

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT OF JOINT OWNERSHIP
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MOLECULAR IMPRINTS, INC.	07/10/2014
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MII NEWCO, INC.
<b>Street Address:</b>	1807-C WEST BRAKER LN
<b>City:</b>	AUSTIN
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	78758
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16264318
<b>CORRESPONDENCE DATA</b>	
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<b>ATTORNEY DOCKET NUMBER:</b>	40589-0097003
<b>NAME OF SUBMITTER:</b>	VERONICA JUAREZ
<b>SIGNATURE:</b>	/Veronica Juarez/
<b>DATE SIGNED:</b>	03/08/2019
<b>Total Attachments: 18</b>	
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**CONFIRMATORY ASSIGNMENT OF JOINT PATENT OWNERSHIP**

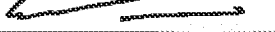
This Confirmatory Assignment of Joint Patent Ownership (this "Confirmatory Assignment"), effective April 17, 2014 (the "Effective Date"), is by and between MOLECULAR IMPRINTS, INC., a Delaware corporation having a principal place of business at 1807-C West Braker Lane, Austin, Texas 78758-3650 (hereinafter "Assignor"), and MII NEWCO, INC., a Delaware corporation having a principal place of business at 1807-C West Braker Lane, Austin, Texas 78758-3650 (hereinafter "Assignee").

WHEREAS, pursuant to that certain Technology and Intellectual Property Transfer Agreement between Assignor and Assignee dated April 17, 2014 (the "Agreement"), Assignor assigned to Assignee an undivided, one-half interest in and to Assignor's Intellectual Property Rights, including but not limited to Assignor's rights in the patents and patent applications listed in Exhibit A hereto, and to any foreign counterparts, any divisional, continuation, continuations-in-part, renewals, all patents issuing from any of the foregoing patent applications, all patents that claim priority to or have common priority with any such patents, all reissues, reexaminations and extensions, and all patents on inventions claimed in any of the foregoing and patents thereon, in each case regardless of whether in existence prior to, as of or after the Effective Date, and in each case to the extent that the same claim subject matter that was disclosed in an application described in the applicable patent (collectively the "Patents").

NOW, THEREFORE, in consideration of good and valuable consideration as is further detailed in the Agreement, the receipt and sufficiency of which is hereby acknowledged, Assignor hereby confirms having assigned to Assignee an undivided, one-half interest in and to the Patents.

IN WITNESS WHEREOF, the parties have caused this Confirmatory Assignment to be executed by their duly authorized representatives.

MOLECULAR IMPRINTS, INC.

By: 

Name: C.M. Melliar-Smith

Title: President & CEO

Date: 7/10/14

MI NEWCO, INC.

By: 

Name: David S. Gino

Title: CEO

Date: 7/11/14

# Exhibit A

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
11/560,266		15-Nov-2006		Methods and Compositions for Providing Preferential Adhesion and Release of Adjacent Surfaces	Xu, Frank Y.
11/694,612		30-Mar-2007		Tessellated Patterns in Imprint Lithography	Sreenivasan, Sidigata V.; Schumaker, Philip D.; McMackin, Ian Matthew
12/047,572		13-Mar-2008		Methods of Exposure for the Purpose of Thermal Management for Imprint Lithography Processes	Sreenivasan, Sidigata V.; Choi, Byung-Jin
12/275,998		21-Nov-2008		POROUS TEMPLATE AND IMPRINTING STACK FOR NANO-IMPRINT LITHOGRAPHY	Xu, Frank Y.; Liu, Weijun; Fletcher, Edward B.; Sreenivasan, Sidigata V.; Choi Byung-Jin; Khusnatdinov, Niyaz; Cherala, Anshuman; Selinidis, Kosta S.
12/327,618		3-Dec-2008		High Throughput Imprint Based on Contact Line Motion Tracking Control	Lu, Xiaoming; Schumaker, Phillip D.
12/364,979		3-Feb-2009		Controlling Template Surface Composition in Nano-Imprint Lithography	Xu, Frank Y.; Liu, Weijun
12/603,819		22-Oct-2009		FLUID TRANSPORT AND DISPENSING	Truskett, Van Nguyen; Shackleton, Steven C. Khusnatdinov, Niyaz; Xu, Frank Y.; Meissl, Mario Johannes; Miller, Michael N.; Thompson, Ecron D.; Schmidt, Gerard M.; Nimmakayala, Pawan Kumar; Lu, Xiaoming; Choi, Byung-Jin
12/604,517		23-Oct-2009		Strain and Kinetics Control During Separation Phase of Imprint Process	Schmid, Gerard M.; Resnick, Douglas J.; Sreenivasan, Sidigata V.; Xu, Frank Y.
12/604,866		23-Oct-2009		Imprint Lithography Template	Miller, Michael N.; Brooks, Cynthia B.; Brown, Laura Anne; Schmid, Gerard M.
12/607,564		28-Oct-2009		Master Template Replication	GanapathiSubramanian, Mahadevan; Choi, Byung-Jin
12/817,787		17-Jun-2010		Dual Zone Template Chuck	

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
12/828,498		1-Jul-2010		Chucking System with Recessed Support Feature	GanapathiSubramanian, Mahadevan, Meissl, Mario Johannes, Panga, Avinash, Choi, Byung-jin
12/835,009		13-Jul-2010		Residual Layer Thickness Measurement and Correction	Jones, Christopher Ellis; Khusnatdinov, Niyaz; Johnson, Stephen C.; Schumaker, Phillip D.; Lad, Pankaj B.
12/954,376		24-Nov-2010		Adhesion Layers in Nanoimprint Lithography	Ye, Zhengmao; Xu, Frank Y.; LaBrake, Dwayne L.; Sellindis, Kosta S.
13/017,259		31-Jan-2011		Nanoimprint Lithography Processes	Xu, Frank Y.; Sreenivasan, Sidigata V.
61/889,241		10-Oct-2013		Aluminum Dry Etch Process for Making Wire Grid Polarizers	Yang, Shuqiang
12/987,196		10-Jan-2011		Systems and Methods for Substrate Formation	Choi, Byung-jin
13/014,508		26-Jan-2011		Methods and Systems of Material Removal and Pattern Transfer	Schmid, Gerard M.; Miller, Michael N.; Choi, Byung-jin; Resnick, Douglas J.; Sreenivasan, Sidigata V.; Xu, Frank Y.; Donaldson, Darren D.
13/015,379		27-Jan-2011		Roll-to-Roll Imprint Lithography and Purging System	Choi, Byung-jin
13/106,407		12-May-2011		Reducing Adhesion between a Conformable Region and a Mold	Xu, Frank Y.; Miller, Michael N.
13/095,514		27-Apr-2011		Safe separation for nano imprinting	jin, Se-Hyuk; GanapathiSubramanian, Mahadevan; Fletcher, Edward B.; Khusnatdinov, Niyaz; Schmid, Gerard M.; Meissl, Mario Johannes; Cherala, Anshuman; Xu, Frank Y.; Choi, Byung-jin; Sreenivasan, Sidigata V.
11/143,092		2-Jun-2005		Fluid Dispensing and Drop-On-Demand Dispensing for Nano-Scale Manufacturing	Lad, Pankaj B.; McMackin, Ian Matthew; Truskett, Van Nguyen; Sreenivasan, Truskett, Van Nguyen; Sreenivasan, Duane; Schumaker, Phillip D.; Fletcher, Edward B.
13/105,695		11-May-2011		Backside Contact Solar Cell	Miller, Michael N.; Sreenivasan, Sidigata V.; Xu, Frank Y.; Schmid, Gerard M.

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App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
13/172,350		29-Jun-2011		Low-K Dielectric Functional Imprinting Materials	Xu, Frank Y.; Chun, Jun Sung; Watts, Michael P.C.
13/178,268		7-Jul-2011		Contaminate Detection and Substrate Cleaning Methods of Cleaning Hard Disk Drive Substrates for Nanoimprint Lithography	Khusunatdinov, Miyaz, LaBrake, Dwayne L.
13/227,205		7-Sep-2011		Vapor Delivery System For Use in Imprint Lithography	Ye, Zhengmao; Ramos, Rick; Edward B.; Jones, Christopher Ellis; LaBrake, Dwayne L.
13/228,298		8-Sep-2011		Release Agent Partition Control in Imprint Lithography	Xu, Frank Y.; Liu, Weijun
13/226,635		7-Sep-2011		High Contrast Alignment Marks Through Multiple Stage Imprinting	Imhof, Joseph Michael; Selimidis, Kosta S.; LaBrake, Dwayne L.
13/245,288		26-Sep-2011		Nano Imprinting with Reusable Polymer Template with Metallic or Oxide Coating	Ahn, Se Hyun; Choi, Byung-Jin; Xu, Frank Y.
14/216,017		17-Mar-2014		Optically Absorptive Material for Alignment Marks	Khusunatdinov, Miyaz, Selimidis, Kosta S.; Imhof, Joseph Michael; LaBrake, Dwayne L.
13/455,966		25-Apr-2012		Photocatalytic Reactions in Nano-Imprint Lithography Processes	Fletcher, Edward B.; Xu, Frank Y.
13/446,364		13-Apr-2012		Reduced Residual Formation in Etched Multi-Layer Stacks	Xu, Frank Y.; Liu, Weijun; Brooks, Cynthia B.; LaBrake, Dwayne L.; Lentz, David James
13/546,622		11-Jul-2012		Methods for Uniform Imprint Pattern Transfer of Sub-20 nm Features	Ye, Zhengmao; LaBrake, Dwayne L.
61/921,647		30-Dec-2013		FABRICATION OF SEAMLESS LARGE AREA MASTER TEMPLATES FOR IMPRINT LITHOGRAPHY USING STEP AND REPEAT TOOLS	Resnick, Douglas J.; Miller, Michael N.; Xu, Frank Y.
13/720,315		19-Dec-2012		Extrusion Reduction in Imprint Lithography	Khusunatdinov, Miyaz, Jones, Christopher Ellis; Perez, Joseph G.; LaBrake, Dwayne L.; McMackin, Ian Matthew
13/743,772		17-Jan-2013			

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
13/773,217		21-Feb-2013		Large Area Imprint Lithography	Choi, Byung-Jin; Ahn, Se Hyun; GanapathiSubramanian, Mahadevan; Miller, Michael N.; Sreenivasan, Sidigata V.
13/754,015		30-Jan-2013		Fabrication of High-Throughput Nano-Imprint Lithography Templates	Fletcher, Edward B.; Xu, Frank Y.; Liu, Weijun; Wan, Fen; Menezes, Marlon; Selinidis, Kosta
13/910,547		5-Jun-2013		Nano-Imprint Lithography Templates	Khushnatinov, Niyaz; Liu, Weijun; Xu, Frank Y.; Fletcher, Edward B.; Wan, Fen
14/150,261		8-Jan-2014		Strain and Kinetics Control During Separation Phase of Imprint Process	Khushnatinov, Niyaz; Xu, Frank Y.; Meissl, Mario Johannes; Miller, Michael N.; Thompson, Ecron D.; Schmid, Gerard M.; Nimmakayala, Pawan Kumar; Lu, Xiaoming; Choi, Byung-Jin
	8,545,709		1-Oct-2013	Critical Dimension Control During Template Formation	Brooks, Cynthia B.; Labrake, Dwayne L.; Khushnatinov, Niyaz; Miller, Michael N.; Sreenivasan, Sidigata V.; Lentz, David James; Xu, Frank Y.
	8,309,008		13-Nov-2012	Separation in an Imprint Lithography Process	Choi, Byung-Jin; GanapathiSubramanian, Mahadevan
	8,231,821		31-Jul-2012	Substrate Alignment	Choi, Byung-Jin; Nimmakayala, Pawan Kumar; GanapathiSubramanian, Mahadevan
	8,432,548		30-Apr-2013	Alignment for Edge Field Nano-Imprinting	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	8,387,482		5-Mar-2013	Method and System to Control Movement of a Body for Nano-Scale Manufacturing	Doyle, Gary F.; Schmid, Gerard M.; Miller, Michael N.; Resnick, Douglas J.; Labrake, Dwayne L.
	8,512,585		20-Aug-2013	Template Pillar Formation	Fletcher, Edward B.; Ye, Zhengmao; Labrake, Dwayne L.; Xu, Frank Y.
	8,361,546		29-Jan-2013	Facilitating Adhesion Between Substrate and Patterned Layer	GanapathiSubramanian, Mahadevan; Choi, Byung-Jin; Wang, Liang; Ruiz, Alex
	8,237,133		7-Aug-2012	Energy Sources for Curing in an Imprint Lithography System	

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App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
	8,361,371		29-Jan-2013	Extrusion Reduction in Imprint Lithography	Khusnudinov, Niyaz; Jones, Christopher Ellis; Perez, Joseph G.; Labrake, Dwayne L.; McMackin, Ian Matthew
	8,415,010		9-Apr-2013	Nano-Imprint Lithography Stack with Enhanced Adhesion Between Silicon-Containing and Non-Silicon Containing Layers	Liu, Weijun; Xu, Frank Y.
	8,142,702		27-Mar-2012	Solvent-Assisted Layer Formation for Imprint Lithography	Liu, Weijun; Xu, Frank Y.; Fletcher, Edward B.
	8,470,188		25-Jun-2013	Nano-Imprint Lithography Templates	Menezes, Marlon
	8,541,053		24-Sep-2013	Enhanced Densification of Silicon Oxide Layers	Menezes, Marlon; Xu, Frank Y.; Wan, Fen
	8,616,873		31-Dec-2013	Micro-Conformal Templates for Nanoimprint Lithography	Miller, Michael N.; Xu, Frank Y.; Stacey, Nicholas
	8,628,712		14-Jan-2014	Misalignment Management	Mokaberl, Babak
	8,556,616		15-Oct-2013	Template Having a Varying Thickness to Facilitate Expelling a Gas Positioned Between a Substrate and the Template	Resnick, Douglas J.; Meissl, Mario Johannes; Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,985,530		26-Jul-2011	Etch-enhanced technique for lift-off patterning	Schmid, Gerard M.; Resnick, Douglas J.
	8,119,052		21-Feb-2012	Drop Pattern Generation for Imprint Lithography	Schumaker, Phillip D.
	8,512,797		20-Aug-2013	Drop Pattern Generation with Edge Weighting	Schumaker, Phillip D.
	8,589,126		19-Nov-2013	Robust Optimization to Generate Drop Patterns in Imprint Lithography Which Are Tolerant of Variations in Drop Volume and Drop Placement	Schumaker, Phillip D.
	8,345,242		1-Jan-2013	Optical System for Use in Stage Control	Schumaker, Phillip D.; Mokaberl, Babak
	8,021,594		20-Sep-2011	Preserving Filled Features When Vacuum Wiping	Shackleton, Steven C.; Lad, Pankaj B.; McMackin, Ian Matthew; Xu, Frank Y.; Sreenivasan, Sidigata V.
	8,012,394		6-Sep-2011	Template Pattern Density Doubling	Sreenivasan, Sidigata V.
	7,935,292		3-May-2011	Imprinting of Partial Fields at the Edge of the Wafer	Sreenivasan, Sidigata V.; Choi, Byung-Jin



App. No.	Pat. No.	Filing Date	Issue Date	Title	Inventors
	8,123,514		28-Feb-2012	Conforming Template for Patterning Liquids Disposed on Substrates	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Voisin, Ronald D.
	8,142,850		27-Mar-2012	Patterning a Plurality of Fields on a Substrate to Compensate for Differing Evaporation Times	Sreenivasan, Sidigata V.; Schumaker, Phillip D.
	8,066,930		29-Nov-2011	Forming a Layer on a Substrate Method to Arrange Features on a Substrate to Replicate Features Having Minimal Dimensional Variability	Sreenivasan, Sidigata V.; Watts, Michael P.C.
	8,349,241		8-Jan-2013	Fluid Dispense Device Calibration	Sreenivasan, Sidigata V.; Watts, Michael P.C.; Truskett, Van Nguyen; Johnson, Stephen C.; Khusnatdinov, Miyaz; Simpson, Logan
	8,480,933		9-Jul-2013	Imprint Lithography System and Method	Wang, Liang; Choi, Yeong-jun; Choi, Byung-jin
	8,142,704		27-Mar-2012	Method for Controlling Distribution of Fluid Components on a Body	Xu, Frank Y.; McMackin, Ian Matthew; Lad, Pankaj B.; Watts, Michael P.C.
	7,981,481		19-Jul-2011	Composition to Reduce Adhesion Between a Conformable Region and a Mold	Xu, Frank Y.; Miller, Michael N.
	8,152,511		10-Apr-2012	Reduction of Stress During Template Separation	Xu, Frank Y.; Sreenivasan, Sidigata V.
	8,075,299		13-Dec-2011	Chucking System for Nano-Manufacturing	Babbs, Daniel A.; Choi, Byung-Jin; Cherala, Anshuman
	7,798,801		21-Sep-2010	Chucking System for Nano-Manufacturing	Babbs, Daniel A.; Choi, Byung-Jin; Cherala, Anshuman
	8,033,815		11-Oct-2011	Chucking System Comprising an Array of Fluid Chambers	Cherala, Anshuman; Choi, Byung-Jin; Lad, Pankaj B.; Shackleton, Steven C
	7,635,263		22-Dec-2009	Chucking System Comprising an Array of Fluid Chambers	Cherala, Anshuman; Choi, Byung-Jin; Lad, Pankaj B.; Shackleton, Steven C
	8,033,813		11-Oct-2011	Apparatus to Vary Dimensions of a Substrate During Nano-Scale Manufacturing	Cherala, Anshuman; Choi, Byung-Jin; Nimmakayala, Pawan Kumar; Meissl, Mario Johannes; Sreenivasan, Sidigata V.
	7,170,589		30-Jan-2007		

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
	7,420,654		2-Sep-2008	Method of Varying Dimensions of a Substrate During Nano-Scale Manufacturing	Cherala, Anshuman; Choi, Byung-Jin; Nimmakayala, Pawan Kumar; Meissl, Mario Johannes; Sreenivasan, Sidigata V.
	7,298,456		20-Nov-2007	System for Varying Dimensions of a Substrate During Nano-Scale Manufacturing	Cherala, Anshuman; Choi, Byung-Jin; Nimmakayala, Pawan Kumar; Meissl, Mario Johannes; Sreenivasan, Sidigata V.
	7,462,028		9-Dec-2008	Partial Vacuum Environment Imprinting METHOD FOR OBTAINING FORCE COMBINATIONS FOR TEMPLATE DEFORMATION USING NULLSPACE AND METHODS OPTIMIZATION TECHNIQUES	Cherala, Anshuman; Lad, Parkaj B.; McMackin, Ian M.; Choi, Byung-Jin
	7,768,624		3-Aug-2010	Applying Imprinting Material to Substrates Employing Electromagnetic Fields	Cherala, Anshuman; Sreenivasan, Sidigata V.; Choi, Byung-Jin; Thompson, Ecron D.
	7,261,830		28-Aug-2007	Method of Retaining a Substrate to a Wafer	Cherala, Anshuman; Sreenivasan, Sidigata V.; Schumaker, Norman E.
	7,636,999		29-Dec-2009	Chuck	Choi, Byung-Jin; Cherala, Anshuman; Babbs, Daniel A.
	7,635,445		22-Dec-2009	Methods of Separating a Mold from a Solidified Layer Disposed on a Substrate	Choi, Byung-Jin; Cherala, Anshuman; Choi, Yeong-Jun; Meissl, Mario Johannes; Sreenivasan, Sidigata V.; Norman E.; Lu, Xiaoming; McMackin, Ian Matthew; Babbs, Daniel A.
	7,641,840		5-Jan-2010	METHOD FOR EXPELLING GAS POSITIONED BETWEEN A SUBSTRATE AND A MOLD	Choi, Byung-Jin; GanapathiSubramanian, Mahadevan; Choi, Yeong-Jun; Meissl, Mario J.
	6,932,934		23-Aug-2005	Formation of Discontinuous Films During an Imprint Lithography Process	Choi, Byung-Jin; Meissl, Mario Johannes; Sreenivasan, Sidigata V.; Watts, Michael P.C.
	7,708,926		4-May-2010	Capillary Imprinting Technique	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,910,042		22-Mar-2011	Capillary Imprinting Technique	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	8,057,725		15-Nov-2011	Capillary Imprinting Technique	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,387,508		17-Jun-2008	Compliant Device for Nano-Scale Manufacturing	Choi, Byung-Jin; Sreenivasan, Sidigata V.

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
	8,109,753		7-Feb-2012	Double-Sided Nano-Imprint Lithography System	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,670,529		2-Mar-2010	Method and System for Double-Sided Patterning of Substrates	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	8,109,754		7-Feb-2012	Method and System for Double-Sided Patterning of Substrates	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	6,871,558		29-Mar-2005	Method for Determining Characteristics of Substrates	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,670,530		2-Mar-2010	Employing Fluid Geometries	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	6,990,870		31-Jan-2006	Patterning Substrates Employing Multiple Chucks	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,036,389		2-May-2006	System for Determining Characteristics of Substrates Employing Fluid Geometries	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	7,691,313		6-Apr-2010	System for Determining Characteristics of Substrates Employing Fluid Geometries	Choi, Byung-Jin; Sreenivasan, Sidigata V.
	8,282,383		9-Oct-2012	Method for Expelling Gas Positioned Between a Substrate and a Mold	Choi, Byung-Jin; Sreenivasan, Sidigata V.; McMackin, Ian Matthew; Lad, Pankaj B.
	7,150,622		19-Dec-2006	Method for Expelling Gas Positioned Between a Substrate and a Mold	Choi, Byung-Jin; Sreenivasan, Sidigata V.; Meissl, Mario Johannes
	7,338,275		4-Mar-2008	Systems for Magnification and Distortion Correction for Imprint Lithography Processes	Choi, Byung-Jin; Sreenivasan, Sidigata V.; Meissl, Mario Johannes; Watts, Michael P.C.
	7,442,336		28-Oct-2008	Formation of Discontinuous Films During an Imprint Lithography Process	Choi, Byung-Jin; Sreenivasan, Sidigata V.; Watts, Michael P.C.
	6,982,783		3-Jan-2006	Capillary Imprinting Technique	Choi, Byung-Jin; Voisin, Ronald D.; Sreenivasan, Sidigata V.; Watts, Michael P.C.; Babbs, Daniel A.; Meissl, Mario Johannes; Bailey, Hillman L.; Schumaker, Norman E.
				Chucking System for Modulating Shapes of Substrates	

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
	7,019,819		28-Mar-2006	Chucking System for Modulating Shapes of Substrates	Choi, Byung-jin; Voisin, Ronald D.; Sreenivasan, Sidigata V.; Watts, Michael P.C.; Babbs, Daniel A.; Meissl, Mario Johannes; Bailey, Hillman L.; Schumaker, Norman E.
	7,224,443		29-May-2007	Imprint Lithography Substrate Processing Tool for Modulating Shapes of Substrates	Choi, Byung-jin; Voisin, Ronald D.; Sreenivasan, Sidigata V.; Watts, Michael P.C.; Babbs, Daniel A.; Meissl, Mario Johannes; Bailey, Hillman L.; Schumaker, Norman E.
	6,980,282		27-Dec-2005	Method for Modulating Shapes of Substrates	Choi, Byung-jin; Xu, Frank Y.; Stacey, Michael P.C.
	7,157,036		2-Jan-2007	Method to Reduce Adhesion Between a Conformable Region and a Pattern of a Mold	Nicholas A.; Truskett, Van Nguyen; Watts, Michael P.C.
	7,670,534		2-Mar-2010	Method to Control an Atmosphere Between a Body and a Substrate	Choi, Yeong-jun; Choi, Byung-jin
	7,931,846		26-Apr-2011	Method to Control an Atmosphere Between a Body and a Substrate	Choi, Yeong-jun; Choi, Byung-jin
	7,316,554		8-Jan-2008	System to Control an Atmosphere Between a Body and a Substrate	Choi, Yeong-jun; Choi, Byung-jin
	8,215,946		10-Jul-2012	Imprint Lithography System and Method	GanapathSubramanian, Mahadevan; Choi, Byung-jin; Meissl, Mario J.
	7,803,308		28-Sep-2010	Technique for Separating a Mold from Solidified Imprinting Material	GanapathSubramanian, Mahadevan; Choi, Byung-jin; Miller, Michael N.; Stacey, Nicholas A.
	7,906,058		15-Mar-2011	Bifurcated Contact Printing Technique	GanapathSubramanian, Mahadevan; Choi, Byung-jin; Miller, Michael N.; Stacey, Nicholas A.; Watts, Michael P.C.
	7,256,131		14-Aug-2007	Method of Controlling the Critical Dimension of Structures Formed on a Substrate	LaBrake, Dwayne L.

App. No.	Pat No.	Filing Date	Issue Date	Title	Inventors
	7,309,225		18-Dec-2007	Moat system for an imprint lithography template	McMackin, Ian Matthew; Lad, Pankaj B.
	7,473,090		6-Jan-2009	Imprint Lithography Template to Facilitate Control of Liquid Movement	McMackin, Ian Matthew; Lad, Pankaj B.; Truskett, Van Nguyen
	7,811,505		12-Oct-2010	Method For Fast Filling Of Templates For Imprint Lithography Using On Template Dispense	McMackin, Ian Matthew; Lad, Pankaj B.; Truskett, Van Nguyen
	7,019,835		28-Mar-2006	Method and System to Measure Characteristics of a Film Disposed on a Substrate	McMackin, Ian Matthew; Stacey, Nicholas A.; Babbs, Daniel A.; Voth, Duane; Watts, Michael P. C.; Truskett, Van Nguyen; Xu, Frank Y.; Voisin, Ronald D.; Lad, Pankaj B.
	7,270,533		18-Sep-2007	System for Creating a Turbulent Flow of Fluid Between a Mold and a Substrate	McMackin, Ian Matthew; Stacey, Nicholas A.; Babbs, Daniel A.; Voth, Duane; Watts, Michael P. C.; Truskett, Van Nguyen; Xu, Frank Y.; Voisin, Ronald D.; Lad, Pankaj B.; Ezekoye, Ofofike A.
	7,090,716		15-Aug-2006	Single Phase Fluid Imprint Lithography Method	Meissl, Mario Johannes; Choi, Byung-Jin; Babbs, Daniel A.; Bailey, Hillman
	6,805,054		19-Oct-2004	Method, System and Holder for Transferring Templates During Imprint Lithography Processes	Meissl, Mario Johannes; Choi, Byung-Jin; Babbs, Daniel A.; Bailey, Hillman
	7,041,604		9-May-2006	Method of Patterning Surfaces While Providing Greater Control of Recess Anisotropy	Miller, Michael N.; Stacey, Nicholas A.
	7,837,907		23-Nov-2010	Alignment System and Method for a Substrate in a Nano-Imprint Process	Nimmakayala, Pawan Kumar; Choi, Byung-Jin
	8,147,731		3-Apr-2012	Alignment System and Method for a Substrate in a Nano-Imprint Process	Nimmakayala, Pawan Kumar; Choi, Byung-Jin; Nimmakayala, Pawan Kumar; Choi, Byung-Jin; Raftery, Tom H.; Schumaker, Phillip D.
	7,785,096		31-Aug-2010	Enhanced Multi Channel Alignment	Nimmakayala, Pawan Kumar; Choi, Byung-Jin; Nimmakayala, Pawan Kumar; Choi, Byung-Jin; Raftery, Tom H.; Schumaker, Phillip D.

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	7,292,326		6-Nov-2007	Interferometric Analysis for the Manufacture of Nano-Scale Devices	Nimmakayala, Pawan Kumar; Rafferty, Tom H.; Aghili, Alireza; Choi, Byung-Jin; Schumaker, Phillip; Babbs, Daniel A.
	7,630,067		8-Dec-2009	Interferometric Analysis for the Manufacture of Nano-Scale Devices	Nimmakayala, Pawan Kumar; Rafferty, Tom H.; Aghili, Alireza; Choi, Byung-Jin; Schumaker, Phillip; Babbs, Daniel A.; Truskett, Van N.
	7,880,872		1-Feb-2011	Interferometric Analysis for the Manufacture of Nano-Scale Devices	Nimmakayala, Pawan Kumar; Rafferty, Tom H.; Aghili, Alireza; Choi, Byung-Jin; Schumaker, Phillip; Babbs, Daniel A.; Truskett, Van N.
	7,323,130		29-Jan-2008	Magnification Correction Employing Out-Of-Plane Distortion of a Substrate	Nimmakayala, Pawan Kumar; Sreenivasan, Sidigata V.; Choi, Byung-Jin; Cherala, Anshuman
	7,874,831		25-Jan-2011	Template Having a Silicon Nitride, Silicon Carbide or Silicon Oxynitride Film	Resnick, Douglas J.; Meissl, Mario Johannes; Sellinidis, Kosta S.; Xu, Frank Y.
	6,929,762		16-Aug-2005	Method of Reducing Pattern Distortions During Imprint Lithography Processes	Rubin, Daniel I.
	7,906,274		15-Mar-2011	Method of Creating a Template Employing a Lift-Off Process	Schmid, Gerard M.; Resnick, Douglas J.; Miller, Michael N.
	7,547,398		16-Jun-2009	Self-Aligned Process for Fabricating Imprint Templates Containing Various Etched Features	Schmid, Gerard M.; Stacey, Nicholas A.; Resnick, Douglas J.; Voisin, Ronald D.; Myron, Lawrence J.
	7,854,867		21-Dec-2010	Method for Detecting a Particle in a Nanoimprint Lithography System	Schumaker, Phillip D.
	7,665,981		23-Feb-2010	System to Transfer a Template Transfer Body between a Motion Stage and a Docking Plate	Schumaker, Phillip D.; Fancello, Angelo; Kim, Jae H.; Choi, Byung-Jin; Babbs, Daniel A.
	8,012,395		6-Sep-2011	Template Having Alignment Marks Formed of Contrast Material	Sellinidis, Kosta S.; Choi, Byung-Jin; Schmid, Gerard M.; Thompson, Ecron D.; McMackin, Ian Matthew

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	7,281,919		16-Oct-2007	System for Controlling a Volume of Material on a Mold	Shackleton, Steven C; McMackin, Ian Matthew, Iad, Pankaj B.; Truskett, Van Nguyen
	7,357,876		15-Apr-2008	Eliminating Printability of Sub-Resolution Defects in Imprint Lithography	Sreenivasan, Sidigata V.
	7,927,541		19-Apr-2011	Full-Wafer or Large Area Imprinting with Multiple Separated Sub-Fields for High Throughput Lithography	Sreenivasan, Sidigata V.
	7,186,656		6-Mar-2007	Method of Forming a Recessed Structure Employing a Reverse Tone Process	Sreenivasan, Sidigata V.
	7,323,417		29-Jan-2008	Method of Forming a Recessed Structure Employing a Reverse Tone Process	Sreenivasan, Sidigata V.
	7,396,475		8-Jul-2008	Method of Forming Stepped Structures Employing Imprint Lithography	Sreenivasan, Sidigata V.
	7,105,452		12-Sep-2006	Method Of Planarizing a Semiconductor Substrate with an Etching Chemistry	Sreenivasan, Sidigata V.
	7,547,504		16-Jun-2009	Pattern Reversal Employing Thick Residual Layers	Sreenivasan, Sidigata V.
	7,179,396		20-Feb-2007	Positive Tone Bi-Layer Imprint Lithography Method	Sreenivasan, Sidigata V.
	7,261,831		28-Aug-2007	Positive Tone Bi-Layer Imprint Lithography Method	Sreenivasan, Sidigata V.
	7,670,953		2-Mar-2010	Positive Tone Bi-Layer Imprint Lithography Method	Sreenivasan, Sidigata V.
	7,858,528		28-Dec-2010	Positive Tone Bi-Layer Imprint Lithography Method	Sreenivasan, Sidigata V.
	7,947,608		24-May-2011	Positive Tone Bi-Layer Imprint Lithography Method	Sreenivasan, Sidigata V.
	7,802,978		28-Sep-2010	Imprinting of Partial Fields at the Edge of the Wafer	Sreenivasan, Sidigata V.; Choi, Byung-Jin

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	7,077,992		18-Jul-2006	Step and Repeat Imprint Lithography Process	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Schumaker, Norman E.; Voisin, Ronald D.; Watts, Michael P.C.; Meissl, Mario Johannes
	8,318,066		27-Nov-2012	Step and Repeat Imprint Lithography Process	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Schumaker, Norman E.; Voisin, Ronald D.; Watts, Michael P.C.; Meissl, Mario Johannes
	7,727,453		1-Jun-2010	Step and Repeat Imprint Lithography Process	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Schumaker, Norman E.; Voisin, Ronald D.; Watts, Michael P.C.; Meissl, Mario Johannes
	7,943,081		17-May-2011	Step and Repeat Imprint Lithography Process	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Schumaker, Norman E.; Voisin, Ronald D.; Watts, Michael P.C.; Meissl, Mario Johannes
	7,179,079		20-Feb-2007	Conforming Template for Patterning Liquids Disposed on Substrates	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Voisin, Ronald D.
	7,699,598		20-Apr-2010	Conforming Template for Patterning Liquids Disposed on Substrates	Sreenivasan, Sidigata V.; Choi, Byung-Jin; Voisin, Ronald D.
	7,491,637		17-Feb-2009	Formation of Conductive Templates Employing Indium Tin Oxide	Sreenivasan, Sidigata V.; McMackin, Ian Matthew; Choi, Byung-Jin; Voisin, Ronald D.
	7,780,893		24-Aug-2010	Method of concurrently patterning a substrate having a plurality of fields and a plurality of alignment marks	Sreenivasan, Sidigata V.; McMackin, Ian Matthew; Melliar-Smith, Christopher M.; Choi, Byung-Jin
	7,795,132		14-Sep-2010	Self-Aligned Cross-Point Memory Fabrication Imprint Lithography Template Having Opaque Alignment Marks	Sreenivasan, Sidigata V.; Melliar-Smith, Christopher M.; LaBrake, Dwayne L.
	7,136,150		14-Nov-2006	Real Time Imprint Process Diagnostics for Defects	Sreenivasan, Sidigata V.; Singhal, Shravan; Choi, Byung-Jin
	7,815,824		19-Oct-2010		



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	7,241,395		10-Jul-2007	Reverse Tone Patterning on Surfaces Having Surface Planarity Perturbations	Sreenivasan, Sidigata V.; Stacey, Nicholas A.
	6,900,881		31-May-2005	Step and Repeat Imprint Lithography Systems	Sreenivasan, Sidigata V.; Watts, Michael P.C.; Choi, Byung-Jin; Meissl, Mario Johannes; Schumaker, Norman E.; Voisin, Ronald D.
	6,916,584		12-Jul-2005	Alignment Methods for Imprint Lithography	Sreenivasan, Sidigata V.; Watts, Michael P.C.; Choi, Byung-Jin; Voisin, Ronald D.
	7,070,405		4-Jul-2006	Alignment Methods for Imprint Lithography	Sreenivasan, Sidigata V.; Watts, Michael P.C.; Choi, Byung-Jin; Voisin, Ronald D.; Schumaker, Norman E.
	7,244,386		17-Jul-2007	Method of Compensating for a Volumetric Shrinkage of a Material Disposed upon a Substrate to Form a Substantially Planar Structure Therefrom	Sreenivasan, Sidigata V.; Xu, Frank Y.
	7,205,244		17-Apr-2007	Patterning Substrates Employing Multi-Film Layers Defining Etch Differential Interfaces	Stacey, Nicholas A.; Sreenivasan, Sidigata V.; Miller, Michael N.
	7,452,574		18-Nov-2008	Method to Reduce Adhesion Between a Polymerizable Layer and a Substrate Employing a Fluorine-Containing Layer	Truskett, Van Nguyen; Mackay, Christopher J.; Choi, Byung-Jin
	7,252,777		7-Aug-2007	Method of Forming an In-situ Recessed Structure	Vidusek, David; Sreenivasan, Sidigata V.; Wang, David C.
	7,785,526		31-Aug-2010	Imprint Alignment Method, System and Template	Voisin, Ronald D.
	8,366,434		5-Feb-2013	Imprint Alignment Method, System and Template	Voisin, Ronald D.
	7,132,225		7-Nov-2006	Methods of Inspecting a Lithography Template	Voisin, Ronald D.
	7,037,639		2-May-2006	Methods of Inspecting a Lithography Template	Voisin, Ronald D.
	7,259,102		21-Aug-2007	Etching Technique to Planarize a Multi-Layer Structure	Wang, David C.; Xu, Frank Y.
	7,252,715		7-Aug-2007	System for Dispensing Liquids	Watts, Michael P.C.; Choi, Byung-Jin; Sreenivasan, Sidigata V.

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	7,027,156		11-Apr-2006	Scatterometry Alignment for Imprint Lithography	Watts, Michael P.C.; McMackin, Ian Matthew
	7,281,921		16-Oct-2007	Scatterometry Alignment for Imprint Lithography	Watts, Michael P.C.; McMackin, Ian Matthew
	7,071,088		4-Jul-2006	Method for fabricating bulbous-shaped vias	Watts, Michael P.C.; Sreenivasan, Sidigata V.
	7,279,113		9-Oct-2007	A Method of forming a compliant template for UV imprinting	Watts, Michael P.C.; Voisin, Ronald D.; Sreenivasan, Sidigata V.
	7,140,861		28-Nov-2006	Compliant Hard Template for UV Imprinting	Watts, Michael P.C.; Voisin, Ronald D.; Sreenivasan, Sidigata V.
	7,759,407		20-Jul-2010	Composition for Adhering Materials Together	Xu, Frank Y.
	8,557,351		15-Oct-2013	Method for Adhering Materials Together	Xu, Frank Y.
				Polymerization Technique to Attenuate Oxygen Inhibition of Solidification of Liquids and Composition Therefor	Xu, Frank Y.; Fletcher, Edward B.; Lad, Pankaj B.; Watts, Michael P.C.
	7,845,931		7-Dec-2010	Composition Therefor	Xu, Frank Y.; Fletcher, Edward B.; Lad, Pankaj B.; Watts, Michael P.C.
					Xu, Frank Y.; Khusnatdinov, Niyaz; McMackin, Ian Matthew; Stacey, Nicholas A.; Babbs, Daniel A.; Voth, Duane; Watts, Michael P.C.; Truskett, Van Nguyen; Voisin, Ronald D.; Lad, Pankaj B.; Ezekoye, Ofofike A.
	8,211,214		3-Jul-2012	Single Phase Fluid Imprint Lithography Method	Xu, Frank Y.; Lad, Pankaj B.; McMackin, Ian Matthew; Truskett, Van Nguyen; Fletcher, Edward B.
					Xu, Frank Y.; Lad, Pankaj B.; McMackin, Ian Matthew; Truskett, Van Nguyen; Fletcher, Edward B.
	8,268,220		18-Sep-2012	Imprint Lithography Method	Edward B.
				Method of Providing Desirable Wetting and Release Characteristics Between a Mold and a Polymerizable Composition	Xu, Frank Y.; Lad, Pankaj B.; McMackin, Ian Matthew; Truskett, Van Nguyen; Fletcher, Edward B.
	7,837,921		23-Nov-2010	Polymerizable Composition	Edward B.
					Xu, Frank Y.; Mackay, Christopher J.; Lad, Pankaj B.; McMackin, Ian Matthew; Truskett, Van Nguyen; Martin, Wesley; Fletcher, Edward B.; Wang, David C.; Stacey, Nicholas A.; Watts, Michael P.C.
	7,939,131		10-May-2011	Method To Provide A Layer With Uniform Etch Characteristics	A.; Watts, Michael P.C.

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	8,142,703		27-Mar-2012	An Imprint Lithography Method	Xu, Frank Y.; McMackin, Ian Matthew; Lad, Pankaj B.
	7,307,118		11-Dec-2007	Composition to Reduce Adhesion between a Conformable Region and a Mold	Xu, Frank Y.; Miller, Michael N.
	7,122,079		17-Oct-2006	Composition for an Etching Mask Comprising a Silicon-Containing Material	Xu, Frank Y.; Miller, Michael N.; Watts, Michael P.C.
	7,906,180		15-Mar-2011	Composition for an Etching Mask Comprising a Silicon-Containing Material	Xu, Frank Y.; Miller, Michael N.; Watts, Michael P.C.
	7,282,550		16-Oct-2007	Method To Provide A Layer With Uniform Etch Characteristics	Xu, Frank Y.; Stacey, Nicholas A.
	7,122,482		17-Oct-2006	Methods for Fabricating Patterned Features Utilizing Imprint Lithography	Xu, Frank Y.; Stacey, Nicholas A.; Watts, Michael P.C.; Thompson, Eron D.
				Method for Imprint Lithography Utilizing an Adhesion Primer Layer	Xu, Frank Y.; Sreenivasan, Sidigata V.; Fletcher, Edward B.
11/734,542		12-Apr-2007		Ultra-thin Polymeric Adhesion Layer	Fletcher, Edward B.
12/326,709		2-Dec-2008		Imprinting of Partial Fields at the Edge of the Wafer	Xu, Frank Y.; Fletcher, Edward B.
13/098,959		2-May-2011		Large Area Roll-to-Roll Imprint Lithography	Sreenivasan, Sidigata V.; Choi, Byung-Jin
	8,187,515		29-May-2012	Large Area Patterning of Nano-Sized Shapes	Sreenivasan, Sidigata V.; Singhal, Shrawan; Choi, Byung-Jin; McMackin, Ian Matthew
	8,529,778		10-Sep-2013	Materials for Imprint Lithography	Sreenivasan, Sidigata V.; Yang, Shuqiang; Xu, Frank Y.; Labrake, Dwayne L.
	8,076,386		13-Dec-2011	Functional Nanoparticles	Xu, Frank Y.; Watts, Michael P.C.; Stacey, Nicholas A.
12/854,359		11-Aug-2010		Functional Nanoparticles	Sreenivasan, Sidigata V.; Yang, Shuqiang; Xu, Frank Y.; Singh, Vikramjit
13/105,422		11-May-2011		NANOSTRUCTURED SOLAR CELL	Yang, Shuqiang; Miller, Michael N.; Hillali, Mohamed; Wan, Fen; Schmid, Gerard M.; Wang, Liang; Sreenivasan, Sidigata V.; Xu, Frank Y.
13/289,601		4-Nov-2011		Nanoimprint Lithography Formation of Functional Nanoparticles Using Dual Release Layers	Singh, Vikramjit; Xu, Frank Y.; Sreenivasan, Sidigata V.

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13/290,770		7-Nov-2011		PATTERNING OF NON-CONVEX SHAPED NANOSTRUCTURES	Sreenivasan, Sidigata V.; Singh, Vikramjit; Xu, Frank Y.; Choi, Byung-Jin
13/398,442		16-Feb-2012		High Aspect Ratio Patterning of Silicon	Miller, Michael N.; Wan, Fen; Singh, Vikramjit; Donaldson, Darren D.; Schmid, Gerard M.; Sreenivasan, Sidigata V.; Xu, Frank Y.
14/021,463		9-Sep-2013		Large Area Patterning of Nano-Sized Shapes	Sreenivasan, Sidigata V.; Yang, Shuangang; Xu, Frank Y.

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