

**PATENT ASSIGNMENT**

Electronic Version v1.1  
 Stylesheet Version v1.1

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
Optical Research Associates	06/25/2004
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ASML NETHERLANDS B.V.
<b>Street Address:</b>	De Run 6501
<b>City:</b>	Veldhoven
<b>State/Country:</b>	NETHERLANDS
<b>Postal Code:</b>	NL-5504 DR
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	12372462
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(703)770-7901
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>	
<b>Email:</b>	kindra.johnson@pillsburylaw.com
<b>Correspondent Name:</b>	PILLSBURY WINTHROP SHAW PITTMAN LLP
<b>Address Line 1:</b>	1650 Tysons Boulevard
<b>Address Line 2:</b>	P.O. Box 10500
<b>Address Line 4:</b>	McLean, VIRGINIA 22102
<b>ATTORNEY DOCKET NUMBER:</b>	081468-0376966
<b>NAME OF SUBMITTER:</b>	Kindra L. Johnson

CH \$40.00 12372462

**Total Attachments: 7**  
 source=2009-02-17 - Executed Assignment#page2.tif  
 source=2009-02-17 - Executed Assignment#page3.tif  
 source=2009-02-17 - Executed Assignment#page4.tif  
 source=2009-02-17 - Executed Assignment#page5.tif  
 source=2009-02-17 - Executed Assignment#page6.tif

source=2009-02-17 - Executed Assignment#page7.tif  
source=2009-02-17 - Executed Assignment#page8.tif

Assignment

WHEREAS, Optical Research Associates, a corporation duly organized under the laws of the State of California, United States of America, and having an office and place of business at 3280 East Foothill Boulevard, Suite 300, Pasadena, California, U.S.A. 91107-3103 ("Assignor"), owns the entire rights, title and interest in, to and under the Intellectual Property as specified in Schedule 1 to this Assignment, which is herein incorporated; and

WHEREAS, ASML Netherlands B.V. ("Assignee"), a corporation duly organized under the laws of the Netherlands, and having an office and place of business at De Run 6501, Veldhoven NL-5504 DR, Netherlands, is desirous of acquiring the entire right, title and interest in, to and under the Intellectual Property in the United States of America, its territories and its possessions and in all states and regions foreign thereto:

NOW, THEREFORE, TO WHOM IT MAY CONCERN, be it known that, for and in consideration of the sum of US\$10 and other good and valuable consideration paid to Assignor by Assignee, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby:

1. sell, assign and transfer unto the Assignee, its successors, assigns and legal representatives, the entire and exclusive right, title and interest for the United States of America, its territories and its possessions and all states and regions foreign thereto (including the right to apply for patents in foreign states and regions in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), in, to and under the Intellectual Property, together with all past, present or future causes of action, rights and remedies arising under any of the Intellectual Property and all claims for damages by reason of past, present or future infringement or other unauthorized use of the Intellectual Property with the right to sue for and collect such damages;
2. authorize Assignee to file any patent application based on or claiming benefit and/or priority to the Intellectual Property in the name of Assignee or otherwise as Assignee deems advisable, under international conventions and treaties; and
3. authorize and request the Commissioner of Patents of the United States of America, and any empowered officials of other governments, to issue or transfer all patents and patent applications based on the Intellectual Property or resulting therefrom to Assignee, or its successors and assigns, as assignee of the entire right, title and interest.

*R.A.H.*

*R.A.H.*

In testimony whereof, the Assignor has caused this assignment to be signed by its duly authorized officer this 25<sup>th</sup> day of June, 2004.

Assignor:  
Optical Research Associates

Robert S. Hilbert  
By: Robert S. Hilbert  
Title: President and Chief Executive Officer

On this 25<sup>th</sup> day of June, 2004, before me personally appeared Robert S. Hilbert to me known, who being by me duly sworn did depose and say that he is the President and Chief Executive Officer of Optical Research Associates, the corporation described in and which executed the foregoing instrument, and that with due authority he executed the instrument for the purposes stated therein on behalf of such corporation.



Vivian Malana Richardson  
Notary Public

(SEAL)  
My Commission Expires:

June 14, 2006

R.S.H.

Schedule 1 to Assignment - Intellectual Property

U.S. non-provisional patent application US 10/178,621, titled "Structures and Methods for Reducing Aberration in Integrated Circuit Fabrication Systems" (published as U.S. patent application publication US 2003/0086071) filed June 20, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30, 2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002;

U.S. non-provisional patent application US 10/178,601, titled "Structures and Methods for Reducing Aberration in Optical Systems" (published as U.S. patent application publication US 2003/0086156) filed June 20, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30, 2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002;

U.S. non-provisional patent application US 10/178,935 titled "Reducing Aberration in Optical Systems Comprising Cubic Crystalline Optical Elements" (published as U.S. patent application publication US 2003/0086157) filed June 20, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30, 2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002;

U.S. non-provisional patent application US 10/178,937, titled "Methods for Reducing Aberration in Optical Systems" (published as U.S. patent application publication US 2003/0086171) filed June 20, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30, 2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002;

U.S. non-provisional patent application US 10/371,266, titled "Correction of Birefringence in Cubic Crystalline Optical Systems" (published as U.S. patent application publication US 2003/0234981) filed February 20, 2003, claiming benefit and/or priority to U.S. provisional patent applications US 60/295,212 filed June 1, 2001, US 60/296,694 filed June 6, 2001, US 60/299,497 filed June 20, 2001, US 60/299,603 filed June 20, 2001, US 60/335,093 filed October 30, 2001, and US 60/332,183 filed November 12, 2001 and U.S. non-provisional patent application US 10/071,375 filed February 7, 2002;

U.S. non-provisional patent application US 10/371,269, titled "Semiconductor Device and Method for Forming the Same Using Cubic Crystalline Optical System with Reduced Birefringence" (published as U.S. patent application publication US 2004/0001244) filed February 20, 2003, claiming benefit and/or priority to U.S.

*R.A.H.*

provisional patent applications US 60/295,212 filed June 1, 2001, US 60/296,694 filed June 6, 2001, US 60/299,497 filed June 20, 2001, US 60/299,603 filed June 20, 2001, US 60/335,093 filed October 30, 2001, and US 60/332,183 filed November 12, 2001 and U.S. non-provisional patent application US 10/071,375 filed February 7, 2002;

U.S. non-provisional patent application US 10/331,159, titled "Structures and Methods for Reducing Polarization Aberration in Optical Systems" (published as U.S. patent application publication US 2004/0036961) filed December 26, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/405,853 filed August 22, 2002 and US 60/432,688 filed December 11, 2002;

U.S. non-provisional patent application US 10/331,101, titled "Methods for Reducing Polarization Aberration in Optical Systems" (published as U.S. patent application publication US 2004/0036971) filed December 26, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/405,853 filed August 22, 2002 and US 60/432,688 filed December 11, 2002;

U.S. non-provisional patent application US 10/331,103, titled "Structures and Methods for Reducing Polarization Aberration in Integrated Circuit Fabrication" (published as U.S. patent application publication US 2004/0036985) filed December 26, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/405,853 filed August 22, 2002 and US 60/432,688 filed December 11, 2002;

U.S. non-provisional patent application US 10/759,699, titled "Correction of Birefringence in Cubic Crystalline Optical Systems" filed January 19, 2004, claiming benefit and/or priority to U.S. provisional patent applications US 60/295,212 filed June 1, 2001, US 60/296,694 filed June 6, 2001, US 60/299,497 filed June 20, 2001, US 60/299,603 filed June 20, 2001, US 60/335,093 filed October 30, 2001, and US 60/332,183 filed November 12, 2001 and U.S. non-provisional patent application US 10/071,375 filed February 7, 2002;

PCT patent application PCT/US02/17071, titled "Correction of Birefringence in Cubic Crystalline Optical Systems" (EXPIRED) (published as PCT patent application publication WO 02/099500) filed May 31, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/295,212 filed June 1, 2001, US 60/296,694 filed June 6, 2001, US 60/299,497 filed June 20, 2001, US 60/299,603 filed June 20, 2001, US 60/335,093 filed October 30, 2001, and US 60/332,183 filed November 12, 2001 and U.S. non-provisional patent application US 10/071,375 filed February 7, 2002;

PCT patent application PCT/US02/34828, titled "Structures and Methods for Reducing Aberration in Optical Systems" (EXPIRED) (published as PCT patent application publication WO 03/038479) filed October 30, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30,

*RS 24*

2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002 and U.S. non-provisional patent applications US 10/178,621 filed June 20, 2002, US 10/178,601 filed June 20, 2002, US 10/178,935 filed June 20, 2002, and US 10/178,937 filed June 20, 2002;

PCT patent application PCT/US03/26164, titled "Structures and Methods for Reducing Polarization Aberration in Optical Systems" (published as PCT patent application publication WO 04/019077) filed August 21, 2003, claiming benefit and/or priority to U.S. provisional patent applications US 60/405,853 filed August 22, 2002 and US 60/432,688 filed December 11, 2002 and U.S. non-provisional patent applications US 10/331,103 filed December 26, 2002, US 10/331,101 filed December 26, 2002, and US 10/331,159 filed December 26, 2002;

U.S. patent US 6,683,710, titled "Correction of Birefringence in Cubic Crystalline Optical Systems" issued January 27, 2004, claiming priority to U.S. provisional applications US 60/295,212 filed June 1, 2001, US 60/296,694 filed June 6, 2001, US 60/299,497 filed June 20, 2001, US 60/299,603 filed June 20, 2001, US 60/335,093 filed October 30, 2001, and US 60/332,183 filed November 12, 2001;

European Patent Office patent application 02752014.7, titled "Correction of Birefringence in Cubic Crystalline Optical Systems", filed May 31, 2002, designating Belgium, Denmark, Germany, Finland, France, Hellenic Republic, United Kingdom, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, Netherlands, Austria, Portugal, Sweden, Switzerland, Spain, Turkey, Cyprus, claiming priority to U.S. provisional patent application 60/295,212 filed June 1, 2001, U.S. provisional patent application 60/296,694 filed June 6, 2001, U.S. provisional patent application 60/299,497 filed June 20, 2001, U.S. provisional patent application 60/299,603 filed June 20, 2001, U.S. provisional patent application 60/335,093 filed October 30, 2001, U.S. provisional application 60/332,183 filed November 21, 2001, and U.S. non-provisional patent application 10/071,375, filed February 7, 2002;

Japanese patent application 2003-502557, titled "Correction of Birefringence in Cubic Crystalline Optical Systems", filed May 31, 2002, claiming priority to U.S. provisional patent application 60/295,212 filed June 1, 2001, U.S. provisional patent application 60/296,694 filed June 6, 2001, U.S. provisional patent application 60/299,497 filed June 20, 2001, U.S. provisional patent application 60/299,603 filed June 20, 2001, U.S. provisional patent application 60/335,093 filed October 30, 2001, U.S. provisional application 60/332,183 filed November 21, 2001, and U.S. non-provisional patent application 10/071,375 filed February 7, 2002;

Korean patent application 1020037015766, titled "Correction of Birefringence in Cubic Crystalline Optical Systems", filed May 31, 2002, claiming priority to U.S. provisional patent application 60/295,212 filed June 1, 2001, U.S. provisional patent application 60/296,694 filed June 6, 2001, U.S. provisional patent application

*RAF*

60/299,497 filed June 20, 2001, U.S. provisional patent application 60/299,603 filed June 20, 2001, U.S. provisional patent application 60/335,093 filed October 30, 2001, U.S. provisional application 60/332,183 filed November 21, 2001, and U.S. non-provisional patent application 10/071,375 filed February 7, 2002;

European Patent Office patent application \_\_\_\_\_ (number unknown), titled "Structures and Methods for Reducing Aberration in Optical Systems," the regional stage application of PCT patent application PCT/US02/34828 (published as PCT patent application publication WO 03/038479) filed October 30, 2002, designating Belgium, Denmark, Germany, Finland, France, Hellenic Republic, United Kingdom, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, Netherlands, Austria, Portugal, Sweden, Switzerland, Spain, Turkey, and Cyprus, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30, 2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002 and U.S. non-provisional patent applications US 10/178,621 filed June 20, 2002, US 10/178,601 filed June 20, 2002, US 10/178,935 filed June 20, 2002, and US 10/178,937 filed June 20, 2002;

Japanese Patent Office patent application \_\_\_\_\_ (number unknown), titled "Structures and Methods for Reducing Aberration in Optical Systems," the national stage application of PCT patent application PCT/US02/34828 (published as PCT patent application publication WO 03/038479) filed October 30, 2002, claiming benefit and/or priority to U.S. provisional patent applications US 60/335,093 filed October 30, 2001, US 60/332,183 filed November 21, 2001, US 60/363,808 filed March 12, 2002, US 60/367,911 filed March 26, 2002, and US 60/385,427 filed May 31, 2002 and U.S. non-provisional patent applications US 10/178,621 filed June 20, 2002, US 10/178,601 filed June 20, 2002, US 10/178,935 filed June 20, 2002, and US 10/178,937 filed June 20, 2002;

U.S. provisional patent application US 60/367,911, titled "Structure and Method for Improving Optical Systems", filed March 26, 2002 (EXPIRED);

U.S. provisional patent application US 60/363,808, titled "Correction of Intrinsic Birefringence Using Rotators", filed March 12, 2002 (EXPIRED);

U.S. provisional patent application US 60/385,427, titled "Structures and Methods for Reducing Aberration in Optical Systems", filed May 31, 2002 (EXPIRED);

U.S. provisional patent application US 60/405,853, titled "New Method of [111] Compensation Using Stress", filed August 22, 2002 (EXPIRED);

U.S. provisional patent application US 60/432,688, titled "Reduced Aberration in Optical Systems", filed December 11, 2002 (EXPIRED);

*R.S.H.*



U.S. provisional patent application US 60/295,212, titled "Means to Determine, Correct and Adjust for Intrinsic Birefringence in Optical Materials for Use in Lithography Lenses", filed June 1, 2001 (EXPIRED);

U.S. provisional patent application US 60/296,694, titled "Means to Determine, Correct and Adjust for Intrinsic Birefringence in Optical Materials for Use in Lithography Lenses", filed June 6, 2001 (EXPIRED);

U.S. provisional patent application US 60/299,497, titled "Correction of Intrinsic Birefringence in Optical Systems Using Cubic Crystal Materials", filed June 20, 2001 (EXPIRED);

U.S. provisional patent application US 60/299,603, titled "Correction of Induced Birefringence in Cubic Crystals", filed June 20, 2001 (EXPIRED);

U.S. provisional patent application US 60/335,093, titled "Intrinsic Birefringence Compensation", filed October 30, 2001 (EXPIRED);

U.S. provisional patent application US 60/332,183, titled "Compensation for Intrinsic Birefringence Effects in Cubic Crystalline Optical Systems", filed November 21, 2001 (EXPIRED); and

any and all inventions and/or discoveries disclosed in any or all of the above-listed provisional, non-provisional and PCT patent applications and patent, any and all past, present and future foreign counterpart patent applications to any or all of above-listed provisional, non-provisional and PCT patent applications and patent (including without limitation any foreign national stage patent applications of any PCT patent applications listed herein), any and all past, present and future patents and patent applications claiming benefit and/or priority to any or all of above-listed provisional, non-provisional and PCT patent applications and patent, any and all past, present and future patent applications claiming any or all of the inventions and/or discoveries disclosed in any or all of above-listed provisional, non-provisional and PCT patent applications and patent, any and all past, present and future continuation, continuation-in-part, divisional, re-issue, renewal, and substitute patent applications, any and all patents, including without limitation by re-issue or upon re-examination, and any and all extensions to any of the foregoing and the right to apply for any of the foregoing, and any and all claims to benefit and/or priority from any and all of the foregoing.

*Ps.H.*