

09-17-1998

U.S. DEPARTMENT OF COMMERCE

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JET

Patent and Trademark Office
Docket No. 074270000395*

MPD 9.4.98

100830850

To the Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):
Physical Optics Corporation

Individual(s) Association
 General Partnership Limited Partnership
 Corporation-State Other

Additional name(s) of conveying party(ies) attached? Yes No

2. Name and address of receiving party(ies):

Name: Sanwa Bank California
Internal Address:
Street Address: 23865 Hawthorne Boulevard
City: Hawthorne, State: California ZIP: 90505

3. Nature of conveyance:

Assignment Merger
 Security Agreement Change of Name
 Other:

Execution Date: August 21, 1998

Additional name(s) & address(es) attached? Yes No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

<p>A. Patent Application No.(s) *</p> <p>Additional numbers attached? *<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>B. Patent No.(s)</p> <p>4838630 4898450 4926412 4958892 5018814 5026131 5067788 5083219 5153670 5221957 5230969 5260826 5276537 5278687 5293272 5305123 5365354 5384221 5451475 5497430 5534386 5609939 5631754 5764317 5743633 5735988</p>
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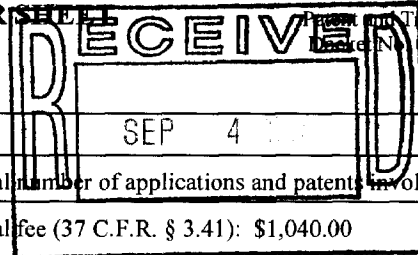
Mail documents to be recorded with required cover sheet information to:
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Crystal Gateway 4, Room 335
Washington, D.C. 20231

la-235130

RECORDATION FORM COVER SHEET
PATENTS ONLY

Patent and Trademark Office
Form No. 74270000395*

MRD 9.4.98



5. Name and address of party to whom correspondence concerning document should be mailed:

Pauline Stevens
Morrison & Foerster LLP
555 West Fifth Street
Suite 3500
Los Angeles, California 90013-1024

6. Total number of applications and patents involved: 26

7. Total fee (37 C.F.R. § 3.41): \$1,040.00

- Enclosed
- Authorized to be charged to deposit account, referencing Attorney Docket *

8. Deposit account number: 03-1952

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. § 1.21 that may be required by this paper, or to credit any overpayment to Deposit Account No. 03-1952.

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Name: Wen Liu
Registration No: 32,822

Wen Liu
Signature

September 1, 1998
Date

Total number of pages comprising cover sheet, attachments and document: 11

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SECURITY AGREEMENT
(Patents)

THIS SECURITY AGREEMENT (Patents) (the "Patent Security Agreement") is made and dated this 19th day of August, 1998 by and between Sanwa Bank California, a California corporation ("Lender"), and Physical Optics Corporation, a California corporation (the "Debtor"), in connection with a Credit Agreement dated as of August 21, 1998 (as the same may be amended, extended and replaced from time to time, the "Credit Agreement") between the Lender and the Debtor.

RECITALS

A. Pursuant to the Credit Agreement, the Lender has agreed to extend credit to the the Debtor.

B. As collateral security for the Obligations (as such term and all other capitalized terms used herein and not otherwise defined are defined in the Security Agreement defined below), the Debtor has executed and delivered to the Lender a Security Agreement dated as of August 21, 1998 (the "Security Agreement"), pursuant to which the Debtor has granted to the Lender a first priority perfected security interest in certain assets of the Debtor, including, without limitation, all general intangibles, patents and other intellectual property owned by the Debtor or used in the Debtor's business.

C. The parties hereto desire to supplement the Security Agreement as it relates to certain of such intellectual property consisting generally of patents and to create hereby a document appropriate for recordation in the Patent and Trademark Office of the United States (the "PTO").

NOW, THEREFORE, in consideration of the above Recitals and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto hereby agree as follows:

AGREEMENT

1. Confirmation of Grant of Security Interest. The Debtor hereby confirms the grant of the security interest, pledge, assignment and mortgage set forth in the Security Agreement and acknowledges that the Collateral described therein includes, without limitation, all of the Debtor's right, title and interest in the following (the "Patent Collateral"):

(a) All now existing or hereafter created or acquired, patents, letters patents, inventions, patent applications and rights and works protectable by patent, and, except to the

extent prohibited by the terms thereof, all agreements in respect of patents owned by third parties, including, without limitation, the patents specifically described on Schedule I attached hereto, as the same may be amended or replaced from time to time with the consent of the Lender;

(b) All now existing and hereafter arising registrations and applications for registration relating to any of the foregoing, all renewals and extensions thereof throughout the world in perpetuity, and all rights to make such applications and to renew and extend the same;

(c) All now existing and hereafter arising rights and licenses to make, have made, use and/or sell the inventions disclosed and claimed by any of the foregoing;

(d) All now existing and hereafter arising right (but not the obligation) to register claims under any state, federal or foreign patent law or regulation;

(e) All now existing and hereafter arising rights, claims and interests under licensing or other contracts pertaining to any of the foregoing;

(f) All now existing and hereafter arising documents, instruments and agreements which reveal the name and address of sources of supply, distribution methods and all terms of purchase, rental, license or use and delivery for all materials, products and components used in connection with any of the foregoing;

(g) All now existing and hereafter arising specifications as to and quality control manuals used in connection with the operations utilizing any of the foregoing;

(h) All now existing and hereafter arising goodwill associated with any of the foregoing;

(i) All now existing and hereafter arising right (but not the obligation) to sue or bring opposition or cancellation proceedings in the name of the Lender for past, present and future infringements of any of the foregoing; and

(j) All products and Proceeds of any of the foregoing.

2. Additional Representation and Warranty and Covenant. In addition to all representations and warranties, covenants and agreements set forth in the Security Agreement, the Debtor hereby:

(a) Represents and warrants that, except as otherwise permitted by the Credit Agreement, Schedule I attached hereto sets forth an accurate and complete list of all patents owned by the Debtor which are registered with the PTO; and

(b) Agrees, except as otherwise permitted by the Credit Agreement, to promptly notify the Lender in writing of any additional patents of which the Debtor becomes the owner and to amend Schedule I accordingly.

3. No Present Assignment. Neither the Security Agreement, this Patent Security Agreement nor any other document, instrument or agreement creates or is intended to create a present assignment of the Patent Collateral. Subject to the rights of the Lender under the Security Agreement and this Patent Security Agreement, it is the intention of the parties hereto that the Debtor continue to own the Patent Collateral and that upon the indefeasible payment and performance in full of the Obligations, the rights of the Lender under the Security Agreement and this Patent Security Agreement in and to the Patent Collateral shall be released and terminated.

4. Relationship to Security Agreement. The Patent Collateral shall constitute Collateral for all purposes of the Security Agreement and the other Loan Documents and the Lender shall have all rights, powers and remedies with respect to the Patent Collateral to the same extent as they have with respect to other Collateral. Reference is hereby made to the Security Agreement, the terms and conditions of which are incorporated herein by this reference.

IN WITNESS WHEREOF, the parties hereto have caused this Patent Security Agreement to be executed on and as of the day and year first above written.

PHYSICAL OPTICS CORPORATION, as Debtor

By: *Jocanne Jansson*
Name: JANNA JANNSSON
Title: President, CEO

SANWA BANK CALIFORNIA,
as Lender

By: *Pearl Yu*
Name: PEARL YU
Title: Vice President

ATTACH NOTARIZATION FOR EACH SIGNATURE

SCHEDULE I
TO SECURITY AGREEMENT

LIST OF PATENTS

Patent No.	Date of Patent	Description of Patent	Inventors	Assignee
1. 4,838,630	June 13, 1989	Holographic Planar Optical Interconnect	Tomasz P. Jansson; Joanna L. Jansson; Peter C. Yeung	Physical Optics Corporation
2. 4,898,450	February 6, 1990	Expanded Beam Non-Imaging Fiber Optic Connector	Tomasz Jansson; Joanna Jansson; Peter Yeung	Physical Optics Corporation
3. 4,926,412	May 15, 1990	High Channel Density Wavelength Division Multiplexer with Defined Diffracting Means Positioning	Tomasz P. Jansson; Joanna L. Jansson; Peter C. Yeung	Physical Optics Corporation
4. 4,958,892	September 25, 1990	Diffractive Coherence Filter	Tomasz P. Jansson; Joanna L. Jansson	Physical Optics Corporation
5. 5,018,814	May 28, 1991	Broadband Single-Mode Optical Coupler	Tomasz P. Jansson; Joanna L. Jansson	Physical Optics Corporation
6. 5,026,131	June 25, 1991	High Channel Density, Broadbandwidth Wavelength Division Multiplexer with Highly Non-Uniform Bragg-Littrow Holographic Grating	Tomasz P. Jansson; Joanna L. Jansson; Christopher C. Rich; Behzad Moslehi	Physical Optics Corporation

7. 5,067,788	November 26, 1991	High Modulation Rate Optical Plasmon Waveguide Modulator	Tomasz P. Jansson; Joanna L. Jansson; Behzad Moslehi	Physical Optics Corporation
8. 5,083,219	January 21, 1992	Method and Apparatus for Recording Lippman Holographic Mirrors	Tomasz P. Jansson; Joanna L. Jansson; Christopher C. Rich	Physical Optics Corporation
9. 5,153,670	October 6, 1992	Holographic Lippman-Bragg Filter in a Spectroscopic System	Tomasz P. Jansson; Joanna L. Jansson; Michael T. Feeney	Physical Optics Corporation
10. 5,221,957	June 22, 1993	Nonuniform Holographic Filter in a Spectroscopic System	Tomasz P. Jansson; Joanna Jansson; Michael T. Feeney	Physical Optics Corporation
11. 5,230,969	July 27, 1993	Composite Graft Optical Polymer	Gajendra Savant, Tomasz Jansson	Physical Optics Corporation
12. 5,260,826	November 9, 1993	Nonscanning Sectioning Microscope	Shudong Wu	Physical Optics Corporation
13. 5,276,537	January 4, 1994	Diamondlike Carbon Thin Film Protected Hologram and Method of Making Same	Gajendra D. Savant; Christopher C. Rich; David G. Pelka	Physical Optics Corporation
14. 5,278,687	January 11, 1994	Multiwavelength Data Communication Fiber Link	Tomasz P. Jansson; Kevin W. Shirk; Behzad M.R. Moslehi; Richard C. Kim	Physical Optics Corporation
15. 5,293,272	March 8, 1994	High Finesse Holographic Fabry-Perot Etalon and Method of Fabricating	Tomasz P. Jansson; Tin M. Aye; Jay W. Hirsh; Christopher C. Rich	Physical Optics Corporation
16. 5,305,123	April 19, 1994	Light Controlled Spatial	Lev S. Sadovnik;	Physical Optics Corporation

			and Angular Electromagnetic Wave Modulator	Tomasz P. Jansson; Vladimir Manasson	Corporation
17. 5,365,354	November 15, 1994		Grin Type Diffuser Based on Volume Holographic Material	Tomasz P. Jansson; David G. Pelka, Tin M. Aye	Physical Optics Corporation
18. 5,384,221	January 24, 1995		Birefringent Azo Dye Polymer Erasable Optical Storage Medium	Gajendra D. Savant; Tomasz P. Jansson	Physical Optics California
19. 5,461,475	October 24, 1995		Binary Optical Spectrum Analyzer	Jeremy Lerner; Taiwei Lu, Shing-Hong F. Lin; Andrew Kostrzewski; Hung Chou	Physical Optics California
20. 5,497,430	March 5, 1996		Method and Apparatus for Image Recognition Using Invariant Feature Signals	Lev S. Sadovnik; Taiwei Lu	Physical Optics California
21. 5,534,386	July 9, 1996		Homogenizer Formed Using Coherent Light and a Holographic Diffuser	Joel Peterson; Jeremy Lerner	Physical Optics California
22. 5,609,939	March 11, 1997		Viewing Screen Formed Using Coherent Light	Joel Peterson; Jeremy Lerner	Physical Optics California
23. 5,631,754	May 20, 1997		Holographic High Contrast Viewing Screen Embedded in a Liquid Crystal Display	Tomasz P. Jansson; Tin M. Aye; Jeremy Lerner	Physical Optics Corporation
24. 5,764,317	June 9, 1998		3-D Volume Visualization Display	Lev S. Sadovnik; Alexander Rizkin	Physical Optics Corporation

25. 5,743,633	April 28, 1998	Bar Code Illuminator	Chiu W. Chau; Jeremy M. Lerner	Physical Optics Corporation
26. 5,735,988	April 7, 1998	Method of Making Liquid Crystal Display System	Chiu W. Chau; Jeremy M. Lerner	Physical Optics Corporation

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

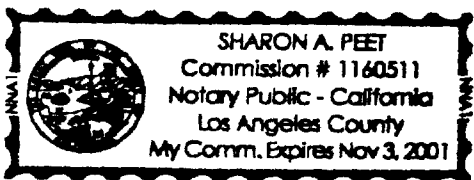
State of California

County of Los Angeles

On August 19, 1998 before me, SHARON A. PEET, NOTARY PUBLIC
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")

personally appeared Joanna Jansson
Name(s) of Signer(s)

personally known to me - OR - proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Sharon A. Peet
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

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Title or Type of Document: _____

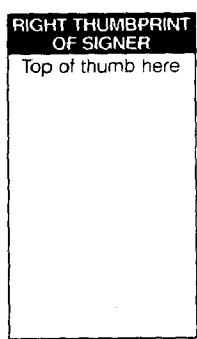
Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

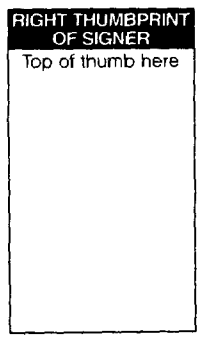
- Individual
- Corporate Officer
- Title(s): _____
- Partner — Limited General
- Attorney-in-Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

Signer's Name: _____

- Individual
- Corporate Officer
- Title(s): _____
- Partner — Limited General
- Attorney-in-Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Los Angeles

On Aug. 19, 1998 before me, SHARON A. PEET Notary Public
Date Name and Title of Officer (e.g., "Jane Doe, Notary Public")

personally appeared Yugen Yu Skudde
Name(s) of Signer(s)

personally known to me - OR - proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Sharon A. Peet
Signature of Notary Public

OPTIONAL

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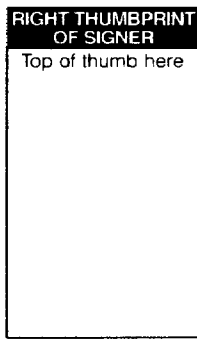
Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer
Title(s): _____
- Partner — Limited General
- Attorney-in-Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing:

Signer's Name: _____

- Individual
- Corporate Officer
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- Guardian or Conservator
- Other: _____



Signer Is Representing:

