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Expires 06/30/99 OMB 0651-0027		09-16-1999					nt and Tr ademark O ffice			
ONIB 0031-0027						PAT	ENT APPLICATION			
	ļ		HEET		D-98060					
_	TO: The Commissioner of Patents and Trademarks: Please record the attached original document(s) or copy(ies)									
		and Trademarks:	_		hed origin	al document(s) or copy(ies)			
Submission 7 (X) New	Гуре	MRP -12-99	Conv (X)	eyance Type Assignment	()	Security Ag	greement			
	nission (Non-Recordation) ent ID#	-13-99	()	License	()	Change of M	Name			
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Conveying Pa	arty(ies) (X) Mark	if additional name	s of conv	veying parties at	ttached					
First Party	Dr. Yoshihito Kunugi						Execution Date 7/13/99			
Second Party	Kent R. Mann						Execution Date			
•							7/13/99			
Receiving Par	rty ()Mark if addition	al name:	s of receiving pa	arties atta	ched				
Name	Regents of the University			91		()	If document to be recorded is an assignment and the			
Address	100 Church Street, SE Minneapolis MN 55455						receiving party is not domiciled in the United States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)			
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Public burden reporting for this collection of information is estimated to average approximately 30 minutes per Cover Sheet to be recorded, including time for reviewing the document and gathering the data needed to complete the Cover Sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Chief Information Officer, Washington, D.C. 20231 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (0651-0027), Washington, D.C. 20503. See OMB Information Collection Budget Package 0651-0027, Patent and Trademark Assignment Practice. DO NOT SEND REQUESTS TO RECORD ASSIGNMENT DOCUMENTS TO THIS ADDRESS.

Mail documents to be recorded with required cover sheet(s) information to: Commissioner of Patents and Trademarks, Box Assignments, Washington, D.C. 20231

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FORM PTO-1619B Expires 06/30/99 OMB 0651-0027		Page	e 2	Patent and	U.S. Department of Commerce Patent and Trademark Office ENT APPLICATION D-98060			
Correspondent Nan	ne and Address	Area Code and Telephone Number <u>(520) 742-6772</u>						
Name D	avid W. Collins							
7	Benman & Collins 11 West Los Altos Road Sucson AZ 85704							
	the total number of pages	of the attached co	nveyance document	# Eight				
	r(s) or Patent Number	r(s)	() Ma	rk if additional num	pers attached			
Enter either the Pa	ntent Application Number of Application Number(s)	or the Patent Numb	er (DO NOT ENTER BO	TH numbers for the s Patent Number(s)	ame property).			
09/315,877								
If this document is being fi signed by the first named	led together with a <u>new</u> Pate executing inventor.	 nt Application, enter	r the date the patent applica	tion was Mo	nth Day Year			
Patent Cooperation	Treat (PCT)							
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Statement and Sign	ature							
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David W. Collins		Sand	Walli	9/8/9	9			
Name of Person Signi	ing	Signature		Date				

PATENT REEL: 010228 FRAME: 0877

Form PTO-1619C	RECORDATION FORM	4 COVER SHEET	U.S. Department of Commerce
Expires 06/30/99	CONTINUA	ATION	Patent and Trademark Office
OMB 0651-0027			PATENT D-98060
	PATENTS	ONLY	
Conveying Party(ies) Enter additional Conveying Partie	() Mark if additional names of co	onveying parties attached	
			Execution Date 7/22/99
Third Party Larry L. Miller			1122177
Fourth Party Marie K. Pomije			Execution Date 7/14/99
Receiving Party	()Mark if additional names of	receiving parties attached	() If document to be recorded is
Enter additional Receiving Party(i Name (line 1)	es)	J.	an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic
Name (line 2)			representative is attached. (Designation must be a separate document from Assignment.)
Address (line 1)			in the state of th
Address (line 2)			
Address (line 3) City	State/Country	Zip Code	
Name (line 1)			() If document to be recorded is
Name (line 2)			receiving party is not domiciled in the United
Address (line 1)			States, an appointment of a domestic representative is attached. (Designation must
Address (line 2)			be a separate document from Assignment.)
Address (line 3)	State/Country	Zip Code	
Application Number(s) or P Enter either the Patent Applic Patent Applic	atent Number(s)	() Mark if additiona	I numbers attached ers for the same property).
09/315,877			

ASSIGNMENT OF PATENT APPLICATION

FOR GOOD AND VALUABLE CONSIDERATION,

We, the undersigned (each) in consideration of good and valuable consideration receipt of which is hereby expressly acknowledged, hereby sell, assign and transfer unto

Regents of the University of Minnesota

a non-profit organization organized under the laws of the state of Minnesota as Assignee, and its successors, assigns and legal representatives, the entire right, title and interest, for all countries in and to certain inventions relating to

VAPOCHROMIC PHOTODIODE

COUNTY OF HENNEPIN

described in an application for Letters Patent of the United States, identified as Attorney Docket No. <u>D-98060</u>, in the Law Offices of Benman & Collins, and filed on <u>May 20, 1999</u>, as Application Serial No. <u>09/315,877</u>, and the invention(s) and improvement(s) set forth therein, and any and all continuations, continuations-in-part, divisionals, and renewals of and substitutes for said application for said Letters Patent, and all the rights and privileges under any and all Letters Patent that may be granted therefor in any country, and any reissues, or reexaminations, or extensions of said Letters Patent. We request that any and all Letters Patent for said inventions be issued to said Assignee, its successors, assigns and legal representatives, or to such nominees as it may designate.

We agree that, when requested, we will, without charge to said Assignee but at its expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable or convenient for securing and maintaining patents for said inventions in any and all countries and for vesting title thereto in said Assignee, its successors, assigns and legal representatives or nominees.

We authorize and empower the said Assignee, its successors, assigns and legal representatives or nominees, to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from us.

We hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said Assignee or nominee to claim the aforesaid benefit of the right of priority provided by the International convention which may henceforth be substituted for it.

We hereby authorize David W. Collins, attorney for Assignee, to insert the filing date and Serial number into the first paragraph of this assignment, after the application for Letters Patent has been filed, and the U.S. Patent Office has assigned such application a Serial Number.

We covenant with said Assignee, its successors, assigns and legal representatives, that the rights and property herein conveyed are free and clear of any encumbrance, and that we have full right to convey the same as herein expressed.

IN WITNESS WHEREOF, We have hereunto signed our names on the day and year set forth below.

Ment R. Mnn
Inventor's Signature

Kent R. Mann
Inventor's Printed Name

STATE OF Minnesota

On this 13 day of July, 1999, before me personally came the above named Kent R. Mann ho is personally known by me or proved to me on the basis of latisfactory evidence to be the same individual who executed the foregoing assignment, and who acknowledged to me that he/she executed the same of his/her own free will for the use and purposes therein set forth.

therein set forth.

My Commission Expires: TAN 31 2000

TERESA J. EMDE
NOTARY PUBLIC MINNESOTA
My Commission Expires Jain 31 2000

Page 1 of 1

Docket No.: D-98060

nventor's Signature		DATE			
Larry L. Miller					
nventor's Printed Name					
STATE OF)				
COUNTY OF) SS)				
On this day of known by me or proved to me on o me that he/she executed the san	the basis of satisfactine of his/her own fre	, 19, before me per tory evidence to be the same will for the use and purpor	rsonally came the above named <u>L</u> individual who executed the foreg ses therein set forth.	arry L. Miller oing assignment, and w	_who is personally who acknowledged
			NOTARY PUBLIC My Commission Expires:		
nventor's Signature		DATE			
-					
Marie K. Pomije nventor's Printed Name					
TATE OF)) SS				
On this day of ersonally known by me or prove	d to me on the basi	s of satisfactory evidence to	nally came the above named <u>Mar</u> be the same individual who executes and purposes therein set forth.	ie K. Pomije uted the foregoing assi	who is gnment, and who
			NOTARY PUBLIC My Commission Expires:		

ASSIGNMENT OF PATENT APPLICATION

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We agree that, when requested, we will, without charge to said Assignee but at its expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable or convenient for securing and maintaining patents for said inventions in any and all countries and for vesting title thereto in said Assignee, its successors, assigns and legal representatives or nominees.

We authorize and empower the said Assignee, its successors, assigns and legal representatives or nominees, to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may henceforth be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from us.

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IN WITNESS WHEREOF, We have hereunto signed our names on the day and year set forth below.

		_		•							
Inventor's Signa	iture			DATE							
Kent R. Mann											
Inventor's Print	ed Name										
STATE OF	Minnesota)) SS									
COUNTY OF)									
by me or proved	_ day of if to me on the basis of uted the same of his/he	satisfactory evi	idence to I	be the same	ndividual	who execut	pove named ted the foreg	<u>Kent</u> going ass	R. Mann ignment, a	<u>ho</u> is pond who ackn	ersonally know owledged to m
							Y PUBLIC mission Exp	oires:			

Page 1 of 2

Docket No.: D-98060

nventor's Signature		DATE		
arry L. Miller nventor's Printed Name				
STATE OF)) SS			
COUNTY OF)			
On this day of nown by me or proved to me on the orm that he/she executed the same	he basis of satisfactory e	evidence to be the same in	nally came the above named <u>Larry L. Miller</u> who is pudividual who executed the foregoing assignment, and who acknowled the foregoing assignment.	ersonally owledged
			NOTARY PUBLIC My Commission Expires:	
nverkor's Signature	myc	7/4/ DATE	99	
nventor's Printed Name	•			
STATE OF Minnes of COUNTY OF Scatt	(A)) SS			
On this 144h day of Junersonally known by me or proved the cknowledged to me that he/she ex	d to me on the basis of	99, before me persona satisfactory evidence to er own free will for the u	Ily came the above named <u>Marie K. Pomije</u> be the same individual who executed the foregoing assignment, se and purposes therein set forth.	who is , and who
			Former J. Riesepol NOTARY PUBLIC My Commission Expires: 1-31-2008	
			LONNA J. RIESGRAF NOTARY PUBLIC—JAINNESOTA SCOTT COUNTY My Commission Expires JAN. 31, 2000	

	For: U.S. and/or Foreign Rights For: U.S. Application or U.S. Patent For: Inventor(s) or Present Owner
ASSIGNMEN	NT OF INVENTION
In consideration of good and valuable cacknowledged, ASSIGNOR:	onsideration, receipt of which is hereby expressly Dr. Yoshihito Kunugi
ASSIGNOR. (inventor(s) or person(s) or entity(ies)	Type or Print Name(s) of ASSIGNOR(S)
who own the invention	27-1-619, Yamane-cho, Higashi, Address Hiroshima, Japan 732-0048
	Japanese Nationality
	thom invention was previously assigned and this PTO add the following)
Recorded on Reel Frame	
hereby sells, assigns and transfers to ASSIGNEE:	Regents of the University of Minnesota Typed or Printed Name of ASSIGNEE
	100 Church Street, SE Address Minneapolia, MN, 55455
	Minneapolis MN 55455 Nationality
and the successors, assigns and legal representa	
the entire right, title and interest	ne of the following) ent (%) interest ons
(check the following box if fo	reign rights are also to be assigned)
and in all foreign countries, including and to any and all improvements which are d	
VAPOCHROMIC PHOTODIODE	
(check and compand which is found in (a) U.S. patent application executed	olete (a), (b), (c) or (d)) d on even date herewith

Page 1 of 2

(c) U.S. application Serial No. <u>09/315,87</u>	
(d) U.S. patent no i A change of address to which corr	ssued
is to be sent regarding patent mair	
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and in, and to, all Letters Patent to be obtained for said continuation, division, renewal, or substitute thereof, a examination thereof.	invention by the above application or any nd as to letters patent any re-issue or re-
ASSIGNOR hereby covenants that no assignm or will be made or entered into which would conflict w	ent, sale, agreement or encumbrance has been with this assignment.
ASSIGNOR further covenants that ASSIGNED with all pertinent facts and documents relating to said i equivalents as may be known and accessible to ASSIG interference, litigation or proceeding related thereto and ASSIGNEE or its legal representatives any and all paper for, obtain, maintain, issue and enforce said application said equivalents thereof which may be necessary or designed.	nvention and said Letters Patent and legal NOR and will testify as to the same in any d will promptly execute and deliver to ers, instruments or affidavits required to apply a, said invention and said Letters Patent and
IN WITNESS WHEREOF, I/We have hereunted	o set hand and seal thisday
of1999 (Date of signing).	•
	as the date of execution of the application if Signature of ASSIGNOR(S)
of 1999 (Date of signing). WARNING: Date of signing must be the same of item (a) was checked above.	Signature of ASSIGNOR(S)
of1999 (Date of signing). WARNING: Date of signing must be the same of	Signature of ASSIGNOR(S)
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of 1999 (Date of signing). WARNING: Date of signing must be the same of item (a) was checked above.	as the date of execution of the application if Signature of ASSIGNOR(S) Type or print the name of the above person
of 1999 (Date of signing). WARNING: Date of signing must be the same of item (a) was checked above.	as the date of execution of the application if Solution Standard Signature of ASSIGNOR(S) Signature of ASSIGNOR(S) Type or print the name of the above person authorized to sign on behalf of ASSIGNOR Title Title Titl
of 1999 (Date of signing). WARNING: Date of signing must be the same of item (a) was checked above. If ASSIGNOR is a legal entity complete the following item.	as the date of execution of the application if Solution Standard Signature of ASSIGNOR(S) Signature of ASSIGNOR(S) Type or print the name of the above person authorized to sign on behalf of ASSIGNOR Title Title Titl

Page 2 of 2

ASSIGNMENT OF PATENT APPLICATION

FOR GOOD AND VALUABLE CONSIDERATION,

We, the undersigned (each) in consideration of good and valuable consideration receipt of which is hereby expressly acknowledged, hereby sell, assign and transfer unto

Regents of the University of Minnesota

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IN WITNESS WHEREOF, We have hereunto signed our names on the day and year set forth below.

Inventor's Signa	ture		DATE				
Kent R. Mann							
Inventor's Print	ed Name						
STATE OF	Minnesota)) SS					
COUNTY OF)					
by me or proved	day of to me on the basis of uted the same of his/he	satisfactory evide	ence to be the same	individual who	executed the foreg	Kent R. Mann poing assignment, an	<u>ho</u> is personally knowrd who acknowledged to me
					OTARY PUBLIC y Commission Exp	vires:	

Page 1 of 2

Docket No.: D-98060

7	m.		7/22/59		
Inventor's Signature		DATE	• /		
Larry L. Miller					
Inventor's Printed Name					
STATE OF MINNESOTA	7)				
COUNTY OF HENNEP.) SS				
On this 26 day of 16 day of 17 day of 18 day o	ne of his/her own free will	l for the use and purpo	oses therein set forth.	amed <u>Larry L. Miller</u> the foregoing assignment,	who is personally and who acknowledged
	I I I I I I I I I I I I I I I I I I I	ESA J. EMDE	3	767 4	
	NOTARY My Course	PUBLIC MINNESOTA ission Expires Jan 31 2000	NOTARY PUBLIC	Expires: 1/31/2000	encour-
	Constitution of the contract o	ission Expires Jan 31 2000	My Commission E	Expires: 1/31/2000	
		***********)	•	
nventor's Signature		DATE		-	
Marie K. Pomije					
nventor's Printed Name					
STATE OF)				
) SS				
COUNTY OF)				
On this day of	, 19	, before me perso	nally came the above name	ed Marie K. Pomiie	who is
ersonally known by me or prove	d to me on the basis of s	satisfactory evidence t	to be the same individual	who executed the foregoin	g assignment, and who
cknowledged to me that he/she ex	tecuted the same of his/he	er own free will for the	use and purposes therein s	set forth.	
			NOTARY PUBLIC		
			My Commission E		

Page 2 of 2