PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT2869535

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
NANOSOLAR, INC.	12/23/2013

RECEIVING PARTY DATA

Name:	AERIS CAPITAL SUSTAINABLE IP LTD.
Street Address:	P.O. BOX 715
Internal Address:	C/O AVALON MANAGEMENT LIMITED, LANDMARK SQUARE, 1ST FLOOR, 64 EARTH CLOSE
City:	GRAND CAYMAN
State/Country:	CAYMAN ISLANDS
Postal Code:	KY1-1107

PROPERTY NUMBERS Total: 8

Property Type	Number
Patent Number:	8372734
Application Number:	11394849
Application Number:	11361688
PCT Number:	US0867569
Application Number:	13776638
Application Number:	12176318
Application Number:	12176321
PCT Number:	US0762766

CORRESPONDENCE DATA

Fax Number: (510)668-0239

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: 5106680965
Email: stephen@jdipatent.com
Correspondent Name: JOSHUA D. ISENBERG JDI PATENT
Address Line 1: 809 CORPORATE WAY
Address Line 4: FREMONT, CALIFORNIA 94539

ATTORNEY DOCKET NUMBER:	NSL-072A
NAME OF SUBMITTER:	JOSHUA D. ISENBERG

SIGNATURE:	/Joshua D. Isenberg, Reg. No. 41088/
DATE SIGNED:	05/23/2014

Total Attachments: 24
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source=IP Assignment Appendix A - Patents#page16.tif
source=Notice#page1.tif
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USPTO ASSIGNMENT

Pursuant to paragraphs 3a and 3b of the Agreement for Surrender of IP Collateral and Strict Foreclosure, dated for reference purposes as of September 30, 2013 ("September Agreement"), made by and between aeris Capital Sustainable IP, a Cayman exempted company ("Aeris IP" or "Lender"), as successor by assignment from aeris Capital Sustainable Impact Private Investment Fund Cayman L.P., and Nanosolar, Inc., a California corporation (as a party to the September Agreement, "Obligor"), and in order to give effect in full to the September Agreement,

THIS USPTO ASSIGNMENT is made by **NANOSOLAR, INC.**, a California Corporation having Offices at **SAN JOSE, CALIFORNIA** (as a party to this USPTO Assignment, the "Assignor") in favor of Aeris IP as follows:

WHEREAS, Assignor owns certain INTELLECTUAL PROPERTY more fully described in the September Agreement; and

WHEREAS Aeris IP holds, by assignment from aeris Capital Sustainable Impact Private Investment Fund Cayman L.P., all right, title and interest in and to certain collateral assignments made by Assignor in respect of the INTELLECTUAL PROPERTY as such collateral assignments have been filed or recorded from time to time prior to the September Agreement and the date of this USPTO Assignment (collectively the "Collateral Assignments"); and

WHEREAS, as further assurances made pursuant to the September Agreement, Aeris IP desires to release the Collateral Assignments prior to the recordation of assignments by Assignor to Aeris IP as assignee; and

WHEREAS, Assignor desires to provide further assurances pursuant to the September Agreement by the filing of this USPTO Assignment to give constructive notice by such filing of the assignment to Aeris IP of the INTELLECTUAL PROPERTY; and

WHEREAS, aeris CAPITAL Sustainable IP Ltd., a body having corporate powers under the laws of **the Cayman Islands,** and having its offices at **c/o Avalon Management Limited, Landmark Square, 1st Floor, 64 Earth Close, PO Box 715, Grand Cayman, KY1-1107, Cayman Islands**, is desirous of reflecting, as a matter of record, that it has obtained all right, title and interest previously held by Assignor in and to said INTELLECTUAL PROPERTY, Inventions and, said Letters Patent, said Applications for Letters Patent.

NOW, THEREFORE, for good and valuable consideration as provided in the September Agreement, the receipt of which is therein and hereby acknowledged:

DEFINITIONS

"Intellectual Property" means new and useful Inventions which are described in Letters Patent Applications for Letters Patent having the, patent numbers, application numbers, and filing date as listed in Appendix A, and in and to any Letters Patent, United States or foreign, to be obtained therefor and thereon, and to any and all improvements which are disclosed in said Letters Patent and Said Applications for Letters Patent listed in Appendix A; any Letters Patent which has been or may be granted for said inventions in the United States of America and any foreign country; any division, continuation, or continuation-in-part of said application; any reissue or extension of said Letters Patent; and all rights under the International Convention for the Protection of Industrial Property, certain Trademark Applications and Trademarks listed in Appendix B, and in and to any Trademarks, United States, state, common law, or foreign, to be obtained on the marks therefor and thereon, and to other Inventions, Letters Patent, Applications for Letters Patent, Trademarks, Trademark Applications, Industrial Designs, Copyrights, Know How, Trade Secrets or other intellectual property rights not listed in which said Assignor has an ownership interest.

Said Appendix A and said Appendix B are part of this USPTO Assignment and are incorporated herein by reference for all purposes.

To the extent an application and filing date for any Application for Letters Patent or Trademark Application is unknown, said Assignor hereby authorizes and requests their attorney, Joshua D. Isenberg, of 809 Corporate Way, Fremont, California, to insert here in parentheses (Application number_____, filed_____) the application number and filing date of said Application when known.

"know how" means factual knowledge not capable of precise, separate description but which, when used in an accumulated form, after being acquired as the result of trial and error, gives to the one acquiring it an ability to produce something which he otherwise would not have known how to produce with the same accuracy or precision found necessary for commercial success.

"Trade Secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being

readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

GRANT

1. Assignor has sold, assigned, transferred and set over to Aeris IP pursuant to the September Agreement, and does hereby sell, assign, transfer and set over unto said Aeris IP, the entire right, title and interest in, to and under said INTELLECTUAL PROPERTY, including the entire right title and interest in said inventions; said right, title and interest to be held and enjoyed by said Aeris IP for its own use and behoove to the full end of the term for which Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by the Assignor, had this sale and assignment not been made.

2. Assignor has sold, assigned, transferred and set over to Aeris IP pursuant to the September Agreement, and does hereby sell, assign, transfer and set over unto said Aeris IP all Inventions conceived or reduced to practice by any and all employees of Assignor during the time of employment of such employees and one year thereafter, and all for U.S. and foreign letters patent disclosing any such Inventions, and all U.S. and foreign letters patent granted upon such Inventions, all of which Inventions conceived by employees of Assignor have been assigned to said Aeris IP.

3. Aeris IP hereby warrants and represents that, at the time of execution and delivery of these presents, said Aeris IP is the lawful owner of the entire right, title and interest in and to said INTELLECTUAL PROPERTY, and that said Aeris IP has not entered into any assignment, contract or understanding in conflict herewith.

4. Assignor has covenented and agreed in the September Agreement and hereby expressly reaffirms and agrees to assist and cooperate with said Aeris IP, whereby said Aeris IP may enjoy to the fullest extent said right, title and interest herein conveyed, provided, however, that the entire expense which may be incurred by said Assignor in lending such assistance and cooperation be paid by Aeris IP. Such cooperation shall include: (a) prompt execution of all papers (prepared at the expense of Aeris IP) which are deemed necessary or desirable by Aeris IP to perfect said right, title and interest herein conveyed, (b) prompt execution of all petitions, oaths, specifications, declarations and other papers (prepared at the expense of Aeris IP) which are deemed necessary or desirable by Aeris IP for filing or prosecuting in the United States or any foreign country said application, any Patent or Trademark application which is a division, continuation, or continuation-in-part of said application, any reissue application for any Letters Patent granted on said application, or for any interference proceeding involving said application or Letters Patent granted thereon; and (c) prompt assistance and cooperation in the prosecution of all legal proceedings involving said inventions, said application, or Letters Patent granted thereon, including oppositions, cancellation proceedings, priority contests, public use proceedings and court actions.

5. The terms, covenants and conditions of this Assignment shall inure to the benefit of said Aeris IP, its successors, assigns and/or other legal representatives, and shall be binding upon said Assignor, its heirs, legal representatives and assigns.

6. Aeris IP, as successor by assignment from aeris Capital Sustainable Impact Private Investment Fund Cayman L.P., and as the holder of such of the obligations originally owed by Assignor to aeris Capital Sustainable Impact Private Investment Fund Cayman L.P. as are secured by the INTELLECTUAL PROPERTY described in the Collateral Assignments, and as successor to all rights in respect of the Collateral Assignments and the INTELLECTUAL PROPERTY described in the Collateral Assignments, hereby requests the Commissioner of Patents and Trademarks to cause to be filed and recorded the release by Aeris IP of the security interest reflected in the Collateral Assignments.

7. Assignor and Aeris IP hereby further request the Commissioner of Patents and Trademarks to issue said Letters Patent of the United States to said Aeris IP as the assignee of said Inventions, and that the issuance of said Letters Patent of the United States to Aeris IP of said Inventions be free of the Collateral Assignments, the release and termination of which were recorded prior in time to issuance thereof.

IN WITNESS WHEREOF said Assignor and Aeris IP have executed and delivered this instrument on the date noted below.

Nanosolar, Inc.

By: _____ 12/23/13
Karl Steigele, Chief Executive Officer — Date

aeris CAPITAL Sustainable IP Ltd.

By: _____ 28th March 2014
Date

Ralph Woodford
Print Name and title

By: _____ 28th March 2014
Date

Greg Link
Print Name and title

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	12/602,023	United States	18842.165	PRODUCTION METHOD OF PISTON FOR COMPRESSOR	Utility: Non-Provisional	Yoshitaka Ootsuki
7,091,136	10/474,259	United States	038725.49888US	METHOD OF FORMING SEMICONDUCTOR COMPOUND FILM FOR FABRICATION OF ELECTRONIC DEVICE AND FILM PRODUCED BY SAME	Utility: Non-Provisional	Bulent M. Basol
7,521,344	11/278,662	United States	067336-0326214	METHOD OF FORMING SEMICONDUCTOR COMPOUND FILM FOR FABRICATION OF ELECTRONIC DEVICE AND FILM PRODUCED BY SAME USING A SOLID SOLUTION	Utility: Non-Provisional	Bulent M. Basol
6,268,014	08/942,872	United States	8942872	METHOD FOR FORMING SOLAR CELL MATERIALS FROM PARTICULARS	Utility: Non-Provisional	Chris Eberspacher
	12/813,500	United States	NanoP109/NSL-0198	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH IMPROVED CONDENSER	Utility: Non-Provisional	Sam Kao
	13/653,380	United States	NanoP116CIP	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Brent J. Bollman
6,852,920	10/319,406	United States	NSL-0001	NANO-ARCHITECTED/ASSEMBLED SOLAR ELECTRICITY CELL	Utility: Non-Provisional	Brian M. Sager
	IN 7088/DELNP/2007	India	NSL-0019B IN	Metallic Dispersion	Utility: Foreign	
7,247,346	10/426,242	United States	NSL-002	COMBINATORIAL FABRICATION AND HIGH-THROUGHPUT SCREENING OF OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Brian M. Sager
	IN 2044/DELNP/2007	India	NSL-0038 IN	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
7,535,019	10/369,338	United States	NSL-004	OPTOELECTRONIC FIBER	Utility: Non-Provisional	Brian M. Sager
	IN 5413/DELNP/2007	India	NSL-0043 IN	Optoelectronic Architecture Having Compound Conducting Substrate	Utility: Foreign	
	IN 2764/DELNP/2008	India	NSL-0044 IN	Photovoltaic Module with Improved Backplane	Utility: Foreign	
	IN 4581/DELNP/2008	India	NSL-0045 IN	Chalcogenide Solar Cell	Utility: Foreign	
	12/435,377	United States	NSL-004B	Optoelectronic fiber	Utility: Non-Provisional	Brian M. Sager
7,291,782	10/290,119	United States	NSL-005	OPTOELECTRONIC DEVICE AND FABRICATION METHOD	Utility: Non-Provisional	Brian M. Sager
	IN 7599/DELNP/2008	India	NSL-0061 IN	High-Efficiency Solar Cell with Insulated Vias	Utility: Foreign	
	11/395,438	United States	NSL-0069	High-throughput printing of chalcogen layer and the use of an inter-metallic material	Utility: Non-Provisional	Jeroen K.J. Van Duren
	IN 7198/DELNP/2008	India	NSL-0069 IN	High-Throughput Printing of Chalcogen Layer and the Use of an	Utility: Foreign	
7,253,017	10/303,665	United States	NSL-007	MOLDING TECHNIQUE FOR FABRICATION OF OPTOELECTRONIC	Utility: Non-Provisional	Martin R. Roscheisen
	IN 7200/DELNP/2008	India	NSL-0070 IN	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Microflake Particles	Utility: Foreign	
	IN 7201/DELNP/2008	India	NSL-0071 IN	High-Throughput Formation of Semiconductor Layer by Use of Chalcogen and Inter-metallic Material	Utility: Foreign	
	IN 7199/DELNP/2008	India	NSL-0072 IN	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Nanoflake Particles	Utility: Foreign	
7,594,982	10/338,079	United States	NSL-008	NANOSTRUCTURED TRANSPARENT CONDUCTING ELECTRODE	Utility: Non-Provisional	Martin R. Roscheisen
	JP 2009522027	Japan	NSL-0086A JP	Individually Encapsulated Solar Cells and/or Solar Cell Strings	Utility: Foreign	
6,936,761	10/403,997	United States	NSL-009	TRANSPARENT ELECTRODE, OPTOELECTRONIC APPARATUS AND DEVICES	Utility: Non-Provisional	Karl Pichler
	EP 6801573.4	European Patent Office	NSL-0092 EP	Photovoltaic Devices with Conductive Barrier Layers and Foil Substrates	Utility: Foreign	
	IN 1267/DELNP/2008	India	NSL-0092 IN	Photovoltaic Devices with Conductive Barrier Layers and Foil Substrates	Utility: Foreign	
7,645,934	10/427,749	United States	NSL-010	NANOSTRUCTURED LAYER AND FABRICATION METHODS	Utility: Non-Provisional	Jacqueline Fidanza
	11/924,594	United States	NSL-0100A	EDGE MOUNTABLE ELECTRICAL CONNECTION ASSEMBLY	Utility: Non-Provisional	Jeremy H. Scholz
	EP 7863527.3	European Patent Office	NSL-0100A EP	Edge Mountable Electrical Connection Assembly	Utility: Foreign	

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	11/963,431	United States	NSL-0101	CONTROLLED LAMINATION THICKNESS FOR SOLAR MODULES AND DEVICES	Utility: Non-Provisional	Paul M. Adriani
	11/964,694	United States	NSL-0102	STRUCTURES FOR LOW COST, RELIABLE SOLAR MODULES	Utility: Non-Provisional	Paul M. Adriani
	EP 7874389.5	European Patent Office	NSL-0102 EP	Structures for Low Cost, Reliable Solar Modules	Utility: Foreign	
	12/038,804	United States	NSL-0102A	Structures for Low Cost, Reliable Solar Modules	Utility: Non-Provisional	Paul M. Adriani
	12/060,193	United States	NSL-0103	FORMATION OF PHOTOVOLTAIC ABSORBER LAYERS ON FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	12/060,221	United States	NSL-0103A	FORMATION OF PHOTOVOLTAIC ABSORBER LAYERS ON FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	EP 8745698.4	European Patent Office	NSL-0103A EP	Formation of Photovoltaic Absorber Layers on Foil Substrates	Utility: Foreign	
	11/740,915	United States	NSL-0103B	FORMATION OF PHOTOVOLTAIC ABSORBER LAYERS ON FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	11/747,001	United States	NSL-0103C	FORMATION OF PHOTOVOLTAIC ABSORBER LAYERS ON FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	13/645,443	United States	NSL-0103D/NanoP113C1	FORMATION OF PHOTOVOLTAIC ABSORBER LAYERS ON FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	12/107,045	United States	NSL-0104	METHOD AND SYSTEM FOR SUBSTRATE CONDITIONING	Utility: Non-Provisional	James R. Sheats
	12/601,240	United States	NSL-0105	Cost Effective, Elongate Member Mounting System For Photovoltaic Devices	Utility: Non-Provisional	Robert Stancel
	EP 8756258.3	European Patent Office	NSL-0105 EP	Cost Effective, Elongate Member Mounting System For Photovoltaic Devices	Utility: Foreign	
	12/663,520	United States	NSL-0106	EDGE MOUNTABLE ELECTRICAL CONNECTION ASSEMBLY	Utility: Non-Provisional	Robert Stancel
	12/136,016	United States	NSL-0106 (old)	Edge Mountable Electrical Connection Assembly	Utility: Non-Provisional	Robert Stancel
8,471,141	12/116,932	United States	NSL-0107	Structures for Low Cost, Reliable Solar Roofing	Utility: Non-Provisional	Robert Stancel
	11/757,923	United States	NSL-0108	POLYCRYSTALLINE OPTOELECTRONIC DEVICES BASED ON TEMPLATING TECHNIQUE	Utility: Non-Provisional	Martin R. Roscheisen
	12/177,133	United States	NSL-0109	Rapid Mounting System for Solar Modules	Utility: Non-Provisional	Robert Stancel
	13/530,375	United States	NSL-0109A/NanoP074C1	RAPID MOUNTING SYSTEM FOR SOLAR MODULES	Utility: Non-Provisional	Robert Stancel
	12/203,062	United States	NSL-0111	Sputtering Assembly	Utility: Non-Provisional	Geoffrey T. Green
	12/202,030	United States	NSL-0112	Edge Mountable Electrical Connection Assembly	Utility: Non-Provisional	Robert Stancel
	EP 8730315.2	European Patent Office	NSL-0112 EP	Edge Mountable Electrical Connection Assembly	Utility: Foreign	
	13/589,115	United States	NSL-0112A/NanoP097C1	Edge Mountable Electrical Connection Assembly	Utility: Non-Provisional	Robert Stancel
	12/330,499	United States	NSL-0113	Methods and Devices For Processing A Precursor Layer In a Group VIA Environment	Utility: Non-Provisional	Brent J. Bollman
	EP 2008860654	European Patent Office	NSL-0113 EP	Methods and Devices for Processing a Precursor Layer in a Group VIA Environment	Utility: Foreign	
	12/398,161	United States	NSL-0113A	Methods and Devices for Processing a Precursor Layer in a Group VIA Environment	Utility: Non-Provisional	Brent J. Bollman
	EP 2009762961.2	European Patent Office	NSL-0113A EP	Methods and Devices for Processing a Precursor Layer in a Group VIA Environment	Utility: Foreign	
	12/875,060	United States	NSL-0113C	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Brent J. Bollman
	EP20100814527	European Patent Office	NSL-0113C EP	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Foreign	Brent J. Bollman
	20120528070	Japan	NSL-0113C JP	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Foreign	
	PCT/US10/47748	World Intellectual Property Organization	NSL-0113C PC	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: PCT	
	11/845,567	United States	NSL-0114	UNIFORM THERMAL PROCESSING BY INTERNAL IMPEDANCE HEATING OF ELONGATED SUBSTRATES	Utility: Non-Provisional	Gregory A. Miller
	12/203,093	United States	NSL-0115	Slidable Mounting System for Solar Modules	Utility: Non-Provisional	Robert Stancel

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	12/203,117	United States	NSL-0116	Solution Deposition Assembly	Utility: Non-Provisional	Yann Roussillon
	14/101,187	United States	NSL-0116/CON	Solution Deposition Assembly	Utility: Non-Provisional	Yann Roussillon
	EP 8828879	European Patent Office	NSL-0116 EP	Improved Deposition Assembly	Utility: Foreign	
	12/738,392	United States	NSL-0116A	SOLUTION DEPOSITION ASSEMBLY	Utility: Non-Provisional	Yann Roussillon
	EP 8859696	European Patent Office	NSL-0116A EP	Improved Solution Deposition Assembly	Utility: Foreign	
	JP 2010530165	Japan	NSL-0116A JP	Improved Solution Deposition Assembly	Utility: Foreign	
	12/369,524	United States	NSL-0116B	Solution Deposition Assembly	Utility: Non-Provisional	Yann Roussillon
	12/676,138	United States	NSL-0117	Mounting System for Solar Modules	Utility: Non-Provisional	Robert Stancel
7,732,232	11/865,691	United States	NSL-0118	SERIES INTERCONNECTED OPTOELECTRONIC DEVICE MODULE ASSEMBLY	Utility: Non-Provisional	James R. Sheats
7,511,217	10/419,708	United States	NSL-012	INTER FACIAL ARCHITECTURE FOR NANOSTRUCTURED OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Martin R. Roscheisen
8,182,720	11/933,136	United States	NSL-0120	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
	11/933,255	United States	NSL-0121	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
	13/668,225	United States	NSL-0121A/NanoP056C1	Solution-Based Fabrication of Photovoltaic Cell	Utility: Non-Provisional	Dong Yu
8,206,616	11/933,285	United States	NSL-0122	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
8,182,721	11/933,315	United States	NSL-0123	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
8,168,089	11/933,322	United States	NSL-0124	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
8,038,909	11/933,338	United States	NSL-0125	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
8,366,973	11/933,357	United States	NSL-0126	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
	11/933,383	United States	NSL-0128	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
8,088,309	11/933,400	United States	NSL-0129	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
7,919,337	11/933,416	United States	NSL-0131	OPTOELECTRONIC ARCHITECTURE HAVING COMPOUND CONDUCTING SUBSTRATE	Utility: Non-Provisional	James R. Sheats
	12/743,775	United States	NSL-0132	HIGH-EFFICIENCY, HIGH CURRENT SOLAR CELL AND SOLAR MODULE	Utility: Non-Provisional	James R. Sheats
	12/741,919	United States	NSL-0133A	ANTI-REFLECTIVE COATING	Utility: Non-Provisional	Brian M. Sager
	EP 8848003.3	European Patent Office	NSL-0133A EP	Improved Anti-Reflective Coating	Utility: Foreign	
	JP 2010533316	Japan	NSL-0133A JP	Improved Anti-Reflective Coating	Utility: Foreign	
	12/698,083	United States	NSL-0133B	ANTI-REFLECTIVE COATING	Utility: Non-Provisional	Brian M. Sager
	12/544,207	United States	NSL-0134A	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER TO FORM A GROUP IB-IIB-IVA-VIA ABSORBER LAYER	Utility: Non-Provisional	David B. Jackrel
8,193,442	11/954,183	United States	NSL-0135	COATED NANOPARTICLES AND QUANTUM DOTS FOR SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELLS	Utility: Non-Provisional	Brian M. Sager
	13/465,084	United States	NSL-0135A	COATED NANOPARTICLES AND QUANTUM DOTS FOR SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELLS	Utility: Divisional	Brian M. Sager
	12/559,451	United States	NSL-0136A	METHODS TO PREVENT CURLING OR BENDING OF A FLEXIBLE SUBSTRATE DURING THERMAL PROCESSING	Utility: Non-Provisional	Hak Fei Poon
	13/099,192	United States	NSL-0138	MOUNTING SYSTEM FOR SOLAR MODULES	Utility: Non-Provisional	Robert Stancel
	12/605,284	United States	NSL-0139A	VOID-FREE POTTANT LAYER FOR PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	Paul M. Adriani
6,946,597	10/443,456	United States	NSL-013A	PHOTOVOLTAIC DEVICES FABRICATED BY GROWTH FROM POROUS TEMPLATE	Utility: Non-Provisional	Brian M. Sager
	10/698,988	United States	NSL-014	Inorganic/organic hybrid nanolaminate barrier film	Utility: Non-Provisional	Brian M. Sager
	EP 4796054.7	European Patent Office	NSL-014/PCT/EP	Inorganic/Organic Hybrid Nanolaminate/Barrier Film	Utility: Foreign	
	JP 2006-538120	Japan	NSL-014/PCT/JP	Inorganic/Organic Hybrid Nanolaminate/Barrier Film	Utility: Foreign	
	2013185134	Japan	NSL-014/PCT/JP1	Inorganic/Organic Hybrid Nanolaminate/Barrier Film	Utility: Foreign	
I376825	TW 93131587	Taiwan, Province of China	NSL-014/TW	Inorganic/Organic Hybrid Nanolaminate/Barrier Film	Utility: Foreign	
	12/988,304	United States	NSL-0143	Methods and Devices for Shipping Solar Modules	Utility: Non-Provisional	Robert Stancel
	EP 2009732509	European Patent Office	NSL-0143 EP	Methods and Devices for Shipping Solar Modules	Utility: Foreign	

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	12/110,252	United States	NSL-0144	FORMATION OF CIGS ABSORBER LAYER MATERIALS USING ATOMIC LAYER DEPOSITION AND HIGH THROUGHPUT SURFACE TREATMENT	Utility: Non-Provisional	Brian M. Sager
	12/429,162	United States	NSL-0144A	Formation of Thin Film Absorber Layer Material	Utility: Non-Provisional	Brian M. Sager
	12/110,247	United States	NSL-0145	FORMATION OF CIGS ABSORBER LAYER MATERIALS USING ATOMIC LAYER DEPOSITION AND HIGH THROUGHPUT SURFACE TREATMENT	Utility: Non-Provisional	Brian M. Sager
	12/477,883	United States	NSL-0148	ENCAPSULANT LAYER WITH SHAPED CROSS-SECTION FOR USE IN PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	Paul M. Adriani
	12/483,226	United States	NSL-0149	SOLAR MODULE MOUNTING APPARATUS ALLOWING FOR AT LEAST ONE DEGREE OF FREEDOM	Utility: Non-Provisional	Robert Stancel
	10/719,042	United States	NSL-015	Photovoltaic device fabricated by anisotropic etch using andodized nanotube template etch mask	Utility: Non-Provisional	Karl Pichler
	12/464,835	United States	NSL-0150	Individually encapsulated solar cells and/or solar cell strings	Utility: Non-Provisional	James R. Sheats
	EP 9771080	European Patent Office	NSL-0151 EP	Tensioned Mounting of Solar Panels	Utility: Foreign	
	13/128,211	United States	NSL-0151B	TENSIONED MOUNTING OF SOLAR PANELS	Utility: Non-Provisional	Robert Stancel
	12/492,119	United States	NSL-0152	STRUCTURES FOR LOW COST, RELIABLE SOLAR MODULES	Utility: Non-Provisional	Paul M. Adriani
	12/497,165	United States	NSL-0153	SOLAR PANELS WITH PERIMETER PROTECTION	Utility: Non-Provisional	Louis Basel
	12/502,229	United States	NSL-0154	PRE-PANELIZED PHOTOVOLTAIC ASSEMBLY	Utility: Non-Provisional	Robert Stancel
	12/541,149	United States	NSL-0155	Impact Resistant Thin-Glass Solar Modules	Utility: Non-Provisional	Robert Stancel
	12/545,053	United States	NSL-0156	SOLAR CELL ABSORBER LAYER FORMED FROM PRECURSOR FOIL	Utility: Non-Provisional	David B. Jackrel
	13/660,170	United States	NSL-0156A/NanoP117C1	Solar Cell Absorber Layer Formed From Precursor Foil	Utility: Non-Provisional	David B. Jackrel
	12/557,498	United States	NSL-0157	FOLDABLE, LOW-VOLTAGE PHOTOVOLTAIC SYSTEMS	Utility: Non-Provisional	Robert Stancel
	12/547,457	United States	NSL-0158	TRANSFORMERLESS INVERTER WITH HYBRID GALVANIC SEPARATION	Utility: Non-Provisional	Robert Stancel
	12/561,254	United States	NSL-0159	COMPRESSION OR ARCHED MOUNTING OF SOLAR PANELS	Utility: Non-Provisional	Paul M. Adriani
7,829,143	10/719,040	United States	NSL-016	SOLVENT VAPOR ANNEALING OF ORGANIC FILMS	Utility: Non-Provisional	Brent J. Bollman
	12/603,535	United States	NSL-0162	HIGH-THROUGHPUT ROLL TO ROLL SPUTTERING ASSEMBLY WITH ANTI-CURLING MECHANISM	Utility: Non-Provisional	Rafi Litmanovitz
	12/603,540	United States	NSL-0164	HIGH-THROUGHPUT ROLL TO ROLL SPUTTERING ASSEMBLY WITH PARTICLE REMOVAL	Utility: Non-Provisional	Rafi Litmanovitz
	12/603,548	United States	NSL-0165	HIGH-THROUGHPUT ROLL TO ROLL SPUTTERING ASSEMBLY WITH IMPROVED TEMPERATURE CONTROL	Utility: Non-Provisional	Rafi Litmanovitz
	12/603,551	United States	NSL-0166	HIGH-THROUGHPUT ROLL TO ROLL SPUTTERING ASSEMBLY WITH IN-LINE DIAGNOSTICS	Utility: Non-Provisional	Rafi Litmanovitz
	12/603,557	United States	NSL-0167	HIGH-THROUGHPUT ROLL TO ROLL SPUTTERING ASSEMBLY WITH IMPROVED LOADING AND UNLOADING	Utility: Non-Provisional	Rafi Litmanovitz
	12/610,247	United States	NSL-0168	Hybrid Transparent Conductive Electrode	Utility: Non-Provisional	Hak Fei Poon
	EP 9829656.9	European Patent Office	NSL-0168 EP	Hybrid Transparent Conductive Electrode	Utility: Foreign	
	IN 3406/DELNP/2011	India	NSL-0168 IN	Hybrid Transparent Conductive Electrode	Utility: Foreign	
	2011/534,833	United States	NSL-0168JP	Hybrid Transparent Conductive Electrode	Utility: Non-Provisional	Hak Fei Poon
7,968,869	12/245,734	United States	NSL-0169	OPTOELECTRONIC ARCHITECTURE HAVING COMPOUND CONDUCTING SUBSTRATE	Utility: Non-Provisional	James R. Sheats
6,987,071	10/719,041	United States	NSL-017	SOLVENT VAPOR INFILTRATION OF ORGANIC MATERIALS INTO NANOSTRUCTURES	Utility: Non-Provisional	Brent J. Bollman
	12/245,735	United States	NSL-0170	MANUFACTURING OF OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Karl Pichler
	12/626,878	United States	NSL-0175A	Wind Uplift Resistant Module Mounting System	Utility: Non-Provisional	Robert Stancel
	PCT/US09/66030	World Intellectual Property Organization	NSL-0175A PC	Wind Resistant Module Mounting System	Utility: PCT	Robert Stancel

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	12/636,702	United States	NSL-0177	PHOTOVOLTAIC DEVICE WITH METAL-TO-GLASS MOISTURE BARRIER	Utility: Non-Provisional	Robert Stancel
	PCT/US09/67793	World Intellectual Property Organization	NSL-0177 PC	Photovoltaic Device With Metal-to-Glass Moisture Barrier	Utility: PCT	Robert Stancel
	12/706,709	United States	NSL-0178	SOLAR CELL ABSORBER LAYER FORMED FROM EQUILIBRIUM PRECURSOR(S)	Utility: Non-Provisional	Jacob Woodruff
	201080016985.7	China	NSL-0178 CN	SOLAR CELL ABSORBER LAYER FORMED FROM EQUILIBRIUM PRECURSOR(S)	Utility: Foreign	
	10741889.9	European Patent Office	NSL-0178 EP	SOLAR CELL ABSORBER LAYER FORMED FROM EQUILIBRIUM PRECURSOR(S)	Utility: Foreign	Jacob Woodruff
	2011-550317	Japan	NSL-0178 JP	SOLAR CELL ABSORBER LAYER FORMED FROM EQUILIBRIUM PRECURSOR(S)	Utility: Foreign	
	10-2011-7021510	Republic of Korea	NSL-0178 KR	SOLAR CELL ABSORBER LAYER FORMED FROM EQUILIBRIUM PRECURSOR(S)	Utility: Foreign	Jacob Woodruff
	PCT/US10/24342	World Intellectual Property Organization	NSL-0178 PC	SOLAR CELL ABSORBER LAYER FORMED FROM EQUILIBRIUM PRECURSOR(S)	Utility: PCT	
	12/876,235	United States	NSL-0179A	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH IMPROVED CONDENSER	Utility: Non-Provisional	Sam Kao
	10/719,100	United States	NSL-018	Nanostructured optoelectronic device with short-proofing layer	Utility: Non-Provisional	Karl Pichler
	12/876,227	United States	NSL-0180A	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH REDUCED HEIGHT PROFILE	Utility: Non-Provisional	Nathaniel Stanley
	12/882,184	United States	NSL-0181A	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH NON-CONTACT, IN-LINE PROCESS GAS SENSORS	Utility: Non-Provisional	Nathanial Stanley
	13/271,183	United States	NSL-0181B	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH NON-CONTACT, IN-LINE PROCESS GAS SENSORS	Utility: Non-Provisional	Nathanial Stanley
	61/391,675	United States	NSL-0181B P	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH NON-CONTACT, IN-LINE PROCESS GAS SENSORS	Utility: Provisional	Sam Kao
	12/748,374	United States	NSL-0182	ROLL-TO-ROLL LASER MICROVIA DRILLING FOR THIN-FILM SOLAR CELLS	Utility: Non-Provisional	Anthony Nicholas Brady Garvan III
8,178,384	12/401,238	United States	NSL-0183	Inter Facial Architecture For Nanostructured Optoelectronic Devices	Utility: Non-Provisional	Martin R. Roscheisen
	12/749,475	United States	NSL-0185	METHODS AND DEVICES FOR HIGH ACCURACY DEPOSITION ON A CONTINUOUSLY MOVING SUBSTRATE	Utility: Non-Provisional	Anthony Nicholas Brady Garvan III
	10767902.9	European Patent Office	NSL-0186 EP	METHODS AND DEVICES FOR AN ELECTRICALLY NON-RESISTIVE LAYER FORMED FROM AN ELECTRICALLY INSULATING MATERIAL	Utility: Foreign	
	PCT/US10/32464	World Intellectual Property Organization	NSL-0186 PC	METHODS AND DEVICES FOR AN ELECTRICALLY NON-RESISTIVE LAYER FORMED FROM AN ELECTRICALLY INSULATING MATERIAL	Utility: PCT	
	12/767,787	United States	NSL-0186A	METHODS AND DEVICES FOR AN ELECTRICALLY NON-RESISTIVE LAYER FORMED FROM AN ELECTRICALLY INSULATING MATERIAL	Utility: Non-Provisional	Wolf Oetting
	12/757,023	United States	NSL-0187	METHODS AND DEVICES FOR SOLAR PANEL DISASSEMBLY	Utility: Non-Provisional	Andrzej Skoskiewicz
	12/759,689	United States	NSL-0188	METHODS AND DEVICES FOR SOLAR PANEL KIT	Utility: Non-Provisional	Robert Stancel

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	12/769,642	United States	NSL-0189	AVALANCHE BREAKDOWN PROTECTION FOR HIGH CURRENT, NON-ELONGATE SOLAR CELLS WITH ELECTRICALLY CONDUCTIVE SUBSTRATES	Utility: Non-Provisional	Anthony Nicholas Brady Garvan III
	12/767,793	United States	NSL-0190	THIN-FILM TANDEM SOLAR CELL	Utility: Non-Provisional	Brian M. Sager
	12/437,539	United States	NSL-0191	Formation of Photovoltaic Absorber Layers on Foil Substrates	Utility: Non-Provisional	Craig R. Leidholm
	12/437,532	United States	NSL-0192/NanoP012	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Non-Provisional	Craig R. Leidholm
	12/777,241	United States	NSL-0193	ROLL-TO-ROLL MANUFACTURING OF BACK-CONTACTED SOLAR CELLS	Utility: Non-Provisional	Jeroen K. J. Van Duren
8,247,243	12/786,396	United States	NSL-0194	SOLAR CELL INTERCONNECTION	Utility: Non-Provisional	Jayna R. Sheats
	12/786,400	United States	NSL-0196	STRUCTURE AND PROCESS FOR SOLAR CELL ELECTRODES	Utility: Non-Provisional	James R. Sheats
	12/796,613	United States	NSL-0197	STRUCTURE AND PROCESS FOR SOLAR CELL OVERCURRENT PROTECTION	Utility: Non-Provisional	Anthony Nicholas Brady Garvan III
	12/813,474	United States	NSL-0199	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT WITH IMPROVED EXHAUST	Utility: Non-Provisional	Nathaniel Stanley
7,604,843	11/081,163	United States	NSL-019B	METALLIC DISPERSION	Utility: Non-Provisional	Matthew R. Robinson
	CN 20068014859.1	China	NSL-019B CN	Metallic Dispersion Dispersion and Formation of Compound Film For Photovoltaic Device Active Layer	Utility: Foreign	
	EP 6748410.5	European Patent Office	NSL-019B EP	Metallic Dispersion And Formation of Compound Film For Photovoltaic Device Active Layer	Utility: Foreign	
5260275	JP 2008-502044	Japan	NSL-019B JP	A METHOD OF FORMING A COMPOUND FILM	Utility: Foreign	
8,409,455	12/826,647	United States	NSL-0201	METHODS AND DEVICES FOR ULTRA SMOOTH SUBSTRATE FOR USE IN THIN FILM SOLAR CELL MANUFACTURING	Utility: Non-Provisional	Wolf Oetting
	12/840,210	United States	NSL-0203	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Brent J. Bollman
	12/840,217	United States	NSL-0204	SOLUTION DEPOSITION ASSEMBLY	Utility: Non-Provisional	Yann Roussillon
	12/840,220	United States	NSL-0205	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM FLAKE PARTICLES	Utility: Non-Provisional	Jeroen K. J. Van Duren
	12/855,672	United States	NSL-0206	METHODS AND DEVICES FOR USING ELECTRICAL BIAS TO REPAIR THIN FILM DEFECTS	Utility: Non-Provisional	Hak Fei Poon
	12/545,789	United States	NSL-0207	MANUFACTURING OF OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Karl Pichler
	13/392,503	United States	NSL-0208	ASSEMBLY FOR ELECTRICAL BREAKDOWN PROTECTION FOR HIGH CURRENT, NON-ELONGATE SOLAR CELLS WITH ELECTRICALLY CONDUCTIVE SUBSTRATES	Utility: Non-Provisional	Robert Stancel
	PCT/US10/46877	World Intellectual Property Organization	NSL-0208 PC	ASSEMBLY FOR ELECTRICAL BREAKDOWN PROTECTION FOR HIGH CURRENT, NON-ELONGATE SOLAR CELLS WITH ELECTRICALLY CONDUCTIVE SUBSTRATES	Utility: PCT	
	12/549,286	United States	NSL-0209	MANUFACTURING OF OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Karl Pichler
7,462,774	10/771,250	United States	NSL-021	PHOTOVOLTAIC DEVICES FABRICATED FROM INSULATING NANOSTRUCTURED TEMPLATE	Utility: Non-Provisional	Martin R. Roscheisen
	DE1020050030846.8	Germany	NSL-021 DE	Photovoltaic Devices Fabricated from Insultaing Template with Conductive Coating	Utility: Foreign	
	12/553,951	United States	NSL-0210	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER BY USE OF CHALCOGEN-RICH CHALCOGENIDES	Utility: Non-Provisional	Jeroen K. J. Van Duren
	13/673,993	United States	NSL-0210A/NanoP057C1	High-Throughput Printing of Semiconductor Precursor Layer by Use of Chalcogen-Rich Chalcogenides	Utility: Non-Provisional	Jeroen K.J. Van Duren
	12/878,019	United States	NSL-0211	UTILITY-SCALE SOLAR PANEL	Utility: Non-Provisional	Robert Stancel
	13/099,337	United States	NSL-0213	METHODS AND DEVICES FOR ADHESIVE ATTACHMENT OF SOLAR MODULES	Utility: Non-Provisional	Robert Stancel

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	12/901,470	United States	NSL-0214	HIGH LIGHT TRANSMISSION, LOW SHEET RESISTANCE LAYER FOR PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	Hak Fei Poon
	12/564,042	United States	NSL-0215	PHOTOVOLTAIC THIN-FILM CELL PRODUCED FROM METALLIC BLEND USING HIGH-TEMPERATURE PRINTING	Utility: Non-Provisional	Martin R. Roscheisen
8,093,489	12/564,047	United States	NSL-0216	PHOTOVOLTAIC DEVICES FABRICATED FROM NANOSTRUCTURED TEMPLATE	Utility: Non-Provisional	Martin R. Roscheisen
	12/898,666	United States	NSL-0219	BACK CONTACT THIN FILM SOLAR CELL STRUCTURES AND PROCESSES	Utility: Non-Provisional	James R. Sheats
7,605,327	10/771,092	United States	NSL-022	PHOTOVOLTAIC DEVICES FABRICATED FROM NANOSTRUCTURED TEMPLATE	Utility: Non-Provisional	Martin R. Roscheisen
	DE1020050030841.7	Germany	NSL-022 DE	Photovoltaic Devices Fabricated From Nanostructured Template	Utility: Foreign	
	12/903,182	United States	NSL-0220	ROBUST NON-CONTACT SENSOR	Utility: Non-Provisional	Anthony Nicholas Brady Garvan III
	12/581,837	United States	NSL-0221	Metallic Dispersion	Utility: Non-Provisional	Matthew R. Robinson
	12/909,808	United States	NSL-0222	METHODS AND DEVICES FOR USING ELECTRICAL BIAS TO REPAIR THIN FILM DEFECTS	Utility: Non-Provisional	Matthew R. Robinson
	PCT/US09/61566	World Intellectual Property Organization	NSL-0223 PC	HIGH-THROUGHPUT ROLL TO ROLL SPUTTERING ASSEMBLY	Utility: PCT	
	12/963,603	United States	NSL-0224	STRUCTURE AND PROCESS FOR SOLAR CELL OVERCURRENT PROTECTION USING NANOWIRES	Utility: Non-Provisional	Hak Fei Poon
	13/005,516	United States	NSL-0225	DETERMINATION OF THE MINORITY CARRIER DIFFUSION LENGTH IN COMPOSITIONALLY GRADED THIN-FILM SOLAR CELLS USING ELECTRON BEAM INDUCED CURRENT	Utility: Non-Provisional	Gregory Brown
	12/948,732	United States	NSL-0226	TRANSPARENT LAYER WITH ANTI-REFLECTIVE TEXTURE	Utility: Non-Provisional	Louis Basel
	12/955,749	United States	NSL-0227	METHODS AND DEVICES FOR SOLAR PANEL KIT WITH LOAD PROTECTION	Utility: Non-Provisional	Robert Stancel
	12/980,276	United States	NSL-0228	LOW COST SOLAR CELLS FORMED USING A CHALCOGENIZATION RATE MODIFIER	Utility: Non-Provisional	David B. Jackrel
	2010343092	Australia	NSL-0228 AU	LOW COST SOLAR CELLS FORMED USING A CHALCOGENIZATION RATE MODIFIER	Utility: Foreign	David B. Jackrel
	6280/CHENP/2012	India	NSL-0228 IN	LOW COST SOLAR CELLS FORMED USING A CHALCOGENIZATION RATE MODIFIER	Utility: Foreign	David B. Jackrel
	PCT/US10/62270	World Intellectual Property Organization	NSL-0228 PC	LOW COST SOLAR CELLS FORMED USING A CHALCOGENIZATION RATE MODIFIER	Utility: PCT	David B. Jackrel
	61/430,131	United States	NSL-0228A P	LOW COST SOLAR CELLS FORMED USING A CHALCOGENIZATION RATE MODIFIER AND SULFUR	Utility: Provisional	David B. Jackrel
	13/344,583	United States	NSL-0228A/NanoP052	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUCTOR	Utility: Non-Provisional	David B. Jackrel
	101123290	Taiwan, Province of China	NSL-0228B TW	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUTOR	Utility: Foreign	David B. Jackrel
	PCT/US12/44364	World Intellectual Property Organization	NSL-0228B/PCT	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUCTOR	Utility: PCT	David B. Jackrel
	13/533,761	United States	NSL-0228B/US	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUCTOR	Utility: Non-Provisional	David B. Jackrel
	61/502,853	United States	NSL-0228B_P	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUTOR	Utility: Provisional	David B. Jackrel
	13/208,325	United States	NSL-0228C	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUCTOR	Utility: Non-Provisional	David B. Jackrel
	PCT/US12/20385	World Intellectual Property Organization	NSL-0228C PC	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUCTOR	Utility: PCT	
	61/505,084	United States	NSL-0228C_P	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUTOR	Utility: Provisional	David B. Jackrel
	101100485	Taiwan, Province of China	NSL-0228C-TW	MULTI-NARY GROUP IB AND VIA BASED SEMICONDUCTOR	Utility: Foreign	David B. Jackrel
	10844273.2	European Patent Office	NSL-0228-EP	LOW COST SOLAR CELLS FORMED USING A CHALCOGENIZATION RATE MODIFIER	Utility: Foreign	David B. Jackrel
8,257,788	12/643,565	United States	NSL-0229	Nanostructured Layer and Fabrication Methods	Utility: Non-Provisional	Jacqueline Fidanza

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	10/781,081	United States	NSL-023	3D structured photovoltaic cells	Utility: Non-Provisional	Karl Pichler
	12/986,151	United States	NSL-0230	ANTI-REFLECTIVE COATING	Utility: Non-Provisional	Matthew R. Robinson
	13/042,389	United States	NSL-0231	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM PRIMARILY GROUP IB MATERIAL	Utility: Non-Provisional	Jeroen Van Duren
	13/031,147	United States	NSL-0232	FROZEN LIGHT SOAK TEST FOR SOLAR MODULES	Utility: Non-Provisional	Lei Chen
	12/705,945	United States	NSL-0233	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
	12/757,942	United States	NSL-0234	HIGH-THROUGHPUT PRINTING OF NANOSTRUCTURED SEMICONDUCTOR PRECURSOR LAYER	Utility: Non-Provisional	Jeroen K. J. Van Duren
	13/149,791	United States	NSL-0235	SOLAR CELLS WITH LAMINATION DEGREDATION REDUCING OVERCOATING MATERIAL	Utility: Non-Provisional	Lei Chen
	12/763,146	United States	NSL-0236	High-Throughput Printing of Semiconductor Precursor Layer from Nanoflake Particles	Utility: Non-Provisional	Matthew R. Robinson
	13/099,343	United States	NSL-0237	TRANSPARENT LAYER WITH ANTI-REFLECTIVE OUTWARD PROTRUDING HEXAGONAL PYRAMIDAL PATTERNED FRONT GLASS	Utility: Non-Provisional	Matthew R. Robinson
	13/099,346	United States	NSL-0238	METHODS AND DEVICES FOR SOLAR MODULES	Utility: Non-Provisional	Robert Stancel
	12/776,353	United States	NSL-0239	THIN-FILM DEVICES FORMED FROM SOLID GROUP IIIA PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
7,045,205	10/782,163	United States	NSL-024	DEVICE BASED ON COATED NANOPOROUS STRUCTURE	Utility: Non-Provisional	Brian M. Sager
	13/104,945	United States	NSL-0240	THIN FILM BUFFER LAYER SOLUTION DEPOSITION ASSEMBLY	Utility: Non-Provisional	Ivano Gregoratto
	PCT/US11/35996	World Intellectual Property Organization	NSL-0240 PC	THIN FILM BUFFER LAYER SOLUTION DEPOSITION ASSEMBLY	Utility: PCT	Ivano Gregoratto
	11781185.1	European Patent Office	NSL-0240 PCEP	THIN FILM BUFFER LAYER SOLUTION DEPOSITION ASSEMBLY	Utility: Foreign	Ivano Gregoratto
	13/117,104	United States	NSL-0241	FOIL SUBSTRATE SUITABLE FOR PRODUCTION OF SOLAR CELLS	Utility: Non-Provisional	Jeroen K. J. Van Duren
	13/154,379	United States	NSL-0242A	CHARACTERIZATION OF THIN-FILM SOLAR CELLS	Utility: Non-Provisional	Gregory Brown
	61/369,697	United States	NSL-0242A P	Characterization of Thin-Film Solar Cells	Utility: Provisional	Gregory Brown
	13/154,347	United States	NSL-0243	POLYSILIZANE ANTI-REFLECTIVE COATING	Utility: Non-Provisional	Matthew R. Robinson
	12/795,594	United States	NSL-0244	FORMATION OF SOLAR CELLS WITH CONDUCTIVE BARRIER LAYERS AND FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	12/813,505	United States	NSL-0245	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Brent J. Bollman
	12/813,508	United States	NSL-0246	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Brent J. Bollman
	12/824,142	United States	NSL-0248	MANUFACTURING OF OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Karl Pichler
	13/180,536	United States	NSL-0249	METHODS AND DEVICES FOR BUFFER LAYER POST-PROCESSING TO CREATE A DEGREDATION RESISTANT LAYER	Utility: Non-Provisional	Jeroen K.J. Van Duren
	61/363,265	United States	NSL-0249 P	METHODS AND DEVICES FOR BUFFER LAYER POST-PROCESSING TO CREATE A DEGREDATION RESISTANT LAYER	Utility: Provisional	Jeroen K. J. Van Duren
7,115,304	10/782,545	United States	NSL-025	HIGH THROUGHPUT SURFACE TREATMENT ON COILED FLEXIBLE SUBSTRATES	Utility: Non-Provisional	Martin R. Roscheisen
	EP 2005712939.7	European Patent Office	NSL-025/PCT/EP	High Throughput Surface Treatment on Coiled Flexible Substrates	Utility: Foreign	
	13/185,475	United States	NSL-0250	ACCELERATED IDENTIFICATION OF DESIRED PROCESS PARAMETERS THROUGH PHYSICAL MODELING OF THIN-FILM, RELATIVELY DISORDERED AND NON-CRYSTALLINE SOLAR CELLS	Utility: Non-Provisional	Brian M. Sager

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	61/365,305	United States	NSL-0250P	ACCELERATED IDENTIFICATION OF DESIRED PROCESS PARAMETERS THROUGH PHYSICAL MODELING OF THIN-FILM, RELATIVELY DISORDERED AND NON-CRYSTALLINE SOLAR CELLS	Utility: Provisional	Brian M. Sager
	12/842,967	United States	NSL-0251	METHODS AND DEVICES FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Brent J. Bollman
	13/209,360	United States	NSL-0252	THERMOELECTRIC STACK COATING FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Non-Provisional	Brian M. Sager
	61/373,262	United States	NSL-0252 P	THERMOELECTRIC STACK COATING FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Provisional	Brian M. Sager
	PCT/US11/47686	World Intellectual Property Organization	NSL-0252 PC	THERMOELECTRIC STACK COATING FOR IMPROVES SOLAR PANEL FUNCTION	Utility: PCT	Brian M. Sager
	61/373,265	United States	NSL-0253 P	THERMOELECTRIC STACK COATING FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Provisional	Brian M. Sager
	12/856,558	United States	NSL-0254	METHOD AND SYSTEM FOR SUBSTRATE CONDITIONING	Utility: Non-Provisional	James R. Sheats
	12/856,562	United States	NSL-0255	BANDGAP GRADING IN THIN-FILM DEVICES VIA SOLID GROUP IIIA PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	61/375,230	United States	NSL-0256 P	THERMOELECTRIC STACK COATING FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Provisional	Brian M. Sager
	61/375,793	United States	NSL-0257 P	THERMOELECTRIC STACK COATING FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Provisional	Brian M. Sager
	61/405,043	United States	NSL-0257A_P	THERMOELECTRIC STACK COATING FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Provisional	Brian M. Sager
	13/275,269	United States	NSL-0258	SOLAR CELL ARCHITECTURE HAVING A PLURALITY OF VIAS WITH SHAPED FOIL VIA INTERIOR	Utility: Non-Provisional	Justin Hedtke
	61/393,854	United States	NSL-0258 P	SOLAR CELL ARCHITECTURE HAVING A PLURALITY VIAS WITH SHAPED FOIL VIA INTERIOR	Utility: Provisional	Justin Hedtke
	PCT/US11/56596	World Intellectual Property Organization	NSL-0258 PC	THIN FILM BUFFER LAYER SOLUTION DEPOSITION ASSEMBLY	Utility: PCT	
	13/229,662	United States	NSL-0259	SIMULTANEOUS HANDLING OF MULTIPLE SOLAR CELLS USING PRIMARILY ROTATIONAL MOTION OR ACTUATORS	Utility: Non-Provisional	
	61/381,432	United States	NSL-0259_P	SIMULTANEOUS HANDLING OF MULTIPLE SOLAR CELLS USING PRIMARILY ROTATIONAL MOTION OR ACTUATORS	Utility: Provisional	
8,304,019	10/782,233	United States	NSL-026	Roll-to-roll atomic layer deposition method and system	Utility: Non-Provisional	Karl Pichler
	13/670,094	United States	NSL-026/DIV	ROLL-TO-ROLL ATOMIC LAYER DEPOSITOIN METHOD AND SYSTEM	Utility: Non-Provisional	Karl Pichler
	13/249,178	United States	NSL-0260	SYSTEM FOR PROCESSING A PRECURSOR LAYER	Utility: Non-Provisional	Sam Kao
	13/267,867	United States	NSL-0260A	SYSTEM FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Non-Provisional	Sam Kao
	14/101,202	United States	NSL-0260A/CON	THIN-FILM ABSORBER FORMATION METHOD	Utility: Non-Provisional	Sam Kao
	61/390,610	United States	NSL-0260A P	SYSTEM FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Provisional	Sam Kao
	61/391,676	United States	NSL-0260B P	SYSTEM FOR PROCESSING A PRECURSOR LAYER WITH CONTINUOUS GROUP VIA DELIVERY SYSTEM AND RECOVERY SYSTEM	Utility: Provisional	Sam Kao
	61/391,677	United States	NSL-0260C P	UNWIND AND REWIND SYSTEM FOR USE IN PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Provisional	Sam Kao
	13/274,298	United States	NSL-0260D	GROUP VIA SOURCE SYSTEMS AND EXHAUST SYSTEMS FOR USE IN PROCESSING A PRECURSOR LAYER	Utility: Non-Provisional	Jack Krawczyk
	61/393,351	United States	NSL-0260D_P	GROUP VIA SOURCE SYSTEMS AND EXHAUST SYSTEMS FOR USE IN PROCESSING A PRECURSOR LAYER	Utility: Provisional	Jack Krawczyk

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	61/388,314	United States	NSL-0260P	SYSTEM FOR PROCESSING A PRECURSOR LAYER IN A GROUP VIA ENVIRONMENT	Utility: Provisional	Sam Kao
	61/391,636	United States	NSL-0261 P	SOLAR PANEL WITH RECONFIGURABLE INTRAPANEL SOLAR CELL INTERCONNECTIONS	Utility: Provisional	Brian M. Sager
	13/269,580	United States	NSL-0261A	Solar Panel with Reconfigurable Interconnections	Utility: Non-Provisional	Brian M. Sager
	61/393,308	United States	NSL-0261A P	SOLAR PANEL WITH RECONFIGURABLE INTRAPANEL SOLAR CELL INTERCONNECTIONS	Utility: Provisional	Brian M. Sager
		China	NSL-0261CN	SOLAR PANEL WITH RECONFIGURABLE INTERCONNECTIONS	Utility: Foreign	
	11831737.9	European Patent Office	NSL-0261EP	SOLAR PANEL WITH RECONFIGURABLE INTERCONNECTIONS	Utility: Foreign	
		Japan	NSL-0261JP	SOLAR PANEL WITH RECONFIGURABLE INTERCONNECTIONS	Utility: Foreign	
		Republic of Korea	NSL-0261KR	SOLAR PANEL WITH RECONFIGURABLE INTERCONNECTIONS	Utility: Foreign	
	PCT/US11/55497	World Intellectual Property Organization	NSL-0261PC/NanoP039WO	SOLAR PANEL WITH RECONFIGURABLE INTERCONNECTIONS	Utility: PCT	
	13/334,024	United States	NSL-0263	FORMED SOLAR PANEL	Utility: Non-Provisional	David B. Jackrel
	61/425,732	United States	NSL-0263 P	Formed Solar Panel	Utility: Provisional	David B. Jackrel
	13/423,162	United States	NSL-0264	DURABLE FORENSIC MARKING OF SOLAR PANELS	Utility: Non-Provisional	Brian M. Sager
	61/453,510	United States	NSL-0264 P	DURABLE FORENSIC DNA MARKING OF SOLAR PANELS	Utility: Provisional	Brian M. Sager
	61/477,578	United States	NSL-0265_P	WIND POWERED ELECTRIC GENERATOR FOR IMPROVED SOLAR PANEL FUNCTION	Utility: Provisional	Brian M. Sager
	13/469,893	United States	NSL-0266/NanoP055	LOW COST ALTERNATIVES TO CONDUCTIVE SILVER-BASED INKS	Utility: Non-Provisional	Zequn Mei
	61/485,072	United States	NSL-0266_P	LOW COST ALTERNATIVES TO CONDUCTIVE SILVER-BASED INKS	Utility: Provisional	Zequn Mei
	13/169,985	United States	NSL-0267	OPTOELECTRONIC ARCHITECTURE HAVING COMPOUND CONDUCTING SUBSTRATE	Utility: Non-Provisional	James R. Sheats
	PCT/US12/47754	World Intellectual Property Organization	NSL-0269 PC	STRUCTURES FOR SOLAR ROOFING	Utility: PCT	
	13/555,033	United States	NSL-0269/NanoP088	Structures for Solar Roofing	Utility: Non-Provisional	David B. Jackrel
	61/509,785	United States	NSL-0269_P	STRUCTURES FOR LOW COST, RELIABLE SOLAR ROOFING	Utility: Provisional	David B. Jackrel
	13/190,450	United States	NSL-0270	THERMAL MANAGEMENT FOR PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	Martin R. Roscheisen
		United States	NSL-0271	Multi-layer Semiconductor Junction Partner with Reduced Interface Recombination	Utility: Non-Provisional	
	61/562,395	United States	NSL-0271_P	MULTI-LAYER THIN FILM BUFFER LAYER FOR INCREASED PHOTOVOLTAIC DEVICE PERFORMANCE	Utility: Provisional	Wei Zhang
	13/274,567	United States	NSL-0272	INDIVIDUALLY ENCAPSULATED SOLAR CELLS AND SOLAR CELL STRINGS	Utility: Non-Provisional	Philip Capps
	13/286,739	United States	NSL-0273	CHALCOGENIDE SOLAR CELLS	Utility: Non-Provisional	Jeroen K. J. Van Duren
	13/347,023	United States	NSL-0276	PHOTOVOLTAIC DEVICES FABRICATED FROM NANOSTRUCTURED TEMPLATE	Utility: Non-Provisional	Martin R. Roscheisen
	13/442,771	United States	NSL-0277	BARRIER FILMS AND HIGH THROUGHPUT MANUFACTURING PROCESSES FOR PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	James R. Sheats
		United States	NSL-0278/PROV	Double-Graded Band Gap Profiles through the Combination of Ion Implantation and Pulsed-Laser Annealing	Utility: Provisional	Peter Stone
	13/799,060	United States	NSL-0279	SOLAR CELL MODULE WITH DUAL PURPOSE VAPOR BARRIER/BUSBAR	Utility: Non-Provisional	Eric Ng
	61/754,359	United States	NSL-0280/PROV	IMPROVING LONG TERM STABILITY OF SOLAR CELLS	Utility: Provisional	Grayson Ford

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	13/766,712	United States	NSL-0281	DEPOSITION OF A HIGH SURFACE ENERGY THIN FILM LAYER FOR IMPROVED ADHESION OF GROUP I-III-VI2 SOLAR CELLS	Utility: Non-Provisional	Gregory Brown
		United States	NSL-0281/PROV	Deposition of a high surface energy thin film layer for improved adhesion of group I-III-VI2 Solar Cells	Utility: Provisional	Gregory Brown
	13/799,186	United States	NSL-0282	ELECTRICAL TERMINATIONS FOR FLEXIBLE PHOTOVOLTAIC MODULES	Utility: Non-Provisional	Eric Ng
	13/797,234	United States	NSL-0283	MODULE INTEGRATED CIRCUIT	Utility: Non-Provisional	Darren Lochun
	61/746,755	United States	NSL-0283/PROV	MODULE INTEGRATED CIRCUIT	Utility: Provisional	Darren Lochun
	13/797,284	United States	NSL-0284	INTEGRATED JUNCTION INSULATION FOR PHOTOVOLTAIC MODULE	Utility: Non-Provisional	Michael Rogerson
	61/746,759	United States	NSL-0284/PROV	Integrated Junction Box Design	Utility: Provisional	Michael Rogerson
7,663,057	10/782,017	United States	NSL-029	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
	DE 10 2005 003 0842.5	Germany	NSL-029 DE	Solution-based Fabrication of Photovoltaic Cell	Utility: Foreign	
7,122,398	10/810,072	United States	NSL-030	MANUFACTURING OF OPTOELECTRONIC DEVICES	Utility: Non-Provisional	Karl Pichler
6,967,115	10/828,109	United States	NSL-031	DEVICE TRANSFER TECHNIQUES FOR THIN FILM OPTOELECTRONIC DEVICES	Utility: Non-Provisional	James R. Sheats
7,227,066	10/829,928	United States	NSL-032	POLYCRYSTALLINE OPTOELECTRONIC DEVICES BASED ON TEMPLATING TECHNIQUE	Utility: Non-Provisional	Martin R. Roscheisen
7,306,823	10/943,657	United States	NSL-033	COATED NANOPARTICLES AND QUANTUM DOTS FOR SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELLS	Utility: Non-Provisional	Brian M. Sager
7,605,328	10/836,307	United States	NSL-034	PHOTOVOLTAIC THIN-FILM CELL PRODUCED FROM METALLIC BLEND USING HIGH-TEMPERATURE PRINTING	Utility: Non-Provisional	Brian M. Sager
	EP 5856638.1	European Patent Office	NSL-034 EP	Photovoltaic Thin Films Cells Produced from Metallic Blend using High-Temperature Printing	Utility: Foreign	
7,858,151	10/943,658	United States	NSL-035	FORMATION OF CIGS ABSORBER LAYER MATERIALS USING ATOMIC LAYER DEPOSITION AND HIGH THROUGHPUT SURFACE TREATMENT	Utility: Non-Provisional	Brian M. Sager
	12/978,801	United States	NSL-035A	FORMATION OF CIGS ABSORBER LAYER MATERIALS USING ATOMIC LAYER DEPOSITION AND HIGH THROUGHPUT SURFACE TREATMENT ON COILED FLEXIBLE SUBSTRATES	Utility: Non-Provisional	Brian M. Sager
7,772,487	10/966,338	United States	NSL-036	PHOTOVOLTAIC CELL WITH ENHANCED ENERGY TRANSFER	Utility: Non-Provisional	Matthew R. Robinson
7,262,392	10/943,659	United States	NSL-037	UNIFORM THERMAL PROCESSING BY INTERNAL IMPEDANCE HEATING OF ELONGATED SUBSTRATES	Utility: Non-Provisional	Gregory A. Miller
	10/943,685	United States	NSL-038	Formation of solar cells on foil substrates	Utility: Non-Provisional	Craig R. Leidholm
CN101061588	CN20058036909	China	NSL-038 CN	Formation of Solar Cells on Foil Substrates	Utility: Foreign	
	CN 2010522589.3	China	NSL-038 CN DIV1	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
	EP 10003020.4	European Patent Office	NSL-038 EP DIV 1	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
E 540428	EP 2230693	Austria	NSL-038 EP DIV 1AT	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
		Switzerland	NSL-038 EP DIV 1CH	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
	602005032036.9	Germany	NSL-038 EP DIV 1DE	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
		Spain	NSL-038 EP DIV 1ES	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
		France	NSL-038 EP DIV 1FR	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
		United Kingdom	NSL-038 EP DIV 1GB	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
	22724 BE/2012	Italy	NSL-038 EP DIV 1IT	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
		Sweden	NSL-038 EP DIV 1SE	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
	10184761.4	European Patent Office	NSL-038 EP Div#2	Formation of Solar Cells on Foil Substrates	Utility: Foreign	
	JP 2007-532382	Japan	NSL-038 JP	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
	KR 10-2007-7008734	Republic of Korea	NSL-038 KR	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	
	13/602,023	United States	NSL-038A/NanoP102C1	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Non-Provisional	Craig R. Leidholm
EP1805804 B1	5796064.3	European Patent Office	NSL-038-EP	Formation of CIGS Absorber Layers on Foil Substrates	Utility: Foreign	

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
7,276,724	11/039,053	United States	NSL-039	SERIES INTERCONNECTED OPTOELECTRONIC DEVICE MODULE ASSEMBLY	Utility: Non-Provisional	James R. Sheats
	11/243,492	United States	NSL-040	Formation of compound film for photovoltaic device	Utility: Non-Provisional	Matthew R. Robinson
7,838,868	11/207,157	United States	NSL-043	OPTOELECTRONIC ARCHITECTURE HAVING COMPOUND CONDUCTING SUBSTRATE	Utility: Non-Provisional	James R. Sheats
CN101128941	CN 200680006141	China	NSL-043 CN	Optoelectronic Architecture Having Compound Conducting Substrate	Utility: Foreign	
	EP 6719145.2	European Patent Office	NSL-043 EP	Optoelectronic Architecture Having Compound Conducting Substrate	Utility: Foreign	
4794577	JP 2007-552312	Japan	NSL-043 JP	Optoelectronic Architecture Having Compound Conducting Substrate	Utility: Foreign	
8,309,949	12/952,174	United States	NSL-043A	OPTOELECTRONIC ARCHITECTURE HAVING COMPOUND CONDUCTING SUBSTRATE	Utility: Non-Provisional	James R. Sheats
	13/650,861	United States	NSL-043B/NanoP068C1	OPTOELECTRONIC ARCHITECTURE HAVING COMPOUND CONDUCTING SUBSTRATE	Utility: Non-Provisional	James R. Sheats
8,048,477	11/290,633	United States	NSL-045	Chalcogenide solar cells	Utility: Non-Provisional	Jeroen K. J. Van Duren
	CN 20068052019	China	NSL-045 CN	Chalcogenide Solar Cell	Utility: Foreign	
	EP 6840052.2	European Patent Office	NSL-045 EP	Chalcogenide Solar Cell	Utility: Foreign	
	11/361,522	United States	NSL-046	High-throughput printing of chalcogen layer	Utility: Non-Provisional	Jeroen K. J. Van Duren
	13/481,994	United States	NSL-046A/NanoP064C1	High-Throughput Printing of Chalcogen Layer	Utility: Non-Provisional	Jeroen K.J. Van Duren
	11/765,407	United States	NSL-047A	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM CHALCOGENIDE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	12/175,945	United States	NSL-047B	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM MICROFLAKE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	12/176,328	United States	NSL-047B1	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM MICROFLAKE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	12/363,613	United States	NSL-047C	High-Throughput Printing of Semiconductor Precursor Layer From Microflake Particles	Utility: Non-Provisional	Matthew R. Robinson
	12/505,083	United States	NSL-047D	High-Throughput Printing of Semiconductor Precursor Layer From Microflake Particles	Utility: Non-Provisional	Matthew R. Robinson
7,700,464	11/361,433	United States	NSL-049	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM NANOFLAKE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	11/765,417	United States	NSL-049A1	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM NANOFLAKE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	11/361,497	United States	NSL-051	Photovoltaic devices printed from nanostructured particles	Utility: Non-Provisional	Jeroen K. J. Van Duren
	11/361,515	United States	NSL-052	High-throughput printing of semiconductor precursor layer by use of chalcogen-rich chalcogenides	Utility: Non-Provisional	Jeroen K. J. Van Duren
	11/361,103	United States	NSL-055	High-throughput printing of semiconductor precursor layer by use of low-melting chalcogenides	Utility: Non-Provisional	Jeroen K.J. Van Duren
	11/361,688	United States	NSL-057	High-throughput printing of semiconductor precursor layer from nanoflake particles	Utility: Non-Provisional	Matthew R. Robinson
	13/589,099	United States	NSL-057A/NanoP098C1	High-Throughput Printing of Semiconductor Precursor Layer from Nanoflake Particles	Utility: Non-Provisional	Matthew R. Robinson
	11/762,040	United States	NSL-058	METHODS AND DEVICES FOR HIGH-THROUGHPUT MODULE ASSEMBLY	Utility: Non-Provisional	Werner Dumanski
	11/278,648	United States	NSL-060	High-efficiency solar cell	Utility: Non-Provisional	James R. Sheats
	11/278,645	United States	NSL-061	High-efficiency solar cell with insulated vias	Utility: Non-Provisional	Darren Lochun
	CN 20078016606.2	China	NSL-061 CN	High-Efficiency Solar Cell with Insulated Vias	Utility: Foreign	
	EP 7758303.7	European Patent Office	NSL-061 EP	High-Efficiency Solar Cell with Insulated Vias	Utility: Foreign	
	JP 2009-500568	Japan	NSL-061 JP	High-Efficiency Solar Cell with Insulated Vias	Utility: Foreign	

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	11/762,043	United States	NSL-062	HIGH-THROUGHPUT ASSEMBLY OF SERIES INTERCONNECTED SOLAR CELLS	Utility: Non-Provisional	James R. Sheats
	13/562,712	United States	NSL-062A/NanoP089C1	High-Throughput Assembly of Series Interconnected Solar Cells	Utility: Non-Provisional	James R. Sheats
	11/375,413	United States	NSL-063	Optoelectronic device and frabrication method	Utility: Non-Provisional	Brian M. Sager
	11/375,515	United States	NSL-065	Nanostructured transparent conducting electrode	Utility: Non-Provisional	Martin R. Roscheisen
	13/626,919	United States	NSL-065A/NanoP035C1	NANOSTRUCTURED TRANSPARENT CONDUCTING ELECTRODE	Utility: Non-Provisional	Martin R. Roscheisen
	11/374,716	United States	NSL-067	High throughput surface treatment on coiled flexible substrates	Utility: Non-Provisional	Martin R. Roscheisen
	11/396,199	United States	NSL-068	Dispersion having an inter-metallic material	Utility: Non-Provisional	Jeroen K.J. Van Duren
	ZL 20078014627.0	China	NSL-069 CN	High-Throughput Printing of Chalcogen Layer and the Use of an Inter-metallic Material	Utility: Foreign	
	EP 7757400.2	European Patent Office	NSL-069 EP	High-Throughput Printing of Chalcogen Layer and the Use of an Inter-metallic Material	Utility: Foreign	
	JP 2008-556559	Japan	NSL-069 JP	High-Throughput Printing of Chalcogen Layer and the Use of an Inter-metallic Material	Utility: Foreign	
	11/395,426	United States	NSL-070	High-throughput printing of semiconductor precursor layer from inter-metallic microflake articles	Utility: Non-Provisional	Jeroen K. J. Van Duren
	CN 20078014585	China	NSL-070 CN	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Microflake Particles	Utility: Foreign	
	201110273206.8	China	NSL-070 CN DIV	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES	Utility: Foreign	
	EP 7757445.7	European Patent Office	NSL-070 EP	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Microflake Particles	Utility: Foreign	
	JP 2008-556570	Japan	NSL-070 JP	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Microflake Particles	Utility: Foreign	
	PCT/US07/62763	World Intellectual Property Organization	NSL-070 PC	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES	Utility: PCT	Duren Jeroen K J Van
	11/765,436	United States	NSL-070A/NANOP009	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM CHALCOGENIDE MICROFLAKE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
8,329,501	12/176,312	United States	NSL-070B	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	13/710,229	United States	NSL-070B CON	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES	Utility: Continuation	Matthew R. Robinson
	12/176,323	United States	NSL-070B1	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES	Utility: Non-Provisional	Jeroen K. J. Van Duren
	12/820,127	United States	NSL-070C	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC MICROFLAKE PARTICLES	Utility: Non-Provisional	Jeroen K. J. Van Duren
8,309,163	11/395,668	United States	NSL-071	High-throughput printing of semiconductor precursor layer by use of chalcogen-containing vapor and inter-metallic material	Utility: Non-Provisional	Jeroen K. J. Van Duren
	CN 20078014658.6	China	NSL-071 CN	High-Throughput Formation of Semiconductor Layer by Use of Chalcogen and Inter-metallic Material	Utility: Foreign	

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	EP 7757446.5	European Patent Office	NSL-071 EP	High-Throughput Formation of Semiconductor Layer by Use of Chalcogen and Inter-metallic Material	Utility: Foreign	
	JP 2008-556571	Japan	NSL-071 JP	High-Throughput Formation of Semiconductor Layer by Use of Chalcogen and Inter-metallic Material	Utility: Foreign	
	11/394,849	United States	NSL-072	High-throughput printing of semiconductor precursor layer from inter-metallic nanoflake particles	Utility: Non-Provisional	Jeroen K. J. Van Duren
	CN 20078014617.7	China	NSL-072 CN	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Nanoflake Particles	Utility: Foreign	Jeoren K. J. Van Duren
	EP 7757448.1	European Patent Office	NSL-072 EP	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Nanoflake Particles	Utility: Foreign	
	JP 2008-556573	Japan	NSL-072 JP	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Nanoflake Particles	Utility: Foreign	
	20120220990	Japan	NSL-072 JP/DIV	High-Throughput Printing of Semiconductor Precursor Layer from Inter-metallic Nanoflake Particles	Utility: Divisional	Duren Jeroen K J Van
8,372,734	11/765,422	United States	NSL-072A	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM CHALCOGENIDE NANOFLAKE PARTICLES	Utility: Non-Provisional	Jeroen K. J. Van Duren
	13/766,638	United States	NSL-072A/CON	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM CHALCOGENIDE NANOFLAKE PARTICLES	Utility: Non-Provisional	Jeroen K.J. Van Duren
	12/176,318	United States	NSL-072B	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC NANOFLAKE PARTICLES	Utility: Non-Provisional	Jeroen K. J. Van Duren
	12/176,321	United States	NSL-072B1	HIGH-THROUGHPUT PRINTING OF SEMICONDUCTOR PRECURSOR LAYER FROM INTER-METALLIC NANOFLAKE PARTICLES	Utility: Non-Provisional	Jeroen K. J. Van Duren
	11/762,052	United States	NSL-073	THIN-FILM DEVICES FORMED FROM SOLID GROUP IIIA PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	13/571,685	United States	NSL-073A/NanoP093C1	Thin-Film Devices Formed From Solid Group IIIA Particles	Utility: Non-Provisional	Matthew R. Robinson
8,617,640	11/762,056	United States	NSL-074/NANOP002	THIN-FILM DEVICES FORMED FROM SOLID GROUP IIIA ALLOY PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	11/762,058	United States	NSL-075	SOLID GROUP IIIA PARTICLES FORMED VIA QUENCHING	Utility: Non-Provisional	Matthew R. Robinson
	13/470,287	United States	NSL-075A/NanoP059C1	Solid Group IIIA Particles Formed Via Quenching	Utility: Non-Provisional	Matthew R. Robinson
8,372,685	11/762,060	United States	NSL-076	BANDGAP GRADING IN THIN-FILM DEVICES VIA SOLID GROUP IIIA PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
	11/745,430	United States	NSL-077	HIGH SPECIFIC POWER FLEXIBLE ROOFING MEMBRANE	Utility: Non-Provisional	Paul M. Adriani
	11/762,048	United States	NSL-079	FLEXIBLE UTILITY-SCALE SOLAR ASSEMBLY	Utility: Non-Provisional	Paul M. Adriani
8,158,450	11/746,799	United States	NSL-080	BARRIER FILMS AND HIGH THROUGHPUT MANUFACTURING PROCESSES FOR PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	James R. Sheats
8,071,419	12/304,683	United States	NSL-081	Thin-Film Devices Formed From Solid Particles	Utility: Non-Provisional	Matthew R. Robinson
	EP 7798466.4	European Patent Office	NSL-081 EP	Thin-film Devices Formed From Solid Particles	Utility: Foreign	
8,440,498	13/311,483	United States	NSL-081 PC	THIN-FILM DEVICES FORMED FROM SOLID PARTICLES	Utility: Non-Provisional	Matthew R. Robinson
7,732,229	11/427,328	United States	NSL-084	FORMATION OF SOLAR CELLS WITH CONDUCTIVE BARRIER LAYERS AND FOIL SUBSTRATES	Utility: Non-Provisional	Craig R. Leidholm
	EP 7813500.1	European Patent Office	NSL-086A EP	Individually Encapsulated Solar Cells and/or Solar Cell Strings	Utility: Foreign	
	12/375,382	United States	NSL-086D	Individually Encapsulated Solar Cells and/or Solar Cell Strings	Utility: Non-Provisional	Paul M. Adriani
7,985,919	11/465,783	United States	NSL-089	THERMAL MANAGEMENT FOR PHOTOVOLTAIC DEVICES	Utility: Non-Provisional	Martin R. Roscheisen
8,039,739	11/462,359	United States	NSL-090	INDIVIDUALLY ENCAPSULATED SOLAR CELLS AND SOLAR CELL STRINGS	Utility: Non-Provisional	Philip Capps

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	12/202,125	United States	NSL-091A	Methods and Devices for Large-Scale Solar Installations	Utility: Non-Provisional	Paul M. Adriani
	13/649,138	United States	NSL-091B/NanoP112C1	METHODS AND DEVICES FOR LARGE-SCALE SOLAR INSTALLATIONS	Utility: Non-Provisional	Paul M. Adriani
8,198,117	12/064,031	United States	NSL-092	Photovoltaic Devices With Conductive Barrier Layers and Foil Substrates	Utility: Non-Provisional	Craig R. Leidholm
	CN 20068034955	China	NSL-092 CN	Photovoltaic Devices with Conductive Barrier Layers and Foil Substrates	Utility: Foreign	
	JP 2008-527082	Japan	NSL-092 JP	Photovoltaic Devices with Conductive Barrier Layers and Foil Substrates	Utility: Foreign	
	KR 10-2008-7006510	Republic of Korea	NSL-092 KR	Photovoltaic Devices with Conductive Barrier Layers and Foil Substrates	Utility: Foreign	
	11/844,324	United States	NSL-093	HIGH THROUGHPUT ANNEALING OF PHOTOVOLTAIC MATERIAL	Utility: Non-Provisional	Craig R. Leidholm
	12/024,097	United States	NSL-094	SOLAR CELL ABSORBER LAYER FORMED FROM METAL ION PRECURSORS	Utility: Non-Provisional	Jeoren K. J. Van Duren
	EP 8728782.7	European Patent Office	NSL-094 EP	Solar Cell Absorber Layer Formed from Metal Ion Precursors	Utility: Foreign	
8,414,961	11/956,322	United States	NSL-095	SOLUTION DEPOSITED TRANSPARENT CONDUCTORS	Utility: Non-Provisional	Matthew R. Robinson
	12/395,591	United States	NSL-095A	SOLUTION DEPOSITED TRANSPARENT CONDUCTORS	Utility: Non-Provisional	Matthew R. Robinson
	12/396,435	United States	NSL-095B	ROLL-TO-ROLL NON-VACUUM DEPOSITION OF TRANSPARENT CONDUCTIVE ELECTRODES	Utility: Non-Provisional	Jeroen K.J. Van Duren
	14/022,059	United States	NSL-095BCON	ROLL-TO-ROLL NON-VACUUM DEPOSITION OF TRANSPARENT CONDUCTIVE ELECTRODES	Utility: Continuation	Jeroen K.J. Van Duren
7,658,055	11/537,657	United States	NSL-096	METHOD OF PACKAGING SOLAR MODULES	Utility: Non-Provisional	Paul M. Adriani
	11/538,040	United States	NSL-097A	Methods and devices for installing solar module assemblies	Utility: Non-Provisional	Paul M. Adriani
	11/555,952	United States	NSL-098	PHOTOVOLTAIC DEVICES WITH ELECTRICALLY CONDUCTIVE SUBSTRATES	Utility: Non-Provisional	Addison Shelton
	EP 8733032.0	European Patent Office	NSL-103 EP	Formation of Photovoltaic Absorber Layers on Foil Substrates	Utility: Foreign	
	11/933,407	United States	NSL-130	SOLUTION-BASED FABRICATION OF PHOTOVOLTAIC CELL	Utility: Non-Provisional	Dong Yu
	EP20020728701	European Patent Office	NSL-BB1 EP	Method of forming semiconductor compound film for fabrication of electronic device and film produced by same	Utility: Foreign	
6,821,559	09/898,823	United States	NSL-CC2	METHOD FOR FORMING PARTICULATE MATERIALS FOR THIN-FILM SOLAR CELLS	Utility: Non-Provisional	Chris Eberspacher
	001019640-0001	European Patent Office	NSL-D001 EP	Solar Module	Utility: Foreign	
D616359	29/317,182	United States	NSL-D002	SOLAR MODULE	Design	Paul M. Adriani
D616812	29/317,183	United States	NSL-D003	SOLAR MODULE	Design	Jeremy H. Scholz
D644601	29/317,529	United States	NSL-D004	SOLAR MODULE	Design	Paul M. Adriani
	001031108-0001	European Patent Office	NSL-D005 EP	Solar Module Electrical Housing	Utility: Foreign	
D616813	29/319,943	United States	NSL-D008	SOLAR MODULE	Design	Robert Stancel
	EP 1059265	European Patent Office	NSL-D008 EP	Solar Module	Utility: Foreign	
	EP 1507658	European Union Trademark and Designs Office	NSL-D009 EP	Textured Glass	Design	
D632247	29/356,581	United States	NSL-D010	SOLAR CELL	Design	Robert Stancel
	EP 1604661	European Patent Office	NSL-D010 EP	Solar Cell Patterns	Utility: Foreign	
	29/356,582	United States	NSL-D010A	Solar Module	Design	Robert Stancel
	29/356,583	United States	NSL-D010B	SOLAR CELL ELECTRODE PATTERN	Design	Robert Stancel
6,264,741	09/449,036	United States	SD6307.1/S91	SELF-ASSEMBLY OF NANOCOMPOSITE MATERIALS	Utility: Non-Provisional	C. Jeffrey BRINKER
	78/716,776	United States	SUNMP001EP	Solar Roof Tiles And Modules With Heat Exchange	Utility: Foreign	Eugenia M. Corrales

PatentNum	ApplicationNum	Country	AttorneyRef	Title	Type	FirstInventor
	11/788,456	United States	Sunm-P002	Modular solar panels with heat exchange	Utility: Non-Provisional	Eugenia M. Corrales
	13/159,388	United States	SunmP002C1	Modular Solar Panels with Heat Exchange	Utility: Non-Provisional	Eugenia M. Corrales
7,728,219	11/788,573	United States	Sunm-P004	Photovoltaic Cells, Modules and Methods of Making Same	Utility: Non-Provisional	
	11/804,657	United States	SunmP007	Solar roof tiles with heat exchange	Utility: Non-Provisional	Eugenia M. Corrales
	PCT/US11/28577	World Intellectual Property Organization	SunmP011WO	INTEGRATED HEAT SINK AND SYSTEM FOR ENHANCED THERMAL POWER GENERATION	Utility: PCT	

USPTO ASSIGNMENT

Pursuant to paragraphs 3a and 3b of the Agreement for Surrender of IP Collateral and Strict Foreclosure, dated for reference purposes as of September 30, 2013 ("September Agreement"), made by and between aeris Capital Sustainable IP, a Cayman exempted company ("Aeris IP" or "Lender"), as successor by assignment from aeris Capital Sustainable Impact Private Investment Fund Cayman L.P., and Nanosolar, Inc., a California corporation (as a party to the September Agreement, "Obligor"), and in order to give effect in full to the September Agreement,

THIS USPTO ASSIGNMENT is made by **NANOSOLAR, INC.**, a California Corporation having Offices at **SAN JOSE, CALIFORNIA** (as a party to this USPTO Assignment, the "Assignor") in favor of Aeris IP as follows:

WHEREAS, Assignor owns certain INTELLECTUAL PROPERTY more fully described in the September Agreement; and

WHEREAS Aeris IP holds, by assignment from aeris Capital Sustainable Impact Private Investment Fund Cayman L.P., all right, title and interest in and to certain collateral assignments made by Assignor in respect of the INTELLECTUAL PROPERTY as such collateral assignments have been filed or recorded from time to time prior to the September Agreement and the date of this USPTO Assignment (collectively the "Collateral Assignments"); and

WHEREAS, as further assurances made pursuant to the September Agreement, Aeris IP desires to release the Collateral Assignments prior to the recordation of assignments by Assignor to Aeris IP as assignee; and

WHEREAS, Assignor desires to provide further assurances pursuant to the September Agreement by the filing of this USPTO Assignment to give constructive notice by such filing of the assignment to Aeris IP of the INTELLECTUAL PROPERTY; and

WHEREAS, aeris CAPITAL Sustainable IP Ltd., a body having corporate powers under the laws of **the Cayman Islands**, and having its offices at **c/o Ayadoo Management Limited, Landmark Square, 1st Floor, 64 Earth Close, PO Box 715, Grand Cayman, KY1-1107, Cayman Islands**, is desirous of reflecting, as a matter of record, that it has obtained all right, title and interest previously held by Assignor in and to said INTELLECTUAL PROPERTY, Inventions and, said Letters Patent, said Applications for Letters Patent.

NOW, THEREFORE, for good and valuable consideration as provided in the September Agreement, the receipt of which is therein and hereby acknowledged:

DEFINITIONS

"Intellectual Property" means new and useful inventions which are described in Letters Patent Applications for Letters Patent having the, patent numbers, application numbers, and filing date as listed in Appendix A, and in and to any Letters Patent, United States or foreign, to be obtained therefor and thereon, and to any and all improvements which are disclosed in said Letters Patent and Said Applications for Letters Patent listed in Appendix A; any Letters Patent which has been or may be granted for said inventions in the United States of America and any foreign country; any division, continuation, or continuation-in-part of said application; any reissue or extension of said Letters Patent; and all rights under the International Convention for the Protection of Industrial Property, certain Trademark Applications and Trademarks listed in Appendix B, and in and to any Trademarks, United States, state, common law, or foreign, to be obtained on the marks therefor and thereon, and to other Inventions, Letters Patent, Applications for Letters Patent, Trademarks, Trademark Applications, Industrial Designs, Copyrights, Know How, Trade Secrets or other intellectual property rights not listed in which said Assignor has an ownership interest.

Said Appendix A and said Appendix B are part of this USPTO Assignment and are incorporated herein by reference for all purposes.

To the extent an application and filing date for any Application for Letters Patent or Trademark Application is unknown, said Assignor hereby authorizes and requests their attorney, Joshua D. Isenberg, of 809 Corporate Way, Fremont, California, to insert here in parentheses (Application number_____, filed _____) the application number and filing date of said Application when known.

"Know how" means factual knowledge not capable of precise, separate description but which, when used in an accumulated form, after being acquired as the result of trial and error, gives to the one acquiring it an ability to produce something which he otherwise would not have known how to produce with the same accuracy or precision found necessary for commercial success.

"Trade Secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being

readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

GRANT

1. Assignor has sold, assigned, transferred and set over to Aeris IP pursuant to the September Agreement, and does hereby sell, assign, transfer and set over unto said Aeris IP, the entire right, title and interest in, to and under said INTELLECTUAL PROPERTY, including the entire right title and interest in said inventions; said right, title and interest to be held and enjoyed by said Aeris IP for its own use and behoove to the full end of the term for which Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by the Assignor, had this sale and assignment not been made.

2. Assignor has sold, assigned, transferred and set over to Aeris IP pursuant to the September Agreement, and does hereby sell, assign, transfer and set over unto said Aeris IP all inventions conceived or reduced to practice by any and all employees of Assignor during the time of employment of such employees and one year thereafter, and all for U.S. and foreign letters patent disclosing any such inventions, and all U.S. and foreign letters patent granted upon such inventions, all of which inventions conceived by employees of Assignor have been assigned to said Aeris IP.

3. Aeris IP hereby warrants and represents that, at the time of execution and delivery of these presents, said Aeris IP is the lawful owner of the entire right, title and interest in and to said INTELLECTUAL PROPERTY, and that said Aeris IP has not entered into any assignment, contract or understanding in conflict herewith.

4. Assignor has covenanted and agreed in the September Agreement and hereby expressly reaffirms and agrees to assist and cooperate with said Aeris IP, whereby said Aeris IP may enjoy to the fullest extent and right, title and interest herein conveyed, provided, however, that the entire expense which may be incurred by said Assignor in lending such assistance and cooperation be paid by Aeris IP. Such cooperation shall include: (a) prompt execution of all papers (prepared at the expense of Aeris IP) which are deemed necessary or desirable by Aeris IP to perfect said right, title and interest herein conveyed, (b) prompt execution of all petitions, oaths, specifications, declarations and other papers (prepared at the expense of Aeris IP) which are deemed necessary or desirable by Aeris IP for filing or prosecuting in the United States or any foreign country said application, any Patent or Trademark application which is a division, continuation, or continuation-in-part of said application, any reissue application for any Letters Patent granted on said applications, or for any interference proceeding involving said application or Letters Patent granted thereon; and (c) prompt assistance and cooperation in the prosecution of all legal proceedings involving said inventions, said applications, or Letters Patent granted thereon, including oppositions, cancellation proceedings, priority contests, public use proceedings and court actions.

5. The terms, covenants and conditions of this Assignment shall inure to the benefit of said Aeris IP, its successors, assigns and/or other legal representatives, and shall be binding upon said Assignor, its heirs, legal representatives and assigns.

6. Aeris IP, as successor by assignment from aeris Capital Sustainable Impact Private Investment Fund Cayman L.P., and as the holder of such of the obligations originally owed by Assignor to aeris Capital Sustainable Impact Private Investment Fund Cayman L.P. as are secured by the INTELLECTUAL PROPERTY described in the Collateral Assignments, and as successor to all rights in respect of the Collateral Assignments and the INTELLECTUAL PROPERTY described in the Collateral Assignments, hereby requests the Commissioner of Patents and Trademarks to cause to be filed and recorded the release by Aeris IP of the security interest reflected in the Collateral Assignments.

7. Assignor and Aeris IP hereby further request the Commissioner of Patents and Trademarks to issue said Letters Patent of the United States to said Aeris IP as the assignee of said Inventions, and that the issuance of said Letters Patent of the United States to Aeris IP of said Inventions be free of the Collateral Assignments, the release and termination of which were recorded prior in time to issuance thereof.

IN WITNESS WHEREOF said Assignor and Aeris IP have executed and delivered this instrument on the date noted below.

Novatel, Inc.

By: _____ 12/22/13
Paul Spigois, Chief Executive Officer Date

aeris CAPITAL Sustainable IP Ltd.

By: _____ _____
Date

_____
Print Name and title

By: _____ _____
Date

_____
Print Name and title