

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3141655

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
WELLS FARGO BANK, N.A.	12/10/2014

RECEIVING PARTY DATA

Name:	EMCORE SOLAR POWER, INC.
Street Address:	10420 RESEARCH ROAD SE
City:	ALBUQUERQUE
State/Country:	NEW MEXICO
Postal Code:	87123

PROPERTY NUMBERS Total: 97

Property Type	Number
Patent Number:	6278054
Patent Number:	6359210
Patent Number:	6600100
Patent Number:	6680432
Patent Number:	6864414
Patent Number:	7017407
Patent Number:	7115811
Patent Number:	7339109
Patent Number:	7449630
Patent Number:	7553691
Patent Number:	7592538
Patent Number:	7629240
Patent Number:	7687707
Patent Number:	7709287
Patent Number:	7727795
Patent Number:	7732705
Patent Number:	7741146
Patent Number:	7759572
Patent Number:	7785989
Patent Number:	7842881
Patent Number:	7960201

PATENT

Property Type	Number
Patent Number:	8039291
Patent Number:	8187907
Patent Number:	8236600
Patent Number:	8263853
Patent Number:	8263855
Patent Number:	8263856
Patent Number:	8513518
Patent Number:	8536445
Patent Number:	8536446
Patent Number:	8586859
Patent Number:	8686282
Application Number:	12041490
Application Number:	12756799
Application Number:	29476181
Application Number:	29476182
Application Number:	29480534
Application Number:	12768457
Application Number:	14186287
Application Number:	11860183
Application Number:	12844673
Application Number:	13569794
Application Number:	13473802
Application Number:	12218558
Application Number:	13603088
Application Number:	13315877
Application Number:	13440331
Application Number:	14243732
Application Number:	12813408
Application Number:	13401181
Application Number:	14026818
Application Number:	13372068
Application Number:	13465477
Application Number:	13463069
Application Number:	13547334
Application Number:	13415425
Application Number:	12544001
Application Number:	13604883
Application Number:	13831406
Application Number:	12708361

PATENT

Property Type	Number
Application Number:	12716814
Application Number:	13768683
Application Number:	13836742
Application Number:	14044147
Application Number:	13104451
Application Number:	13491390
Application Number:	13941936
Application Number:	13733362
Application Number:	13961354
Application Number:	13921756
Application Number:	13954610
Application Number:	13954630
Application Number:	13964774
Application Number:	14014749
Application Number:	14052454
Application Number:	13535570
Application Number:	13554527
Application Number:	13741070
Application Number:	13524523
Application Number:	14216607
Application Number:	14102053
Application Number:	14151236
Application Number:	61973543
Application Number:	14224212
Application Number:	14282610
Application Number:	61976108
Application Number:	61974047
Application Number:	61974050
Application Number:	61977335
Application Number:	29493998
Application Number:	12123864
Application Number:	13956122
Patent Number:	6617508
Patent Number:	6407327
Patent Number:	6103970
Patent Number:	D665339
Patent Number:	D665338

CORRESPONDENCE DATA

PATENT

REEL: 034590 FRAME: 0763

Fax Number: (212)735-2000

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: 2127353000

Email: justin.selle@skadden.com

Correspondent Name: SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP

Address Line 1: FOUR TIMES SQUARE

Address Line 2: KEN KUMAYAMA, ESQ.

Address Line 4: NEW YORK, NEW YORK 10036

ATTORNEY DOCKET NUMBER:	075810/17
--------------------------------	-----------

NAME OF SUBMITTER:	KEN KUMAYAMA
---------------------------	--------------

SIGNATURE:	/Ken Kumayama/
-------------------	----------------

DATE SIGNED:	12/10/2014
---------------------	------------

Total Attachments: 17

source=Patent Collateral Release (executed)#page1.tif
source=Patent Collateral Release (executed)#page2.tif
source=Patent Collateral Release (executed)#page3.tif
source=Patent Collateral Release (executed)#page4.tif
source=Patent Collateral Release (executed)#page5.tif
source=Patent Collateral Release (executed)#page6.tif
source=Patent Collateral Release (executed)#page7.tif
source=Patent Collateral Release (executed)#page8.tif
source=Patent Collateral Release (executed)#page9.tif
source=Patent Collateral Release (executed)#page10.tif
source=Patent Collateral Release (executed)#page11.tif
source=Patent Collateral Release (executed)#page12.tif
source=Patent Collateral Release (executed)#page13.tif
source=Patent Collateral Release (executed)#page14.tif
source=Patent Collateral Release (executed)#page15.tif
source=Patent Collateral Release (executed)#page16.tif
source=Patent Collateral Release (executed)#page17.tif

**RELEASE OF SECURITY INTEREST IN
CERTAIN PATENT COLLATERAL**

This RELEASE OF SECURITY INTEREST IN CERTAIN PATENT COLLATERAL, dated as of the date written below (this “Release”), is made by Wells Fargo Bank, N.A., having a business location at 100 West Washington Street, 15th Floor, MAC S4101-158, Phoenix, AZ 85003, for itself and as agent for Wells Fargo Merchant Services, L.L.C. (“Wells Fargo”), in favor of EMCORE Corporation, a New Jersey corporation and EMCORE Solar Power, Inc., a Delaware corporation, each with a business located at 10420 Research Rd. SE, Albuquerque, NM 87123 (collectively, “EMCORE”).

WITNESSETH

WHEREAS, EMCORE Corporation is a party to that certain Credit and Security Agreement, dated as of November 11, 2010 (as amended, amended and restated, supplemented or otherwise modified from time to time, the “Security Agreement”) for the benefit of Wells Fargo and as agent for Wells Fargo Merchant Services, L.L.C., pursuant to which EMCORE executed and delivered that certain Patent and Trademark Security Agreement, dated as of November 11, 2010, which was recorded with the United States Patent and Trademark Office (“PTO”), with respect to patents, on May 18, 2011 at Reel 026304 and Frame 0142 (the “IP Security Agreement”);

WHEREAS, pursuant to the Security Agreement and the IP Security Agreement, EMCORE granted to Wells Fargo for the benefit of Wells Fargo and as agent for Wells Fargo Merchant Services, L.L.C., a Lien and security interest (the “Security Interest”), with power of sale to the extent permitted by law, in the following Collateral of EMCORE owned as of the execution of the IP Security Agreement or thereafter acquired by EMCORE: (a) all patents and patent applications of EMCORE, including, without limitation, the Sold Patents, (b) all fees or royalties with respect to each of the patents and patent applications of EMCORE, and including without limitation the right to sue for past infringement and damages therefor, and (c) licenses thereunder (collectively, the “Patent Collateral”), to secure payment of the Indebtedness;

WHEREAS, EMCORE Corporation has entered into a transaction pursuant to which it will no longer be the direct or indirect owner of the Sold Patents as of the closing of such transaction; and

WHEREAS, Wells Fargo has agreed to release its Security Interest in the Sold Patents and to execute this Release for purposes of recording in the PTO the termination, release and discharge of its Security Interest in the Sold Patents.

NOW, THEREFORE, in consideration of the premises and for good and valuable consideration, the sufficiency of which is hereby acknowledged, Wells Fargo hereby agrees as follows:

1. Definitions. For purposes of this Release:

- (a) “Related Patents” means, with respect to any patent or patent application: (i) any and all continuations, divisionals, and provisionals and patents issuing on such patent or patent application, and all reissues, reexaminations, substitutions, renewals and extensions and other review procedures that, now or hereafter, of, or that arise out of, descend from, or claim priority to, such patent or patent application, whether directly or indirectly, existing or future; and (iii) any and all foreign patents, foreign patent applications, and foreign counterparts, now or hereafter existing, of or that claim priority to, or from which priority is claimed for, any of the foregoing, whether directly or indirectly, existing or future; and
- (b) “Sold Patents” means the patents and patent applications set forth on Schedule A, and all Related Patents thereto.

Unless otherwise specified herein, all other capitalized terms used but not expressly defined herein shall have the meanings given to them in the IP Security Agreement.

2. Release of Security Interest. The Assignor hereby releases, terminates, and discharges the entirety of its Security Interest in all of EMCORE’s right, title and interest in and to (a) all patents and patent applications of EMCORE Solar Power, Inc., including, without limitation, the Sold Patents, (b) any Sold Patents owned by EMCORE Corporation, (c) all fees or royalties with respect to each of the foregoing patents and patent applications, and including without limitation the right to sue for past infringement and damages therefor, and (d) licenses under any of the foregoing, and any right, title or interest of Wells Fargo in such Security Interest, if any, shall hereby terminate, cease and become void.

3. Filing of the Release. Wells Fargo hereby authorizes the filing of this Release in the PTO by EMCORE (or EMCORE’s designee), at EMCORE’s sole cost and expense. Wells Fargo agrees to duly execute and deliver any further documents and do such other acts as may be reasonably necessary and efficacious to effect the release of the Security Interest granted pursuant to the IP Security Agreement as contemplated hereby.

4. Governing Law. THIS RELEASE AND ANY CLAIM, CONTROVERSY OR DISPUTE ARISING UNDER OR RELATED TO THIS RELEASE OR THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF ARIZONA, WITHOUT REGARD TO CONFLICTS OF LAW PROVISIONS.

[Signature Page Follows]

IN WITNESS WHEREOF, Wells Fargo has caused this Release to be duly executed by its officer thereunto duly authorized as of December 10, 2014.

WELLS FARGO BANK, National Association

By: _____

Name: Joe Primack

Title: Authorized Signatory

EMCORE CORPORATION, a New Jersey corporation

By: _____

Name: Hong O. Hon

Title: President and Chief Executive Officer

EMCORE SOLAR POWER, INC., a Delaware corporation

By: _____

Name: Alfredo Gomez

Title: _____

[Signature Page to Release of Security Interest in Certain Patent Collateral]

IN WITNESS WHEREOF, Wells Fargo has caused this Release to be duly executed by its officer thereunto duly authorized as of December 10, 2014.

WELLS FARGO BANK, National Association

By: _____

Name: _____

Title: _____

EMCORE CORPORATION, a New Jersey corporation

By:  _____

Name: Hong O. Hou

Title: President and Chief Executive Officer

EMCORE SOLAR POWER, INC., a Delaware corporation

By: _____

Name: Alfredo Gomez

Title: _____

[Signature Page to Release of Security Interest in Certain Patent Collateral]

IN WITNESS WHEREOF, Wells Fargo has caused this Release to be duly executed by its officer thereunto duly authorized as of December 10, 2014.

WELLS FARGO BANK, National Association

By: _____

Name: _____

Title: _____

EMCORE CORPORATION, a New Jersey corporation

By: _____

Name: Hong Q. Hou

Title: President and Chief Executive Officer

EMCORE SOLAR POWER, INC., a Delaware corporation

By:  _____

Name: Alfredo Gomez

Title: Secretary

[Signature Page to Release of Security Interest in Certain Patent Collateral]

**SCHEDULE A
TO
RELEASE OF SECURITY INTEREST
IN CERTAIN PATENT COLLATERAL**

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
United States	Solar Cell Having An Integral Monolithically Grown Bypass Diode	09/314,597	19-May-1999	6,278,054	21-Aug-2001
United States	Solar Cell Having An Integral Monolithically Grown Bypass Diode	09/753,492	02-Jan-2001	6,359,210	19-Mar-2002
United States	Solar Cell Having An Integral Monolithically Grown Bypass Diode	09/934,221	21-Aug-2001	6,600,100	29-Jul-2003
United States	Apparatus And Method For Optimizing The Efficiency Of A Bypass Diode In Multijunction Solar Cells	09/999,598	24-Oct-2001	6,680,432	20-Jan-2004
United States	Apparatus And Method For Integral Bypass Diode In Solar Cells	10/280,593	24-Oct-2002	6,864,414	08-Mar-2005
United States	Method And Apparatus Of Multiplejunction Solar Cell Structure With High Band Gap Heterojunction Middle Cell	10/285,780	31-Oct-2002	7,071,407	04-Jul-2006
United States	Semiconductor Body Forming A Solar Cell With A Bypass Diode	10/336,247	03-Jan-2003	7,115,811	03-Oct-2006
United States	Apparatus And Method For Optimizing The Efficiency Of Germanium Junctions In Multi-junction Solar Cells	09/885,319	19-Jun-2001	7,339,109	04-Mar-2008
United States	Solar Cell Having An Integral Monolithically Grown Bypass Diode	11/100,066	06-Apr-2005	7,449,630	11-Nov-2008
United States	Method And Apparatus Of Multiplejunction Solar Cell Structure With High Band Gap Heterojunction Middle Cell	11/114,454	26-Apr-2005	7,553,691	30-Jun-2009
United States	Method Of Fabricating A Multijunction Solar Cell With A Bypass Diode Having An Intrinsic Layer	11/058,595	06-May-2005	7,592,538	22-Sep-2009
United States	Controlling Dopant Diffusion In A Semiconductor Region	11/143,516	02-Jun-2005	7,629,240	08-Dec-2009
United States	Via Structures In Solar Cells With Bypass Diode	11/280,379	16-Nov-2005	7,687,707	30-Mar-2010
United States	Method Of Forming A Multijunction Solar Cell Structure With A Gaas/Algaas Tunnel Diode	11/401,720	10-Apr-2006	7,709,287	04-May-2010

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
United States	Exponentially Doped Layers In Inverted Metamorphic Multijunction Solar Cells	12/187,454	07-Aug-2008	7,727,795	01-Jun-2010
United States	Reliable Interconnection Of Solar Cells Including Integral Bypass Diode	11/247,828	11-Oct-2005	7,732,705	08-Jun-2010
United States	Demounting Of Inverted Metamorphic Multijunction Solar Cells	12/190,449	12-Aug-2008	7,741,146	22-Jun-2010
United States	Multijunction Solar Cell With A Bypass Diode Having An Intrinsic Layer	10/773,343	06-Feb-2004	7,759,572	20-Jul-2010
United States	Growth Substrates For Inverted Metamorphic Multijunction Solar Cells	12/337,014	17-Dec-2008	7,785,989	31-Aug-2010
United States	Solar Cell Structure With Localized Doping In Cap Layer	11/550,881	19-Oct-2006	7,842,881	30-Nov-2010
United States	String Interconnection And Fabrication Of Inverted Metamorphic Multijunction Solar Cells	12/362,201	29-Jan-2009	7,960,201	14-Jan-2011
United States	Emounting Of Inverted Metamorphic Multijunction Solar Cells	12/816,205	15-Jun-2010	8,039,291	18-Oct-2011
United States	Solder Structures For Fabrication Of Inverted Metamorphic Multijunction Solar Cells	12/775,946	07-May-2010	8,187,907	29-May-2012
United States	Joining Method For Preparing An Inverted Metamorphic Multijunction Solar Cell	12/267,812	10-Nov-2008	8,236,600	07-Aug-2012
United States	Wafer Level Interconnection Of Inverted Metamorphic Multijunction Solar Cells	12/187,477	07-Aug-2008	8,263,853	11-Sep-2012
United States	Multijunction Solar Cell With A Bypass Diode	12/776,120	07-May-2010	8,263,855	11-Sep-2012
United States	Inverted Metamorphic Multijunction Solar Cells With Back Contacts	12/537,361	07-Aug-2009	8,263,856	11-Sep-2012
United States	Terrestrial Solar Power System Using III-V Semiconductor Solar Cells	12/417,367	02-Apr-2009	8,513,518	20-Aug-2013
United States	Inverted Metamorphic Multijunction Solar Cells	11/445,793	02-Jun-2006	8,536,445	17-Sep-2013
United States	Inverted Metamorphic Multijunction Solar Cells	12/758,390	12-Apr-2010	8,536,446	17-Sep-2013
United States	Wafer Level Interconnection Of Inverted Metamorphic Multijunction Solar Cells	13/560,663	27-Jul-2012	8,586,859	19-Nov-2013
United States	Solar Power System For Space Vehicles Or Satellites Using Inverted Metamorphic Multijunction Solar Cells				
United States	Integral Bypass Diode	13/946,574	19-Jul-2013	8,686,282	01-Apr-2014
Japan	An Apparatus And Method For Integral Bypass Diode In Solar Cells	2003-555555	24-Oct-2002	JP4119844 B	02-May-2008
France		02805514	24-Jan-2002	1440480	08-Oct-2008

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Germany	An Apparatus And Method For Integral Bypass Diode In Solar Cells	02805514	24-Jan-2002	1440480	08-Oct-2008
Italy	An Apparatus And Method For Integral Bypass Diode In Solar Cells	02805514	24-Jan-2002	1440480	08-Oct-2008
Germany	Solar cell having an integral monolithically grown bypass diode	99925702	19-May-1999	1008188	25-Nov-2009
Italy	Solar cell having an integral monolithically grown bypass diode	99925702	19-May-1999	1008188	25-Nov-2009
Spain	Solar cell having an integral monolithically grown bypass diode	99925702	19-May-1999	1008188	25-Nov-2009
France	Solar cell having an integral monolithically grown bypass diode	4005841	04-Aug-2004	1443566	15-Oct-2008
Germany	Solar cell having an integral monolithically grown bypass diode	4005841	04-Aug-2004	1443566	15-Oct-2008
Great Britain	Solar cell having an integral monolithically grown bypass diode	4005841	04-Aug-2004	1443566	15-Oct-2008
Japan	Bypass Diode	2005-217577	19-May-1999	JP4606959 B	15-Oct-2010
France	Solar Cell Having A Bypass Diode For Reverse Bias Protection	02765896	26-Jul-2002	1428267	12-Sep-2012
Great Britain	Solar Cell Having A Bypass Diode For Reverse Bias Protection	02765896	26-Jul-2002	1428267	12-Sep-2012
Italy	Solar Cell Having A Bypass Diode For Reverse Bias Protection	02765896	26-Jul-2002	1428267	12-Sep-2012
Germany	Solar Cell Having A Bypass Diode For Reverse Bias Protection	02765896	26-Jul-2002	60243695.8	12-Sep-2012
Germany	Reliable interconnection of solar cells including integral bypass diode	20060016119	02-Aug-2006	602006028412.8	28-Mar-2012
China	Reliable interconnection of solar cells including integral bypass diode	200610128696	08-Sep-2006	20610128696.1	24-Feb-2010
France	Reliable interconnection of solar cells including integral bypass diode	06016119	02-Aug-2006	1775778	28-Mar-2012
Japan	Internal reliable connection in a solar cell that includes an integrated bypass diode	2006-277649	11-Oct-2006	5302500	28-Jun-2013
China	Via structures in solar cells with bypass diode	200610128670	04-Sep-2006	ZL 200610128670.7	044-Jul-2012
Japan	Via structure of the solar cell with a bypass diode	2006-337609	16-Nov-2006	5390069	18-Oct-2013
Europe	Via Structures In Solar Cells With Bypass Diode	06016118.9	02-Aug-2006	1788628	22-Jan-2014

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Germany	IMM Via	06016118.9	02-Aug-2006	1788628	22-Jan-2014
France	IMM Via	06016118.9	02-Aug-2006	1788628	22-Jan-2014
Italy	IMM Via	06016118.9	02-Aug-2006	1788628	22-Jan-2014
China	Multijunction solar cells and forming method	200610170015	22-Dec-2006	ZL 200610170015.8	077-Sep-2011
India	Multijunction solar cells and forming method	IN2553DEL2006	28-Nov-2006	252190	30-Apr-2012
China	Inverted metamorphic solar cell with bypass diode	200710170333	12-Nov-2007	ZL 200710170333.9	10-Apr-2013
Germany	Inverted metamorphic solar cell with via for backside contacts	20070020333	17-Oct-2007	60-2007-014- 464.7-08	11-May-2011
Japan	Inverted modified solar cell structure having a via for the back-side contact	2008022765	01-Feb-2008	5512086	04-Apr-2014
China	Inverted metamorphic solar cell with via for backside contacts	200710302234	20-Dec-2007	200710302234.1	13-Jul-2011
Germany	Inverted metamorphic solar cell with via for backside contacts	07020333.6	17-Oct-2007	602007014464.7	11-May-2011
Japan	Solar cell structure having a localized doping of the cap	2007267417	15-Oct-2010	4822137	16-Sep-2011
China	Solar cell structure with localized doping of cap layer	200710163384	19-Oct-2007	200710163384.9	15-Sep-10
China	Inverted metamorphic solar cell mounted on flexible film	200710164349	30-Oct-2007	ZL 200710164349.9	2-May-12
Germany	Barrier layers in inverted metamorphic multijunction solar cells	08013467	25-Jul-2008	2148378	01-Jun-2011
France	Barrier layers in inverted metamorphic multijunction solar cells	08013467	25-Jul-2008	2148378	01-Jun-2011
Italy	Barrier layers in inverted metamorphic multijunction solar cells	08013467	25-Jul-2008	2148378	01-Jun-2011
China	Barrier layers in inverted metamorphic multijunction solar cells	200810211416	22-Sep-2008	ZL 200810211416.2	27-Jun-2012
Japan	Layers doped exponentially in the inverted metamorphic multijunction solar cells	2008-269598	20-Oct-2008	5318522	19-Jul-2013
Germany	A process for the production of thin inverted metamorphic multijunction solar cell with a rigid carrier	102008034701	25-Jul-2008	102008034071	08-Jul-2010
China	Thin with a rigid support inverted metamorphic multijunction solar cells	200810133368	11-Aug-2008	ZL 200810133368.X	08-Feb-2012

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Japan	Heterozygous sub-cells in the inverted metamorphic multi-junction solar cell	2009-003363	09-Jan-2009	5425480	06-Dec-2013
Taiwan	Surrogate substrates for inverted metamorphic multijunction solar cells	098138702	13-Nov-2009	201029197	01-Aug-2010
Japan	Thick Grid	2011-06450	01-Nov-2011	JP,3173016,B	21-Dec-2011
China	Used to produce energy from solar photovoltaic solar cells	201120344003	07-Sep-2011	ZL 201120344003.9	25-Jul-2012
Italy	Grid Design for III-IV Compound Semiconductor Cell	MI2011U000417	29-Dec-2011	276779	04-Oct-2013
Spain	A disposition of photovoltaic solar cell	201230279	13-Mar-2012	201230279	29-Aug-2012
Turkey	Grid Design for III-IV Compound Semiconductor Cell	2011/09647	29-Sep-2011	TR201109647B	22-Aug-1012
China	Intercell L-Clips	201220435438.9	10-Aug-2012	ZL 201220435438.9	03-Apr-2013
United States	Multijunction Solar Cell With Two Step Diffusion Region In Substrate	12/041,490	03-Mar-2008		
United States	Method of Fabricating a Multijunction Solar Cell with a Phosphorus-Containing Nucleation Layer	12/756,799	08-Apr-2010		
United States		29/476,181	11-Dec-2013		
United States		29/476,182	11-Dec-13		
United States		29/480,534	27-Jan-14		
United States	Integrated Semiconductor Structure with a Solar Cell and a Bypass Diode	12/768,457	27-Apr-2010		
United States		14/186,287	21-Feb-2014		
United States	Barrier Layers In Inverted Metamorphic Multijunction Solar Cells	11/860,183	24-Sep-2007		
United States		12/844,673	27-Jul-2010		
United States		13/569,794	8-Aug-2012		
United States	Heterojunction Subcells In Inverted Metamorphic Multijunction Solar Cells	13/473,802	17-May-2012		
United States	High band gap contact layer in inverted metamorphic multijunction solar cells	12/218,558	16-Jul-2008		
United States	Gallium Arsenide Solar Cell With Germanium/Palladium Contact	13/603,088	04-Sep-2012	8.753.918	17-Jun-2014
United States	Contact Layout And String Interconnection Of Inverted Metamorphic Multijunction Solar Cells	13/315,877	09-Dec-2011		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
United States	String Interconnection Of Inverted Metamorphic Multijunction Solar Cells On Flexible Perforated Carriers	13/440,331	05-Apr-2012		
United States		14/243,732	02-Apr-2014		
United States		12/813,408	10-Jun-2010		
United States	Inverted Metamorphic Multijunction Solar Cell With Two Metamorphic Layers And Homojunction Top Cell	13/401,181	21-Feb-2012		
United States		14/026,818	13-Sep-2013		
United States	Mounting Of Solar Cells On A Flexible Substrate	13/372,068	13-Feb-2012		
United States	Epitaxial Lift Off In Inverted Metamorphic Multijunction Solar Cells	13/465,477	07-May-2012	8,778,199	15-Jul-2014
United States	Four Junction Inverted Metamorphic Multijunction Solar Cell With A Single Metamorphic Layer	13/463,069	03-May-2012		
United States		13/547,334	12-Jul-2012		
United States	Inverted Multijunction Solar Cells With Group Iv Alloys	13/415,425	08-Mar-2012		
United States	Back Metal Layers in Inverted Metamorphic Multijunction Solar Cells	12/544,001	19-Aug-2009		
United States	Inverted Metamorphic Multijunction Solar Cell With Gradation In Doping In The Window Layer	13/604,883	06-Sep-2012		
United States	Inverted Metamorphic Multijunction Solar Cells Mounted On Flexible Support With Bifacial Contacts	13/831,406	14-Mar-2013		
United States		12/708,361	18-Feb-2010		
United States		12/716,814	03-Mar-2010		
United States	Inverted Metamorphic Multijunction Solar Cell With Gradation In Doping In The Window Layer	13/768,683	15-Feb-2013		
United States	Solar Cell With Gradation In Doping In The Window Layer	13/836,742	15-Mar-2013		
United States		12/844,673	27-Jul-2010		
United States		14/044,147	02-Oct-2013		
United States	Grid Design For III-V Compound Semiconductor Cell	13/104,451	10-May-2011		
United States	Radiation Resistant Inverted Metamorphic Multijunction Solar Cell	13/491,390	07-Jun-2012		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
United States	Radiation Resistant Inverted Metamorphic Multijunction Solar Cell	13/941,936	01-Aug-2013		
United States		13/733,362	03-Jan-2013		
United States		13/961,354	07-Aug-2013		
United States		13/921,756	19-Jun-2013		
United States		13/954,610	30-Jul-2013		
United States		13/954,630	30-Jul-2013		
United States		13/964,774	12-Aug-2013		
United States		14/014,749	30-Aug-2013		
United States		14/052,454	11-Oct-2013		
United States	Solar Cell Assembly, Solar Cell Panel, And Method For Manufacturing The Same	13/535,570	28-Jun-2012		
United States		13/554,527	20-Jul-2012		
United States	Solar Cell Interconnect Assembly And Method For Manufacturing The Same	13/741,070	14-Jan-2013		
United States	System And Method For The Generation Of Electrical Power From Sunlight	13/524,523	15-Jun-2012		
United States		14/216,607	17-Mar-2014		
United States		14/102,053	10-Dec-2013		
United States		14/151,236	09-Jan-2014		
United States		61/973,543	01-Apr-2014		
United States		14/224,212	25-Mar-2014		
United States		14/282,610	20-May-2014		
United States		61/976,108	07-Apr-2014		
United States		61/974,047	02-Apr-2014		
United States		61/974,050	02-Apr-2014		
United States		61/977,335	09-Apr-2014		
United States	Wafer Dicing	29/493,998	16-Jun-2014		
Europe	An apparatus and method for integral bypass diode in solar cells	8017554	07-Oct-2008		
Europe	Method and apparatus of multiplejunction solar cell structure with high band gap heterojunction middle cell	03810750.4	05-Aug-2003		
Europe	Solar cell having an integral monolithically grown bypass diode	9014641.6	19-May-1999		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Europe	Cropped Corner Design	002419028	06-Mar-2014		
Japan		2014-002714	12-Feb-2014		
India	Solar Cell With Feedthrough Via	380/DEL/2006	13-Feb-2006		
India	Reliable Interconnection Of Solar Cells Including Integral Bypass Diode	1770/DEL/2006	03-Aug-2006		
India	Via Structures In Solar Cells With Bypass Diode	777/DEL/2006	04-Aug-2006		
Europe	Metamorphic layers in multijunction solar cells	6024750.9	29-Nov-2006		
Japan	Metamorphic layer in multi-junction solar cell	2007-041930	22-Feb-2007	5106880	26-Dec-2012
Japan	Metamorphic layer in multi-junction solar cell	2010-280287	16-Dec-2010		
Europe	Inverted metamorphic solar cell with bypass diode	7024239.1	13-Dec-07		
India	Inverted Metamorphic Solar Cell With Bypass Diode	2083/DEL/07	05-Oct-2007		
Japan	Inverted Metamorphic Solar Cell With Bypass Diode	2007-341829	18-Dec-2007		
Europe	Inverted metamorphic solar cell with via for backside contacts	10010911.5	17-Oct-2010		
India	Inverted Metamorphic Solar Cell With Via For Backside Contacts	2076/DEL/07	22-Aug-2007		
Europe	Solar cell structure with localized doping of cap layer	7016452	22-Aug-2007		
India	Solar Cell Structure With Localized Doping Of Caplayer	1824/DEL/07	29-Aug-2007		
India	Inverted Metamorphic Solar Cell Mounted On Flexible Film	01827/DEL/07	29-Aug-2007		
Japan		2007-334822	26-Dec-2007		
Taiwan	Inverted metamorphic solar cell mounted on flexible film	97113117	10-Apr-2008		
Europe	IMM Space Array	14160776.2	19-Mar-2014		
Japan	IMM Space Array	2014-117643	06-Jun-2014		
China	IMM Space Array	201410342854.8	18-Jul-2014		
		Filing confirmation not yet received			
Germany	IMM Land Vehicle	2014-118039	06-Jun-2014		
Japan	IMM Land Vehicle	201410342379.4	18-Jul-2014		
China	IMM Land Vehicle				
Taiwan	Barrier layers in inverted metamorphic multijunction solar cells	97128500	25-Jul-2008		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
China	Inverted metamorphic multijunction solar cell of the doped layer index	200810149533	10-Sep-2008		
Europe	Exponentially doped layers in inverted metamorphic multijunction solar cells	8021551	11-Dec-2008		
Japan	Multijunction Solar Cell And Manufacturing Method Thereof	2008-244568	27-Sep-08		
China	Inversion deformation of the multi-junction solar cell battery in heterogeneous knuckles	200810171863.X	12-Nov-08	101499495	14-May-2014
Europe	Heterojunction subcells in inverted metamorphic multijunction solar cells	9000718.8	31-Jan-2009		
Taiwan	Heterojunction subcells in inverted metamorphic multijunction solar cells	97140523	22-Oct-2008	I441343	11-Jun-2014
Germany	Growth substrates for inverted metamorphic multijunction solar cells	102009057020.9	3-Dec-2010		
China	A method of manufacturing a solar cell	200910223616.4	13-Nov-2009		
Germany	Method for manufacturing inverted metamorphic multijunction solar cell, involves mounting and connecting surrogate substrate on sequence of layers, and removing another substrate that is made of gallium arsenide or germanium	102009049397.2	14-Oct-2009		
China	Metamorphic layers having two four junction inverted metamorphic multijunction solar cell	200910223615.X	23-Oct-2009		
Germany	Multi-junction-inverted metamorphous solar cell i.e. photovoltaic cell, for use in e.g. LED in aerospace application, has solar cell aligned regarding another solar-cell by considering lattice defect and exhibiting band gap	102009050454	23-Oct-09		
Europe	Four junction inverted metamorphic multijunction solar cell with two metamorphic layers	9013431.3	23-Oct-09		
Japan	4 junction inverted metamorphic multijunction solar cell with a modified layer two	2009-276955	13-Nov-2009		
Taiwan	IMM 4J	98138690	13-Nov-2009		
Europe	Inverted metamorphic multijunction solar cell with two metamorphic layers and homojunction top cell	11010224.1	27-Dec-2011		
China	Reverse with IV / III-V family of mixed alloy multi-junction solar cells	2010101688	28-Apr-2010		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Germany	Inverted multi-junction solar cells with group IV / III-V hybrid alloys	102010012080.4	19-Mar-2010		
Europe	Inverted multijunction solar cells with group IV/III-V hybrid alloys	10013379.2	06-Oct-2010		
Japan	Reverse multi-junction solar cells with IV / III-V alloy hybrid group	2010-105305	30-Apr-2010		
Taiwan	INVERTED GESISN	99107003	10-Mar-2010		
Japan	Reverse multi-junction solar cells with IV / III-V alloy hybrid group	2014-42487	05-Mar-2014		
China	Raster designed for compound semiconductor III-V battery	201110276170.9	07-Sep-2011		
Germany	Grid design for a III-V compound semiconductor cell	202011101552.5	07-Jun-2011		
		Filing confirmation not yet received			
Europe	Radiation hardening				
China	Deinococcus inverted metamorphic multijunction solar cells	201310225092.9	07-Jun-2013		
Taiwan	Radiation hardening	102120202	06-Jun-2013		
Japan	Radiation hardening	2013-239515	15-Jul-2013		
Germany	QW ZTJ	102014000156.3	02-Jan-2014		
Japan	QW ZTJ	2014-000127	06-Jan-2014		
China	QW ZTJ	201410003620.0	03-Jan-2014		
Taiwan	QW ZTJ	102149279	31-Dec-2013		
China	INTERCELL L-CHIP	201210313124.6	29-Aug-2012		
Europe	Solar cell assembly, solar panel, and method for manufacturing the same	13020021.5	22-May-2013		
Germany	Solar cell arrangement, solar cell panels and methods for making same	102013008287.0	15-May-2013		
United States	Solar cell having a front-mounted bypass diode	09/953,838	17-Sep-2001	6,617,508	09-Sep-2003
United States	Modular, glass covered solar cell array	09/547,687	12-Apr-2000	6,407,327	18-Jun-2002
United States	Solar cell having a front-mounted bypass diode	09/137,029	20-Aug-1998	6,103,970	15-Aug-2000
United States	Metal interconnecting member for solar cells	29/416,031	16-Mar-2012	D665339	14-Aug-2012
United States	Metal interconnecting member for solar cells	29/416,030	16-Mar-2012	D665338	14-Aug-2012
United States	Wide Band Gap Window Layers In Inverted Metamorphic Multijunction Solar Cells	12/123,864	20-May-2008		
United States	Metamorphic Layers in Multijunction Solar Cells	13/956,122	01-Jul-2010		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Japan	Cropped Corner Design	2014-002717	12-Feb-2014		
Germany	Solar Cell Array with Bypass Diodes	10 2014 004 390.8	26-Mar-2014		
Japan		2014-120291	24-Sep-2008		
China	Solar Power system for Aircraft, Watercraft or Land Vehicles using IMM Solar cells	201420399831.8	18-Jul-2014		
Japan	Alternative Substrate Of Inversion Altered Multi-Junction Solar Battery	2009276954	13-Nov-2009		
Germany	Solar Cell With An Integrated Bypass Diode Grown Monolithically			69939754	27-Nov-2008
Germany	Integrated Bypass Diode In Solar Cells And Manufacturing Processes			60229279	20-Nov-2008
Austria	Reliable Connection Of Solar Cells The One Integrated Bypass Diode Exhibiting			551729	15-Apr-2012
Italy	Modules Of A Photovoltaic System Concentrating That It Uses Solar Cells Semiconductor III-V.	2010MI1392	28-Jul-2010		
Taiwan	Concentrated Photovoltaic System Receiver For III-V Semiconductor Solar Cells	099111655	14-Apr-2010		
South Korea	Concentrated Photovoltaic System Receiver For III-V Semiconductor Solar Cells	1020100057094	16-Jun-2010		
Taiwan	Multi-junction Solar Cells With Group IV/III-V Hybrid Alloys	099108399	22-Mar-2010		
Germany	Solar Cell With An Integrated Bypass Diode Monolithisch Grown			69941667	07-Jan-2010
Taiwan	Concentrated Photovoltaic System Modules Using III-V Semiconductor Solar Cells	098102103	20-Jan-2009		
South Korea	Concentrated Photovoltaic System Modules Using III-V Semiconductor Solar Cells	1020090003929	16-Jan-2009		
Japan	Inverted Metamorphic Solar Cell Mounted On Flexible Film	2007334822			
Europe	Inverted Metamorphic Solar Cell Mounted On Flexible Film	07016543			
Japan	A Plurality Of Layers Of Doped Exponentially In Multi-Junction Solar Cell Inverted Metamorphic			5456923	02-Apr-2014
Japan	Multi-Junction Solar Battery	2013117666	04-Jun-2013		

Jurisdiction	Title	App. No.	App. Date	Patent No.	Issue Date
Europe	Radiation Resistant Inverted Metamorphic Multijunction Solar Cell	13020032	06-Jun-2013		
India	Concentrated Photovoltaic System Modules Using III-V Semiconductor Solar Cells	1879DEL2010	11-Aug-2010		
Portugal	An Arrangement For Solar Cell Fotovoltaica			10799	14-Mar-2013
Italy	Structure Of Grill For Cells To Composed Semiconductor III-V	2011MI0283	31-Aug-2011		
France	Process For The Production Of Solar Cells Multijunction Metamorphic Inversees			29540002	18-Jan-2013
Italy	Module Of Solar Cells To Semiconductors III-V For Photovoltaic System To Concentration.	2011MI0258	26-Jul-2011		
Italy	Receiver To Destined Solar Cell On The Credit Side I Use In A Photovoltaic System To Employing Concentration Semiconductor Solar Cells III-V	2011MI0257	26-Jul-2011		
China	Inverted Multijunction Solar Cells With Group IV/III-V Hybrid Alloys	2010010169548	28-Apr-2010		
Japan	Multijunction Solar Cell With Group IV/III-V Hybrid Alloy	2010107410	07-May-2010		
Germany	Barrier Layers In Inverted Metamorphic Multijunction Solar Cells	102008034711	25-Jul-2008		