11-13-2000 FORM PTO-1619A U.S. Department of Commerce Expires 06/30/99 Patent and Trademark Office OMB 0651-0027 **PATENT** 101513843 RECORDATION FORM COVER SHEET PATENTS ONLY The Commissioner of Patents and Trademarks: Please record the attached original document(s) or copy(ies). **Submission Type** Conveyance Type New New Assignment Security Agreement License Change of Name Resubmission (Non-Recordation) Document ID# Other Merger **Correction of PTO Error** U.S. Government Reel # Frame# (For Use ONLY by U.S. Government Agencies) **Corrective Document** Reel # Frame # Departmental File Secret File Mark if additional names of conveying parties attached **Conveying Party(ies)** Execution Date Month Day Year Name (line 1) 10/25/2000 Sanjiv Singh Name (line 2) **Execution Date** Second Party Month Day Year 10/20/2000 Name (line 1) Bruce Digney Name (line 2) Mark if additional names of receiving parties attached **Receiving Party** If document to be recorded Name (line 1) Carnegie Mellon University is an assignment and the receiving party is not Name (line 2) domiciled in the United States, an appointment

PI - 607718.1

Address (line 1)

Address (line 2)

Address (line 3)

5000 Forbes Avenue

City

Pittsburgh

PA

State/Country

PATENT REEL: 011220 FRAME: 0443

of a domestic

Assignment.)

15213

Zip Code

representative is attached.

(Designation must be a separate document from

	FC. OFFICE USE ONLY
FORM PTO	0-1619B U.S. Department of Commerce
Expires 06/	30/99 Patent and Trademark Office
OMB 0651	-0027 Page 2 PATENT epresentative Name and Address
	Enter for the first Receiving Party only.
Name	
Address (line 1)	
Address (line 2)	
Address (line 3)	
Address (line 4)	
	Name and Add and
Correspona	ent Name and Address Area Code and Telephone Number (412) 355-8619
Name	Christine R. Ethridge, Esquire
	Kirkpatrick & Lockhart LLP
	Henry W. Oliver Building
	535 Smithfield Street
	Pittsburgh, PA 15222-2312
Pages	Enter the total number of pages of the attached conveyance document including any attachments. # 5
Application	Number(s) or Patent Number(s) Mark if additional numbers attached
Enter either the	e Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).
Patent	Application Number(s) Patent Number(s)
09/494,906	
	s being filed together with a <u>new</u> Patent Application, enter the date the patent application was Month Day Year
signed by the first	named executing inventor.
Patent Coop	peration Treaty (PCT)
Entor	PCT PCT PCT PCT PCT
only if	a U.S. Application Number
has no	t been assigned. PCT PC1 PC1
Number of	Properties Enter the total number of properties involved. # 1

Fee Amount	Fee Amount for Properties Listed (37 CFR 3.41): \$ 40.00
Method of Payme	ent: Enclosed Deposit Account
Deposit Account	Emisse I Instruction
(Enter for paymen	t by deposit account or if additional fees can be charged to the account.)
	Deposit Account Number: # 11-1110
	Authorization to charge additional fees: Yes No
Statement and Sign:	ature
	lge and belief, the foregoing information is true and correct and any attached copy is a document. Charges to deposit account are authorized, as indicated herein.
Christine R. Ethridge	(huttry & trink 1 11/3/00
Name of Person	Signing Signature / Date

FORM PTO-1619C	RECORDATION FORM COV	ER SHEET U.S. Department of Commerce
Expires 06/30/99	CONTINUATION	Patent and Trademark Office
OMB 0651-0027	PATENTS ONLY	PATENT
Conveying Party(ies) Enter additional Conveying F		additional names of conveying parties attached Execution Date Month Day Year
Name (line 1) Herman He	erman	10/24/2000
Name (line 2)		
N (1) - 1) -		Execution Date Month Day Year
	seph Rondinelli	10/25/2000
Name (line 2)		
Name (line 1)		Execution Date Month Day Year
Name (line 2)		
Receiving Party(ies) Enter additional Receiving Party Name (line 1)		dditional names of receiving parties attached If document to be recorded
Name (line 2)		is an assignment and the receiving party is not domiciled in the United
Address (line 1)		States, an appointment of a domestic
Address (line 2)		representative is attached. (Designation must be a separate document from
Address (line 3)	City State/Country	Zip Code
Name (line 1)		If document to be recorded is an assignment and the
Name (line 2)		receiving party is not domiciled in the United
Address (line 1)		States, an appointment of a domestic
Address (line 2)		representative is attached. (Designation must be a separate document from
Address (line 3)		Assignment.)
Address (line 3)	City State/Country	Zip Code
Application Number	(s) or Patent Number(s)	Mark if additional numbers attached
Enter either the Patent Appl	ication Number or the Patent Number (DO NOT E	NTER BOTH numbers for the same property.
Patent Application	Number(s)	Patent Number(s)

Attorney's Docket No. 99434	PATENT	
	For: 🛛 U.S. and/or 🖂 Foreign Right	S
	For: U.S. Application or	
	U.S. Provisional Application For: U.S. Patent	
	For: PCT Application	
	By: Multiple Inventors	
ASSIGNMENT OF INVE	ENTION (MULTIPLE INVENTORS)	
In consideration of the payment by ASSIGN	IEE to ASSIGNOR of the sum of One D	ollar (\$1.00), the
receipt of which is hereby acknowledged, and f		
ASSIGNORS (Inventors):		
ASSIGNORS (Inventors).		
	5450 Dunmoyle Street	
Sanjiv Singh	Pittsburgh, PA 15217	USA
(type or print name of inventors)	Address	Nationality
	App# 206-233 5 St SE Med	licine Hat,
Bruce Digney	Alberta, Canada, T1A 0M5	<u>Canada</u>
•	810 Greenfield Avenue	
Herman Herman	Pittsburgh, PA 15217	Indonesia
Herman		
	1024 Hamlin Drive Bethel Park, PA 15102	USA
Michael Joseph Rondinelli	Deliler Faik, I A 13102	

ASSIGNEE:	
Carnegie Mellon University (type or print name of ASSIGNEE)	5000 Forbes Avenue Address
(a non-profit Pennsylvania organization) Nationality	Pittsburgh, PA 15222-2312
and the successors, assigns and legal representa	atives of the ASSIGNEE
(complete c	one of the following)
lepha the entire right, title and interest	
an undivided percand its territorial possessions	cent (%) interest for the United States
(check the following box, if fo	preign rights are also to be assigned)
and in all foreign countries, including improvements which are disclosed in the invention MEASURE THE CROSS-SECTIONAL AREA OF A	ing all rights to claim priority, in and to any and all on entitled METHOD AND APPARATUS TO AN OBJECT
(check and complete	(a), (b), (c), (d), (e), (f) or (g))
and which is found in	
(a) U.S. patent application executed on	even date herewith
(b) U.S. patent application executed on	
(c) U.S. provisional application naming t	the above inventor(s) for the above-entitled invention
Express mail label no.:	
Mailed:	
To comply with 37 CFR 3.21 for reconnected hereby authorize and request my and number when they become known.	ordal of this assignment, I, an ASSIGNOR signing below, attorney to insert below the filing date and application
(d) X U.S. application no.: <u>09/494,906</u>	filed on January 31, 2000
(e) International application no. PCT /_ filed on	J
(f) U.S. patent no.	issued
A change of address to white maintenance fees is being sent	ich correspondence is to be sent regarding patent separately.
(also check (g), if foreign a	application(s) is also being assigned)

PF - 578356.1

hereby sells, assigns and transfers to

PATENT REEL: 011220 FRAME: 0448

(g) 🔀	and any legal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to letters patent any reissue or re-examination thereof.
ASSIG	NOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF. We have hereu	nto set hand and seal this	
,	date of signin	ng
WARNING: The date of signing must be the same as the o	date of execution of the application, if item (a) was checked above.	
		1
Sanjiv Singh	Dangin dript 10/2.	יזין ג
(type name of Inventor)	Signature of INVENTOR	/
Bruce Digney	1/2 frue 20 Oct 2000	
brace bigney		_
	Lance ZHOLT 2000	
Herman Herman	<i>VC.</i>	_
	Market 25 0.4 7000	
Michael Joseph Rondinelli		
Notarizatio	on or Legalization Page Added.	
Notalization	511 01 Loganzadori i ago i lagga.	

NOTE: No witnessing, notarization or legalization is necessary. If the assignment is notarized or legalized, then it will only be prima facie evidence of execution. 35 USC 261. Use next page if notarization is desired.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Singh et al.

Application No.: 09/494,906 Filed: January 31, 2000

For: METHOD AND APPARATUS TO MEASURE THE CROSS-SECTIONAL AREA OF AN OBJECT

Box: Assignment

Commissioner for Patents Washington, DC 20231

EXPRESS MAIL CERTIFICATE

"Express Mail" label number EJ164516608US
Date of Deposit November 3, 2000

I hereby certify that the following attached paper or fee

PTO FORM-1619A ASSIGNMENT OF INVENTION CHECK PAYABLE TO PTO

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to, Box: Assignment, Commissioner for Patents, Washington, DC 20231

rinted name of person mailing paper or fee)

Signature of person mailing paper or fee)

NOTE:

Each paper must have its own certificate and the "Express Mail" label number as a part thereof or attached thereto. When, as here, the certification is presented on a separate sheet, that sheet must (1) be signed and (2) fully identify and be securely attached to the paper or fee it accompanies. Identification should include the serial number and filing date of the application as well as the type of paper being filed, e.g. complete application, specification and drawings, responses to rejection or refusal, notice of appeal, etc. If the serial number of the application is not known, the identification should include at least the name of the inventor(s) and the title of the invention.

NOTE:

The label number need not be placed in each page. It should, however, be placed on the first page of each separate document, such as, a new application, amendment, assignment, and transmittal letter for a fee, along with the certificate of mailing by "Express Mail." Although the label number may be on checks, such a practice is not required. In order not to deface formal drawings it is suggested that the label number be placed on the back of each formal drawing or the drawings be accompanied by a set of informal drawings on which the label number is placed.

(Express Mail Certificate [8-3])

PI - 610132.1

PATENT REEL: 011220 FRAME: 0450

RECORDED: 11/03/2000