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Alexandria, VA 22313-1450		Δ	attorney Docket No.	131835, 132172, 136559			
Please record the attached document. Total number of pages including covered to the statement of pages including the statement of pages including the statement of the statement of pages including the statement of the stat	Please record the attached document. Total number of pages including cover sheet, attachments, and document:						
A. Name of conveying party(i PALO ALSO RESEAR INCORPORATED B. Additional name(s) of con-		2. A.					
3. A. Nature of conveyance:		В.	Additional name(s	e) & address(es) attached? ☐Yes ☑ No			
Assignment	Merger						
Security Agreement Other	☐ Change of Name						
B. Execution Date: May 6.	2011						
4. A. Patent Applications Nos. <u>1</u> and 12/273,113	1/926,405, 12/119,727	В.	Patent No.(s)	·			
	Additional numbers attack	hed?	Yes 🛭 No				
Name and address of party to wheel concerning document should be		6. To	tal number of applica	ations and patents involved: 3			
Name: <u>James A. Oliff</u>				posit Account No. 15-0461 the 3.41) in the amount of \$120.00.			
Address: OLIFF & BERI P.O. Box 3 Alexandria, VA Phone Number: 7	20850 22320-4850		edit any overpayment posit account number	or charge any underpayment to 15-0461.			
Fax Number: 70							
9. Statement and signature. To the best of my knowledge and original document. James A. Oliff, Registration No.		on is true d	nd correct and any o	attached copy is a true copy of the			
David W. Anderson, Registratio							

PATENT REEL: 027130 FRAME: 0049

Assignment

WHEREAS, Palo Alto Research Center Incorporated, a Delaware corporation having a principal place of business at 3333 Coyote Hill Road, Palo Alto, CA 94304 ("PARC") is the sole and exclusive owner of the United States patents listed in Attachment A (collectively the "Patents"); and

WHEREAS, SolarWorld Innovations GmbH, a German corporation having a principal place of business at Berthelsdorfer Str. 111A, 09599 Freiberg/Saxony, Germany ("SWIN") desires to acquire all right, title and interest in, to and under the said Patents;

NOW, THEREFORE, for good and valuable consideration the sufficiency of which is acknowledged by the parties:

PARC does hereby irrevocably and perpetually assign, convey, and transfer to SWIN, all right, title and interest throughout the world, in and to the Patents, all of which are to be held and enjoyed by SWIN for its own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives, to the end of the term or terms for which the Patents are or may be granted, reissued or extended as fully and entirely as the same would have been held and enjoyed by PARC, if this assignment and sale had not been made; together with all causes of action (whether known or unknown or whether currently pending, filed, or otherwise) and other enforcement rights under, or on account of, any of the Patents, including, without limitation, all causes of action and other enforcement rights for (i) damages, (ii) injunctive relief, and (iii) any other remedies of any kind for past, current and future infringement, and all rights to collect royalties or other payments under or on account of any of the Patents, all for SWIN's own use and behalf, and for the use and behalf of its successors, assigns or other legal representatives.

PARC hereby authorizes and requests the Commissioner of Patents and Trademarks, or an equivalent officer in any jurisdiction in which a Patent may have issued, to issue any and all Letters Patent on said inventions to SWIN as assignee of the entire interest, and hereby covenants that PARC has full right to convey the entire interest herein assigned, and that, except as otherwise explicitly agreed and acknowledged in writing between the parties, PARC has not executed, and will not execute, any agreements in conflict therewith.

PALO ALTO RESEARCH CENTER INCORPORATED

BY: DAVID J. ARTHUR

Title: ASSOCIATE GENERAL PATENT COUNSEL

Signature:

Date: 2011 MAY 6

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PATENT

ATTACHMENT A

TO

ASSIGNMENT

Patent Number	PARC Full Number	Title	Serial Number	Publication Number	Priority Filing Date
	20040932-DE-EPA	Extrusion/Dispensing Systems and Methods			
	20040932-EP-EPA	Extrusion/Dispensing Systems and Methods	6123904.2		11/13/2006
	20040932-FR-EPA	Extrusion/Dispensing Systems and Methods			
	20040932-GB-EPA	Extrusion/Dispensing Systems and Methods			
	20040932-JP-NP	Extrusion/Dispensing Systems and Methods	2006309712	2007160304	11/15/2005
.,	20040932-KR-NP	Extrusion/Dispensing Systems and Methods	1020060114146	1020070052683	11/17/2005
	20040932-TW-NP	Extrusion/Dispensing Systems and Methods	95142401		11/16/2005
M	20040932-US-CNT	Extrusion/Dispensing Systems and Methods	12/777116	20100221375	05/10/2010
	20040932-US-DIV	Solar Cell with High Aspect Ratio Gridlines Supported Between Co-Extruded Support Structures	12/818712	20100252104	06/18/2010
	20040932-US-DIV1	Cell Structure with High Aspect Ratio Gridlines	12/818760	20100252105	06/18/2010
7765949	20040932-US-NP	Extrusion/Dispensing Systems and Methods	11/282882	20070110836	11/17/2005

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	Simultaneously Writing Bus			
20060349-US-NP	Bars and Gridlines for Solar Cell	12/332279	20100139756	12/10/2008
20060464-CN-NP	Closely Spaced, High- Aspect Extruded Gridlines	200710167683.X	101190452	10/31/2007
20060464-DE-EPA	Closely Spaced, High- Aspect Extruded Gridlines			
20060464-EP-EPA	Closely Spaced, High- Aspect Extruded Gridlines	7119723	1918026	10/31/2007
20060464-FR-EPA	Closely Spaced, High- Aspect Extruded Gridlines			
20060464-JP-NP	Closely Spaced, High- Aspect Extruded Gridlines	2007302218	2008118150	10/25/2007
20060464-KR-NP	Closely Spaced, High- Aspect Extruded Gridlines	1020070110365	1020080039813	10/31/2007
20060464-TW-NP	Closely Spaced, High- Aspect Extruded Gridlines	96140958	200849628	10/31/2007
20060464-US-NP	Closely Spaced, High- Aspect Extruded Gridlines	11/555479	20080102558	11/01/2006
20060465-DE-EPA	Extruded Structure with Equilibrium Shape			
200 6 0465-EP-EPA	Extruded Structure with Equilibrium Shape	7119720.6	1920849	10/31/2007
20060465-FR-EPA	Extruded Structure with Equilibrium Shape	, , , , , , , , , , , , , , , , , , ,		
200 6 0465-US-CIP	Micro-Extrusion Printhead Nozzle with Tapered Cross- Section	12/266974	20090057944	11/07/2008
20060465-US-DIV	Extruded Structure with Equilibrium Shape	12/952124		11/22/2010
20060465-US-NP	Extruded Structure with Equilibrium Shape	11/555496	20080099953	11/01/2006
	20060464-CN-NP 20060464-DE-EPA 20060464-EP-EPA 20060464-JP-NP 20060464-TW-NP 20060464-US-NP 20060465-DE-EPA 20060465-FR-EPA 20060465-US-CIP	20060349-US-NP Bars and Gridlines for Solar Cell 20060464-CN-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-DE-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-EP-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-FR-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-JP-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-KR-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-TW-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-US-NP Closely Spaced, High-Aspect Extruded Gridlines 20060465-DE-EPA Extruded Structure with Equilibrium Shape 20060465-FR-EPA Extruded Structure with Equilibrium Shape 20060465-US-CIP Micro-Extrusion Printhead Nozzle with Tapered Cross-Section 20060465-US-CIP Extruded Structure with Equilibrium Shape Extruded Structure with Equilibrium Shape Extruded Structure with Equilibrium Shape Extruded Structure with Equilibrium Shape	20060349-US-NP Bars and Gridlines for Solar Cell 20060464-CN-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-DE-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-EP-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-FR-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-FR-EPA Closely Spaced, High-Aspect Extruded Gridlines 20060464-JP-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-KR-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-TW-NP Closely Spaced, High-Aspect Extruded Gridlines 20060464-US-NP Closely Spaced, High-Aspect Extruded Gridlines 20060465-DE-EPA Extruded Gridlines 20060465-DE-EPA Extruded Structure with Equilibrium Shape 20060465-FR-EPA Extruded Structure with Equilibrium Shape 20060465-US-CIP Micro-Extrusion Printhead Nozzle with Tapered Cross-Section 20060465-US-DIV Extruded Structure with Equilibrium Shape Extruded Structure with Equilibrium Shape 20060465-US-DIV Extruded Structure with Equilibrium Shape Extruded Structure with Equilibrium Shape 20060465-US-CIP Nozele with Tapered Cross-Section Extruded Structure with Equilibrium Shape 20060465-US-DIV Extruded Structure with Equilibrium Shape Extruded Structure with Equilibrium Shape 20060465-US-DIV Extruded Structure with Equilibrium Shape	20060349-US-NP Bars and Gridlines for Solar Cell 12/332279 20100139756

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	20060986-CN-NP	Solar Cell Fabrication Using Extruded Dopant-Bearing	200710198989.1	101202219	12/11/2007
		Materials			
	20060986-DE-EPA	Solar Cell Fabrication Using Extruded Dopant-Bearing Materials			·
	20060986-EP-EPA	Solar Cell Fabrication Using Extruded Dopant-Bearing Materials	7122910.8	1933392	12/11/2007
	20060986-FR-EPA	Solar Cell Fabrication Using Extruded Dopant-Bearing Materials	***************************************		
	20060986-JP-NP	Solar Cell Fabrication Using Extruded Dopant-Bearing Materials	2007314993		12/05/2007
	20060986-KR-NP	Solar Cell Fabrication Using Extruded Dopant-Bearing Materials	1020070127967	1020080054357	12/11/2007
ļ	20060986-US-NP	Solar Cell Fabrication Using Extruded Dopant-Bearing Materials	11/609825	20080138456	12/12/2006
7807544	20060988-US-DIV	Solar Cell Fabrication Using Extrusion Mask	12/559465	20100003812	9/14/2009
7638438	20060988-US-NP	Solar Cell Fabrication Using Extrusion Mask	11/609787	20080138999	12/12/2006
	20061457-CN-NP	Coextrusion Ink Chemistry for Improved Feature Definition	200910138928.5	101580658	5/12/2009
	20061457-DE-EPA	Coextrusion Ink Chemistry for Improved Feature Definition			
	20061457-EP-EPA	Coextrusion Ink Chemistry for Improved Feature Definition	9156742	2119749	3/30/2009
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	20061457-GB-EPA	Coextrusion Ink Chemistry for Improved Feature			
	20061457-IN-NP	Definition Coextrusion Ink Chemistry for Improved Feature Definition	1020/CHE2009		5/01/2009
	20061457-JP-NP	Coextrusion Ink Chemistry for Improved Feature Definition	2009112725	2009274205	5/07/2009
	20061457-TW-NP	Coextrusion Ink Chemistry for Improved Feature Definition	98115266	201000215	5/08/2009
A	20061457-US-NP	Coextrusion Ink Chemistry for Improved Feature Definition	12/119727	20090286069	5/13/2008
	20061460-US-NP	Wiring-Free, Plumbing- Free, Cooled, Vacuum Chuck	11/746012	20080277885	5/08/2007
	20070259-DE-EPA	Micro-Extrusion Printhead with Nozzle Valves			
	20070259-EP-EPA	Micro-Extrusion Printhead with Nozzle Valves	9177089.1	2196316	11/25/2009
	20070259-FR-EPA	Micro-Extrusion Printhead with Nozzle Valves			
	20070259-US-NP	Micro-Extrusion Printhead with Nozzle Valves	12/331355	20100143581	12/09/2008
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20070344-CN-NP	Co-Extruded Compositions for High Aspect Ratio Structures	200810174973.1	101423682	10/28/2008
	20070344-DE-EPA	Co-Extruded Compositions for High Aspect Ratio Structures			
	20070344-EP-EPA	Co-Extruded Compositions for High Aspect Ratio Structures	8162002.3	2056352	8/07/2008
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	20070344-JP-NP	Co-Extruded Compositions for High Aspect Ratio Structures	2008278098	2009111390	10/29/2008
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	20070344-US-NP	Co-Extruded Compositions for High Aspect Ratio Structures	11/926405	20090107546	10/29/2007
	20080173-CN-NP	Easily Flowing Inks for Extrusion	200910221808.1	101735686	11/11/2009
	20080173-DE-EPA	Easily Flowing Inks for Extrusion			
	20080173-EP-EPA	Easily Flowing Inks for Extrusion	9176087.6	2186864	11/16/2009
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	20080173-JP-NP	Easily Flowing Inks for Extrusion	2009262646	2010121132	11/18/2009
, , ,	20080173-KR-NP	Easily Flowing Inks for Extrusion	20090110321	1.0201E+12	11/16/2009
	20080173-US-NP	Easily Flowing Inks for Extrusion	12/273113	20100124602	11/18/2008
	20080175-CN-NP	Micro-Extrusion System with Airjet Assisted Bead Deflection	200910222103.1	CN 101733231 A	11/09/2009
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20080	175-EP-EPA	with Airjet Assisted Bead Deflection	9173595.1	2184767	10/21/2010
20080	175-FR-EPA	Micro-Extrusion System with Airjet Assisted Bead Deflection			
2008	0175-JP-NP	Micro-Extrusion System with Airjet Assisted Bead Deflection	2009249850	2010110756	10/30/2009
20080	0175-KR-NP	Micro-Extrusion System with Airjet Assisted Bead Deflection	2009106584		11/05/2009
20080	0175-US-CIP	Micro-Extrusion System with Airjet Assisted Bead Deflection	12/779875	20100221435	5/13/2010
20080	175-US-CIP1	Solar Cell with Structured Gridline Endpoints and Vertices	12/873709		9/01/2010
20080	175-US-DIV	Micro-Extrusion System with Airjet Assisted Bead Deflection	12/777190	20100221434	5/10/2010
20080	0175-US-NP	Micro-Extrusion System with Airjet Assisted Bead Deflection	12/267223	20100117254	11/07/2008
20080)179-CN-NP	Solar Cell with Co-Planar Backside Metallization	200910252988.X	101752439	12/08/2009
20080	179-DE-EPA	Solar Cell with Co-Planar Backside Metallization			
20080	179-EP-EPA	Solar Cell with Co-Planar Backside Metallization	9177061	2197035	11/25/2009
20080	179-ES-EPA	Solar Cell with Co-Planar Backside Metallization			
20080	179-FR-EPA	Solar Cell with Co-Planar Backside Metallization			
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	20080179-KR-NP	Solar Cell with Co-Planar Backside Metallization	1020090120931	10201066390	12/08/2009
	20080179-US-NP	Solar Cell with Co-Planar Backside Metallization	12/331284	20100139754	12/09/2008
	20080196-CN-NP	Directional Extruded Bead Control	200910222412.9	CN 101733209 A	11/06/2009
	20080196-DE-EPA	Directional Extruded Bead Control			
	20080196-EP-EPA	Directional Extruded Bead Control	9173586	2184766	10/21/2010
	20080196-FR-EPA	Directional Extruded Bead Control			
	20080196-JP-NP	Directional Extruded Bead Control	2009249851	2010110757	10/30/2009
	20080196-KR-NP	Directional Extruded Bead Control	2009106586		11/05/2009
	20080196-US-NP	Directional Extruded Bead Control	12/267069	20100116199	11/07/2008
	20091904-US-NP	Solar Cell with Structured Gridline Endpoints and Vertices	12/873473		8/01/2010
	20100587-US-NP	Oblique Angle Micromachining of Fluidic Structures			
	20040932Q-DE-EPA	Extrusion/Dispensing Systems and Methods			
2	20040932Q-EP-EPA	Extrusion/Dispensing Systems and Methods	6123903.4		11/13/2006
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	20060256-EP-EPA	Bifacial Cell with Extruded Gridline Metallization	7107206.0	1852917	4/30/2007
	20100505-US-NP	Interdigitated Finger Coextrusion			12/17/2010
:	20100505Q-US-NP	Interdigitated Finger Coextrusion			12/17/2010
7780812	20060464Q-US-NP	Extrusion Head with Planarized Edge Surface	11/555512	20080099952	11/01/2006
	20060464Q-KR-NP	Extrusion Head with Planarized Edge Surface	1020070110050	1020080039804	10/31/2007
	20060464Q-JP-NP	Extrusion Head with Planarized Edge Surface	2007302220	2008114225	10/25/2007
	20060464Q-FR-EPA	Extrusion Head with Planarized Edge Surface			
44	20060464Q-EP-EPA	Extrusion Head with Planarized Edge Surface	7119722.2	1918245	10/31/2007
	20060464Q-DE-EPA	Extrusion Head with Planarized Edge Surface			
	20060464Q-CN-NP	Extrusion Head with Planarized Edge Surface	200710167684.4	101219446	10/31/2007
7799371 20040932Q-US-NP	Extruding/Dispensing Multiple Materials to Form High-Aspect Ratio Extruded Structures	11/282829	20070108229	11/17/2009	
A.V.V.V.	20040932Q-TW-NP	Extrusion/Dispensing Systems and Methods	95142400	200732050	11/16/200
	20040932Q-KR-NP	Extrusion/Dispensing Systems and Methods	1020060114139	1020070052682	11/17/2009
	20040932Q-JP-NP	Extrusion/Dispensing Systems and Methods	2006309711	2007136454	11/15/200
	20040932Q-GB-EPA	Extrusion/Dispensing Systems and Methods			

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20060256-JP-NP	Bifacial Cell with Extruded Gridline Metallization	2007122466	2007300128	5/07/2007
20060256-FR-EPA	Bifacial Cell with Extruded Gridline Metallization			
20060256-DE-EPA	Bifacial Cell with Extruded Gridline Metallization			
20060256-US-CIP	Bifacial Cell with Extruded Gridline Metallization	11/416707		5/03/2006
20060256-US-DIV	Bifacial Cell with Extruded Gridline Metallization	12/476228		6/01/2009

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