

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Shih-Schon Lin	03/23/2009
Konstantin Yemelyanov	04/10/2009
Edward N. Pugh Jr.	04/02/2009
Nader Engheta	03/23/2009

RECEIVING PARTY DATA

Name:	The Trustees of the University of Pennsylvania
Street Address:	3160 Chestnut Street, Suite 200
City:	Philadelphia
State/Country:	PENNSYLVANIA
Postal Code:	19104

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	12373969

CORRESPONDENCE DATA

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 Address Line 1: 2929 Arch Street, 12th Floor
 Address Line 4: Philadelphia, PENNSYLVANIA 19104

ATTORNEY DOCKET NUMBER:	UPN-5358
NAME OF SUBMITTER:	Valerie Chicchi

Total Attachments: 5
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**PATENT
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PATENT
Joint Inventors
(Pending Application;
Application No. Known)

ASSIGNMENT

WHEREAS, we **Shih-Schon Lin, Konstantin M. Yemelyanov, Edward N. Pugh, Jr., and Nader Engheta**, hereinafter referred to as the assignors, residing respectively at **4035 Chestnut Street, Apt. 104, Philadelphia, Pennsylvania 19104; 2201 Pennsylvania Avenue, Apt. 421, Philadelphia, Pennsylvania 19130; 3500 Powelton Avenue, The Courts - Apt. 205A, Philadelphia, Pennsylvania 19104; and 2077 Fox Creek Road, Berwyn, Pennsylvania 19312** are the joint inventors of certain inventions or improvements for which we have made application for Letters Patent to the United States, identified as Application No. **12/373,969**, entitled **SEPARATION AND CONTRAST ENHANCEMENT OF OVERLAPPING CAST SHADOW COMPONENTS AND TARGET DETECTION IN SHADOW USING POLARIZATION**; and

WHEREAS, **The Trustees of the University of Pennsylvania**, hereinafter referred to as the assignee, of **3160 Chestnut Street, Suite 200, Philadelphia, Pennsylvania 19104**, a **university of higher education of Pennsylvania**, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, and intending to be legally bound hereby, we, the said assignors, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said application and any and all continuations, divisions and renewals of and substitutes for said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, including the full right to sue for and collect damages for past violations of provisional rights having arisen from any publication of said application or any continuations, divisions, or renewals of or substitutes for said application. We further assign to and authorize said assignee, to file in our names applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

AND we hereby covenant that we have full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement in conflict herewith, and we further covenant and agree that we will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees, or legal representatives, and each of us agrees to communicate to said assignee or to its nominee all known facts respecting said

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proceedings, to sign all lawful papers to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.

AND this Assignment may be executed in multiple counterparts, each of which shall be deemed to be an original of this Assignment. Additionally, we hereby authorize our attorneys to collect the signature pages of each executed counterpart and to attach those signature pages to a single copy of this instrument, which single copy and attached signature pages together shall constitute an original of this Assignment.

IN WITNESS WHEREOF, we have hereunto set our hands and seals.

March 23, 2009
Date

Shih-Schon Lin (L.S.)
Shih-Schon Lin

STATE OF Pennsylvania :
COUNTY OF Philadelphia : SS

On this 23rd day of March, year of 2009, before me personally came the above named **Shih-Schon Lin** to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Jess M Coyle
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Jessica M. Coyle, Notary Public
City of Philadelphia, Philadelphia County
My Commission Expires Feb. 26, 2013
Member, Pennsylvania Association of Notaries

PATENT
REEL: 022704 FRAME: 0293

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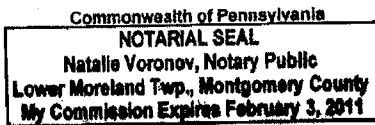
PATENT
Joint Inventors
(Pending Application;
Application No. Known)

04/10/2009
Date

Konstantin Yemelyanov (L.S.)
Konstantin Yemelyanov

STATE OF Pennsylvania :
COUNTY OF Montgomery : SS

On this 10 day of April, year of 2009, before me personally came the above named **Konstantin Yemelyanov** to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.



[Signature]
Notary Public

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4/2/09

Date

Edward N. Pugh Jr. (L.S.)

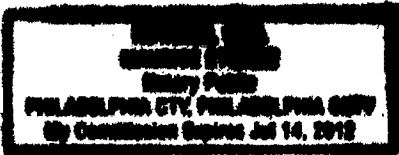
Edward N. Pugh, Jr.

STATE OF Pennsylvania :
 : SS
COUNTY OF Philadelphia :

On this 2nd day of April, year of 2009, before me personally came the above named **Edward N. Pugh, Jr.** to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

[Signature]

Notary Public



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**PATENT
Joint Inventors
(Pending Application;
Application No. Known)**

Mar. 23, 2009
Date

Nader Engheta (L.S.)
Nader Engheta

STATE OF PA :
COUNTY OF Philadelphia : SS

On this 23rd day of March year of 2009, before me personally came the above named **Nader Engheta** to me personally known and known to me to be the same individual who executed the foregoing assignment, and who acknowledged to me that execution of the same was of that person's own free will for the use and purposes therein set forth.

Jessica M. Coyle
Notary Public

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal
Jessica M. Coyle, Notary Public
City of Philadelphia, Philadelphia County
My Commission Expires Feb. 26, 2013
Member, Pennsylvania Association of Notaries