdison, Inc.	327301	200912234	A THERMAL SOLAR CELL
AU	Granted	SunEdison, Inc.	327302	200912236	A THERMAL SOLAR CELL
CA	Granted	SunEdison, Inc.	131171	131171	THERMAL SOLAR CELL
CA	Granted	SunEdison, Inc.	134801	134801	SOLAR MODULE APPARATUS
CA	Granted	SunEdison, Inc.	142603	142603	SOLAR MODULE APPARATUS
CA	Allowed	SunEdison, Inc.	2656081	2656081	TOPOLOGIES, SYSTEMS AND METHODS FOR CONTROL OF SOLAR ENERGY SUPPLY SYSTEMS
CA	Published	SunEdison, Inc.	2761088	2761088	SOLAR POWER GENERATION APPARATUS CAPABLE OF TRACKING SUNLIGHT
CN	Published	Solaicx	104955991	2.014E+11	WEIR FOR IMPROVED CRYSTAL GROWTH IN A CONTINUOUS CZOCHRALSKI PROCESS
CN	Published	Solaicx	CN 104903496 A	2.014E+11	HEAT SHIELD FOR IMPROVED CONTINUOUS CZOCHRALSKI PROCESS
CN	Granted	SunEdison Inc.	101918311	2.009E+11	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
CN	Granted	SunEdison Inc.	102317201	2.01E+11	PROCESSES AND SYSTEMS FOR PRODUCING SILICON TETRAFLUORIDE FROM FLUOROSILICATES IN A FLUIDIZED BED REACTOR
CN	Published	SunEdison Inc.	CN 102686515A	201080060027.X	METHODS FOR PRODUCING SILICON TETRAFLUORIDE
CN	Published	SunEdison Inc.	CN 103153855A	201180049322.X	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES AND SYSTEMS
CN	Published	SunEdison Inc.	CN 103384640A	2.012E+11	METHODS AND SYSTEMS FOR PRODUCING SILANE
CN	Published	SunEdison Inc.	CN 103384642A	201180068297.X	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF DICHLOROSILANE IN A FLUIDIZED BED REACTOR
CN	Allowed	SunEdison Inc.	CN 103403525A	2.012E+11	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR FOR USE WITH THERMALLY DECOMPOSABLE SILICON-CONTAINING GAS
CN	Published	SunEdison Inc.	CN 103648980A	2.013E+11	PROCESSES FOR PRODUCING SILANE IN A BUBBLE COLUMN
CN	Published	SunEdison Inc.	CN 103842070A	2.013E+11	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR
CN	Published	SunEdison Inc.	CN 104159848A	2.013E+11	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
CN	Granted	SunEdison Inc.	ZL201080064926.7	2.011E+11	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
CN	Granted	SunEdison Inc.	ZL201180028210.6	2.012E+11	TRICHLOROSILANE VAPORIZATION SYSTEM
CN	Granted	SunEdison	ZL201180048451.7	2.012E+11	PROCESSES AND SYSTEMS FOR PURIFYING

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
		Inc.			SILANE
CN	Granted	SunEdison Inc.	ZL201180061070.2	2.012E+11	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES THAT INVOLVE DISPROPORTIONATION OPERATIONS
CN	Granted	SunEdison Inc.	ZL201180068759.8	2.012E+11	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
CN	Published	SunEdison Inc.	CN 103842069A	201280047638.X	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR
CN	Published	SunEdison, Inc.	104854041	2.014E+11	WEIR FOR INHIBITTING MELT FLOW IN A CRUCIBLE
CN	Published	SunEdison, Inc.	104870394	2.014E+11	METHODS TO BOND SILICA PARTS
CN	Published	SunEdison, Inc.	104956492	2.014E+11	CRYSTALLINE PHOTOVOLTAIC CELLS AND METHODS OF MANUFACTURING
CN	Published	SunEdison, Inc.	105026029	2.014E+11	IMPROVING OPERATION OF FLUIDIZED BED REACTORS BY OPTIMIZING TEMPERATURE GRADIENTS VIA PARTICLE SIZE DISTRIBUTION CONTROL
CN	Granted	SunEdison, Inc.	2.008E+11	200780029461.X	TOPOLOGIES & METHODS OF CONTROL FOR PV AND THERMAL INTEGRATED ENERGY SUPPLY SYSTEMS
CN	Published	SunEdison, Inc.	CN 104755161A	2.014E+11	USING WAVELET DECOMPOSITION TO DETERMINE THE FLUIDIZATION QUALITY IN A FLUIDIZED BED REACTOR
CN	Published	SunEdison, Inc.	CN 104822430A	2.014E+11	METHODS FOR PURIFYING HALOSILANE-CONTAINING STREAMS
CN	Granted	SunEdison, Inc.	ZL200980125275.5	2.01E+11	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
DE	Allowed	SunEdison, Inc.	2726410	12733305	PROCESSES FOR PRODUCING SILANE IN A BUBBLE COLUMN

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
DE	Granted	SunEdison, Inc.	2076719	7873764	TOPOLOGIES, SYSTEMS AND METHODS FOR CONTROL OF SOLAR ENERGY SUPPLY SYSTEMS
DE	Allowed	SunEdison, Inc.	2630081	11761812	PRODUCTION OF POLYCRYSTALLINE SILICON IN CLOSED-LOOP PROCESSES AND SYSTEMS
DE	Published	SunEdison, Inc.	1.12E+11	1.12E+11	MODIFIED ZERO VOLTAGE TRANSITION (ZVT) FULL BRIDGE CONVERTER AND PHOTOVOLTAIC (PV) ARRAY USING THE SAME
DE	Granted	SunEdison, Inc.	4.02E+11	4.02E+11	RECESSED SOLAR MODULE APPARATUS
DE	Granted	SunEdison, Inc.	4.02E+11	4.02E+11	THERMAL SOLAR CELL DESIGN
DE	Granted	SunEdison, Inc.	4.02E+11	4.02E+11	SOLAR MODULE APPARATUS
DE	Granted	SunEdison, Inc.	602008036841.6-08	08833015.4-1218	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
DE	Granted	SunEdison, Inc.	602009010888.3-08	9774266.2	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
DE	Granted	SunEdison, Inc.	602011018049.5-08	11761807	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
DE	Granted	SunEdison, Inc.	602011021267.2-08	11822852	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
DE	Published	SunEdison, Inc.	DE112013002206	1.12E+11	METHODS FOR PURIFYING HALOSILANE-CONTAINING STREAMS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
EP	Validation	SunEdison, Inc.	1833759	5851459.7	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME
EP	Validation	SunEdison, Inc.	1900684	7120114.9	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME
EP	Validation	SunEdison, Inc.	1900686	7120116.4	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME
EP	Validation	SunEdison, Inc.	2373577	9775480.8	PROCESSES AND SYSTEMS FOR PRODUCING SILICON TETRAFLUORIDE FROM FLUOROSILICATES IN A FLUIDIZED BED REACTOR
EP	Allowed	SunEdison, Inc.	2726410	12733305	PROCESSES FOR PRODUCING SILANE IN A BUBBLE COLUMN
EP	Published	SunEdison LLC	2705414	12729760	SOLAR POWER SYSTEMS INCLUDING CONTROL HUBS
EP	Validation	SunEdison, Inc.	2076719	7873764	TOPOLOGIES, SYSTEMS AND METHODS FOR CONTROL OF SOLAR ENERGY SUPPLY SYSTEMS
EP	Validation	SunEdison, Inc.	2190780	08833015.4-1218	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
EP	Published	SunEdison, Inc.	2286645	9751481.4	AN AC PHOTOVOLTAIC MODULE AND INVERTER ASSEMBLY
EP	Validation	SunEdison, Inc.	2303448	9774266.2	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
EP	Validation	SunEdison, Inc.	2519470	10813031	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
EP	Published	SunEdison, Inc.	2580159	11792025	TRICHLOROSILANE VAPORIZATION SYSTEM

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
EP	Validation	SunEdison, Inc.	2624929	11761807	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
EP	Allowed	SunEdison, Inc.	2630081	11761812	PRODUCTION OF POLYCRYSTALLINE SILICON IN CLOSED-LOOP PROCESSES AND SYSTEMS
EP	Allowed	SunEdison, Inc.	2654912	11808477	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES THAT INVOLVE DISPROPORTIONATION OPERATIONS
EP	Published	SunEdison, Inc.	2655247	11806053	METHODS AND SYSTEMS FOR PRODUCING SILANE
EP	Published	SunEdison, Inc.	2655253	11808418	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF DICHLOROSILANE IN A FLUIDIZED BED REACTOR
EP	Validation	SunEdison, Inc.	2659256	11822852	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
EP	Published	SunEdison, Inc.	2760576	12770402	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF SILANE IN A FLUIDIZED BED REACTOR
ES	Granted	SunEdison, Inc.	507926	507926	THERMAL SOLAR CELL DESIGN
FR	Granted	SunEdison, Inc.	2076719	7873764	TOPOLOGIES, SYSTEMS AND METHODS FOR CONTROL OF SOLAR ENERGY SUPPLY SYSTEMS
FR	Granted	SunEdison, Inc.	2659256	11822852	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
GB	Granted	SunEdison, Inc.	2076719	7873764	TOPOLOGIES, SYSTEMS AND METHODS FOR CONTROL OF SOLAR ENERGY SUPPLY SYSTEMS
GB	Published	SunEdison, Inc.	2517336	1420728.6	SOFT SWITCHING POWER CONVERTERS
GB	Granted	SunEdison, Inc.	2659256	11822852	SYSTEMS AND METHODS FOR PARTICLE SIZE

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
		Inc.			DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
IN	Published	Solaicx	4058/DEL.NP/2015	4058/DEL.NP/2015	HEAT SHIELD FOR IMPROVED CONTINUOUS CZOCHRALSKI PROCESS
IN	Published	SunEdison LLC	3304/DEL.NP/2015	3304/DEL.NP/2015	BALLASTED FIXED TILT RACKING SYSTEM
IN	Published	SunEdison LLC	4993/DEL.NP/2014	4993/DEL.NP/2014	METHODS AND SYSTEMS FOR EVAPORATION CONTROL AND POWER PRODUCTION
IN	Published	SunEdison LLC		4699/DEL.NP/2014	ADJUSTABLE TILT ANGLE DEVISE FOR PHOTOVOLTAIC ARRAYS
IN	Published	SunEdison, Inc.	11291/DEL.NP/2012	11291/DEL.NP/2012	TRICHLOROSILANE VAPORIZATION SYSTEM
IN	Published	SunEdison, Inc.	5121/DEL.NP/2012	5121/DEL.NP/2012	METHODS FOR PRODUCING SILICON TETRAFLUORIDE
IN	Published	SunEdison, Inc.	5176/DEL.NP/2012	5176/DEL.NP/2012	METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS USING PERIPHERAL SILICON TETRACHLORIDE
IN	Published	SunEdison, Inc.		5768/DEL.NP/2012	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
IN	Published	SunEdison, Inc.		2710/MUMNP/2008	TOPOLOGIES & METHODS OF CONTROL FOR PV AND THERMAL INTEGRATED ENERGY SUPPLY SYSTEMS
JP	Granted	SunEdison, Inc.	5238258	2007-541287	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME
JP	Granted	SunEdison, Inc.	5623478	2012-187792	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME
JP	Granted	SunEdison, Inc.	5676471	2011-542347	PROCESSES AND SYSTEMS FOR PRODUCING SILICON TETRAFLUORIDE FROM FLUOROSILICATES IN A FLUIDIZED BED REACTOR

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
JP	Granted	Solaicx	5059596	2007-501001	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
JP	Granted	Solaicx	5731349	2011-220927	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
JP	Granted	SunEdison, Inc.	1379614	2009-014151	THERMAL SOLAR CELL DESIGN
JP	Granted	SunEdison, Inc.	5568142	2012-546530	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
JP	Granted	SunEdison, Inc.	5654872	2010-525895	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
JP	Granted	SunEdison, Inc.	5658763	2012-546531	METHODS FOR PRODUCING SILICON TETRAFLUORIDE
JP	Granted	SunEdison, Inc.	5694927	2011-516787	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
JP	Granted	SunEdison, Inc.	5826854	2013-532822	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
JP	Published	SunEdison, Inc.	2013-540095	2013-534917	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES AND SYSTEMS
JP	Published	SunEdison, Inc.	2014-505649	2013-546247	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES THAT INVOLVE DISPROPORTIONATION OPERATIONS
JP	Published	SunEdison, Inc.	2014-531379	2014-518647	PROCESSES FOR PRODUCING SILANE IN A BUBBLE COLUMN
JP	Published	SunEdison, Inc.	2015-120160	2015-021536	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
KR	Granted	SunEdison, Inc.	10-1321675	10-2011-7000929	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
KR	Granted	SunEdison, Inc.	10-1370104	10-2012-7007690	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME
KR	Granted	SunEdison, Inc.	1279709	2012-7013412	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
KR	Granted	SunEdison, Inc.	1279736	2012-7013411	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
KR	Granted	SunEdison, Inc.	1279756	7013413/2012	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
KR	Granted	SunEdison, Inc.	1279770	7026631/2011	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
KR	Granted	SunEdison, Inc.	10-1040754	10-2009-0039897	PLASTIC BEARING ASSEMBLY FOR SOLAR TRACKING APPARATUS
KR	Granted	SunEdison, Inc.	10-1195740	10-2009-0058215	SOLAR GENERATING APPARATUS AND TRACKING METHOD THEREOF
KR	Granted	SunEdison, Inc.	10-1216256	102006/7019998	SYSTEM FOR CONTINUOUS GROWING OF MONOCRYSTALLINE SILICON
KR	Granted	SunEdison, Inc.	10-1378184	10-2010-7007571	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
KR	Granted	SunEdison, Inc.	10-1403129	10-2009-0039896	SOLAR GENERATING APPARATUS WITH SOLAR TRACKER
KR	Granted	SunEdison, Inc.	10-1447310	10-2010-7007329	METHOD FOR TREATMENT OF A GAS STREAM CONTAINING SILICON TETRAFLUORIDE AND HYDROGEN CHLORIDE
KR	Granted	SunEdison, Inc.	10-1527623	10-2010-7029587	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
MY	Granted	SunEdison, Inc.	MY-150562-A	PI 2010000901	METHOD FOR TREATMENT OF A GAS STREAM CONTAINING SILICON TETRAFLUORIDE AND HYDROGEN CHLORIDE

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
NO	Granted	SunEdison, Inc.	2190780	08833015.4-1218	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
NO	Granted	SunEdison, Inc.	2624929	11761807	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
NO	Allowed	SunEdison, Inc.	2630081	11761812	PRODUCTION OF POLYCRYSTALLINE SILICON IN CLOSED-LOOP PROCESSES AND SYSTEMS
NO	Granted	SunEdison, Inc.	2659256	11822852	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
RU	Granted	SunEdison, Inc.	2560377	2.012E+09	METHODS FOR PRODUCING SILICON TETRAFLUORIDE
SG	Granted	SunEdison, Inc.	172067	201104230-6	PROCESSES AND SYSTEMS FOR PRODUCING SILICON TETRAFLUORIDE FROM FLUOROSILICATES IN A FLUIDIZED BED REACTOR
SG	Granted	SunEdison, Inc.	159649	201001324-1	METHOD FOR TREATMENT OF A GAS STREAM CONTAINING SILICON TETRAFLUORIDE AND HYDROGEN CHLORIDE
SG	Granted	SunEdison, Inc.	159650	201001325-8	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
SG	Granted	SunEdison, Inc.	167222	201009026-4	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
SG	Granted	SunEdison, Inc.	174814	201106632-1	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
TW	Published	SunEdison, Inc.	201031596	98143408	PROCESSES AND SYSTEMS FOR PRODUCING SILICON TETRAFLUORIDE FROM FLUOROSILICATES IN A FLUIDIZED BED REACTOR
TW	Granted	SunEdison, Inc.	1338723	94139670	HIGH PURITY GRANULAR SILICON AND METHOD OF MANUFACTURING THE SAME

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
TW	Published	Solaicx	201432100	102143928	WEIR FOR IMPROVED CRYSTAL GROWTH IN A CONTINUOUS CZOCHRALSKI PROCESS
TW	Published	Solaicx	201437440	102143929	HEAT SHIELD FOR IMPROVED CONTINUOUS CZOCHRALSKI PROCESS
TW	Allowed	SunEdison, Inc.	201217707	100120069	TRICHLOROSILANE VAPORIZATION SYSTEM
TW	Published	SunEdison, Inc.	201231939	100149316	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR FOR USE WITH THERMALLY DECOMPOSABLE SILICON-CONTAINING GAS
TW	Published	SunEdison, Inc.	201305051	101123333	PROCESSES FOR PRODUCING SILANE IN A BUBBLE COLUMN
TW	Published	SunEdison, Inc.	201321155	101136991	SYSTEMS AND METHODS FOR CONNECTING AN INGOT TO A WIRE SAW
TW	Published	SunEdison, Inc.	201331214	101148129	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
TW	Published	SunEdison, Inc.	201348133	102114946	METHODS FOR PURIFYING HALOSILANE-CONTAINING STREAMS
TW	Published	SunEdison, Inc.	201428993	102146267	CRYSTALLINE PHOTOVOLTAIC CELLS AND METHODS OF MANUFACTURING
TW	Published	SunEdison, Inc.	201447057	103109829	CRUCIBLE ASSEMBLY FOR CONTROLLING OXYGEN AND RELATED METHODS
TW	Published	SunEdison, Inc.	201500602	103109531	CZOCHRALSKI CRUCIBLE FOR CONTROLLING OXYGEN AND RELATED METHODS
TW	Published	SunEdison, Inc.	201501795	103109797	GAS DECOMPOSITION REACTOR FEEDBACK CONTROL USING RAMAN SPECTROMETRY
TW	Published	SunEdison, Inc.	201525203	103140514	CRYSTAL GROWING SYSTEMS AND CRUCIBLES FOR ENHANCING HEAT

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
					TRANSFER TO A MELT
TW	Granted	SunEdison, Inc.	1403610	100135943	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES AND SYSTEMS
TW	Granted	SunEdison, Inc.	1429588	100147557	METHODS AND SYSTEMS FOR PRODUCING SILANE
TW	Granted	SunEdison, Inc.	1437139	98122121	FLUIDIZED BED REACTOR SYSTEMS AND METHODS FOR REDUCING THE DEPOSITION OF SILICON ON REACTOR WALLS
TW	Granted	SunEdison, Inc.	1449666	97136194	PROCESSES FOR PURIFICATION OF SILICON TETRAFLUORIDE
TW	Granted	SunEdison, Inc.	1466826	100135942	PROCESSES AND SYSTEMS FOR PURIFYING SILANE
TW	Granted	SunEdison, Inc.	1474976	100147559	PRODUCTION OF POLYCRYSTALLINE SILICON IN SUBSTANTIALLY CLOSED-LOOP PROCESSES THAT INVOLVE DISPROPORTIONATION OPERATIONS
TW	Granted	SunEdison, Inc.	1476156	99146705	METHODS FOR PRODUCING ALUMINUM TRIFLUORIDE
TW	Granted	SunEdison, Inc.	1477448	99146706	METHODS FOR PRODUCING SILICON TETRAFLUORIDE
TW	Granted	SunEdison, Inc.	1486307	102114091	METHODS AND SYSTEMS FOR PRODUCING SILANE
TW	Granted	SunEdison, Inc.	1511789	100149315	SYSTEMS AND METHODS FOR PARTICLE SIZE DETERMINATION AND CONTROL IN A FLUIDIZED BED REACTOR
TW	Granted	SunEdison, Inc.	1521566	100147530	PRODUCTION OF POLYCRYSTALLINE SILICON BY THE THERMAL DECOMPOSITION OF DICHLOROSILANE IN A FLUIDIZED BED REACTOR
WO	Published	SunEdison LLC	2015/153365	PCT/US2015/023093	PHOTOVOLTAIIC MODULE INTEGRATED MOUNTING AND ELECTRONICS SYSTEMS

COUNTRY	STATUS	GRANTOR	PATENT NO./PUB. NO.	APPLICATION NUMBER	TITLE
WO	Published	SunEdison, Inc.	WO 2015/0116911	PCT/US2015/013719	SOLAR MODULE WITH INTEGRATED COLLAPSIBLE RACK ASSEMBLY
WO	Published	SunEdison, Inc.	WO 2015/084602	PCT/US2014/066681	CRYSTAL GROWING SYSTEM AND CRUCIBLES FOR ENHANCING THE HEAT TRANSFER TO THE MELT BY DESIGNING A DOUBLE CRUCIBLE

PATENT

REEL: 038556 FRAME: 0773

RECORDED: 04/28/2016