## 502617898 01/02/2014

#### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT2664507

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
ONUR S. YORDEM	11/05/2013
GILLES J. BENOIT	11/01/2013
JINGFEI CHEN	11/12/2013
GUANGLEI DU	10/31/2013
YAN YAN ZHANG	10/31/2013
JULIE LIU	12/12/2013
BOB GUO	11/01/2013
TIMOTHY J. HEBRINK	10/31/2013

### **RECEIVING PARTY DATA**

Name:	3M INNOVATIVE PROPERTIES COMPANY
Street Address:	P.O. BOX 33427
City:	SAINT PAUL
State/Country:	MINNESOTA
Postal Code:	55133-3427

#### PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13875505

## **CORRESPONDENCE DATA**

Fax Number: (651)736-3833 Email: pjbick@mmm.com

Correspondence will be sent via US Mail when the email attempt is unsuccessful.

Correspondent Name: 3M INNOVATIVE PROPERTIES COMPANY

Address Line 1: P.O. BOX 33427

Address Line 4: SAINT PAUL, MINNESOTA 55133-3427

NAME OF SUBMITTER:	PAULA J. BICK
	PATENT

502617898 REEL: 031876 FRAME: 0715

Signature:	/Paula J. Bick/	
Date: 01/02/2014		
	This document serves as an Oath/Declaration (37 CFR 1.63).	
Total Attachments: 8 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00 source=Assignment_Executed_74018US00	2#page2.tif 2#page3.tif 2#page4.tif 2#page5.tif 2#page5.tif 2#page6.tif 2#page6.tif	

Case No:

74018US002

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the

application and for whi	ch a patent is sought on the invention	n entitled:	•	
	MULTI-LAYERED SC	LAR CELL	DEVICE	
The specification of wh	iich:			
is attached hereto	<b>3</b> (			
was filed on as United States	May 2, 2013 Application No.		13/875,505	
is identified as PO filed on	CT International Application No.			
The above-identified a	pplication was made or authorized to	be made by r	ne.	
	that any willful false statement made f not more than 5 years, or both.	in this declara	ation is punishable under 18	U.S.C. 1001 by
and do hereby assign a 3M COMPANY, and a assigns, the entire righ continuation (in whole by me or made jointly termination of, my empall Letters Patent, reex thereto (including the rown name and to claim international convention continuation (in whole part upon the said invehave been by me had	nd valuable consideration, receipt of valuable consideration, receipt of valuable corporation of Delaware, having its point, title, and interest in and to the said or in part) of said application, and in a with others (provided any such improvologment with 3M COMPANY and any aminations, reissues, or extensions tight to apply for Letters Patent, Utility in any priority rights for such foreign a ns, treaties, or otherwise), which have or in part), renewal, reexamination, reintion or improvements thereon, to be this assignment and transfer not been nyself and for my heirs, executors, and	/E PROPERT inncipal office invention and and to any and verment is mady of its existing hereof, of the Models, or Inpplications to been or made; held and enjor made;	IES COMPANY, a wholly-ovat Saint Paul, Minnesota, its application, and in and to a dall improvements in the sade during, or within one year or future subsidiaries), and United States of America ar ventors' Certificates in foreign which such applications are yed granted thereon or on a gror further application base byed as fully and exclusively	wned subsidiary of a successors and any division or aid invention made after the din and to any and ad countries foreign gn countries in its entitled under any divisional, and in whole or in y as they would
consideration any furth that may be deemed n	er applications, assignments, and do ecessary by said Company, its successid and to obtain or maintain Letters F	cuments, and essors, assign	to perform such other acts s, and nominees, fully to see	as I lawfully may, cure its right, title,
	and request the Commissioner of Patre said applications, to said 3M Innova in.			
Legal Name of Invent Onur S. Yordem	or:			
Inventor's Signature:		Date: // /5/24	>i ?	ammumik

Case No:

74018US002

									joint inver	itor of a	claimed	inventio	n in th	e
app	ication	and for	which a p	atent is so	ought or	the inv	ention ent	itled:						
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application and for which a patent is	·······	
	<u>ULTI-LAYERED SOLAR CE</u>	LL DEVICE
The specification of which:		
is attached hereto;		
☑ was filed on May 2, 201	3	
as United States Application N	<b>3</b> .	13/875,505
is identified as PCT Internation	al Anniication No	
filed on	ar Apprication 140:	
The above-identified application was I hereby acknowledge that any willful fine or imprisonment of not more that	Il false statement made in this decl	by me. laration is punishable under 18 U.S.C. 1001 by
and do hereby assign and transfer a 3M COMPANY, and a corporation of assigns, the entire right, title, and in continuation (in whole or in part) of by me or made jointly with others (p termination of, my employment with all Letters Patent, reexaminations, rethereto (including the right to apply own name and to claim any priority international conventions, treaties, of continuation (in whole or in part), re	into the 3M INNOVATIVE PROPEI of Delaware, having its principal offiterest in and to the said invention a said application, and in and to any rovided any such improvement is rown 3M COMPANY and any of its exist eissues, or extensions thereof, of the for Letters Patent, Utility Models, or rights for such foreign applications or otherwise), which have been or rowements thereon, to be held and every such that the said over the said in the said of the said and said the said and said the said and said the said and said the said said the said and said the said said said the said said said said said said said said	knowledged, I have agreed to assign and transfer RTIES COMPANY, a wholly-owned subsidiary of ice at Saint Paul, Minnesota, its successors and and application, and in and to any division or and all improvements in the said invention made made during, or within one year after the ting or future subsidiaries), and in and to any and he United States of America and countries foreign r Inventors' Certificates in foreign countries in its to which such applications are entitled under may be granted thereon or on any divisional, other or further application based in whole or in enjoyed as fully and exclusively as they would
consideration any further application that may be deemed necessary by	ns, assignments, and documents, a said Company, its successors, ass	rators, to execute and deliver without further and to perform such other acts as I lawfully may, igns, and nominees, fully to secure its right, title, ty Models, or Inventors' Certificates in any and all
granted upon any of the said applicatile, and interest therein.		ue any and all Letters Patent which may be erties Company, as the assignee of the entire right
Legal Name of Inventor: Gilles J. Benoit		
Inventor's Signature: 2007	Date:	
KA/		11/01/2013

Case No:

74018US002

PATENT A	PPLICATION (37 CFR § 1.6	3)		
	hich a patent is sought on the		iginal joint inventor of a claim	ed invention in the
The specification of w			The state of the s	
is attached here	to;			
was filed on as United States	May 2, 2013 Application No.		13/875,505	
is identified as P	PCT International Application	No		
The above-identified	application was made or auti	horized to be made by	ripte.	
	e that any willful false statem of not more than 5 years, or		ration is punishable under 18	U.S.C. 1001 by
and do hereby assign 3M COMPANY, and a assigns, the entire rig continuation (in whole by me or made jointly termination of, my errall Letters Patent, ree thereto (including the own name and to clainternational conventicontinuation (in whole part upon the said investign of the continuation of the continuat	a and transfer unto the 3M IN a corporation of Delaware, hight, title, and interest in and to a cr in part) of said application with others (provided any supplyment with 3M COMPAN examinations, reissues, or exinght to apply for Letters Patim any priority rights for such ions, treaties, or otherwise), as or in part), renewal, reexam	NOVATIVE PROPER aving its principal office of the said invention as in, and in and to any a such improvement is many and any of its existifications thereof, of the ent, Utility Models, or a foreign applications the which have been or maination, reissue, or oteon, to be held and e	nowledged, I have agreed to a TIES COMPANY, a wholly-over at Saint Paul, Minnesota, its application, and in and to a and all improvements in the seade during, or within one yearing or future subsidiaries), and a United States of America as Inventors' Certificates in foreign which such applications are say be granted thereon or on a feer or further application basen joyed as fully and exclusively	wned subsidiary of s successors and any division or aid invention made r after the d in and to any and nd countries foreigi gn countries in its entitled under any divisional, ed in whole or in
consideration any fun that may be deemed	ther applications, assignment necessary by said Company	ts, and documents, ar , its successors, assig	stors, to execute and deliver wind to perform such other acts and nominees, fully to selly Models, or Inventors' Certific	as I lawfully may, cure its right, title,
	the said applications, to said		any and all Letters Patent wittes Company, as the assigns	
Legal Name of Inver Jingfei Chen	ntor;			
Inventor's Signature	i,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Date:	o angagagan ana ana ang ana and in indinangan ana ana ang sasa	
Jingfer	chen		2013/11/12	

Case No:

74018US002

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

application and for which a patent is sought on the invention entit	dea:
MULTI-LAYERED SOLAF	R CELL DEVICE
The specification of which:	
is attached hereto;	
was filed on May 2, 2013 as United States Application No.	13/875,505
is identified as PCT International Application No. filed on	
The above-identified application was made or authorized to be m	ade by me.
I hereby acknowledge that any willful false statement made in this fine or imprisonment of not more than 5 years, or both.  In addition, for good and valuable consideration, receipt of which and do hereby assign and transfer unto the 3M INNOVATIVE PR 3M COMPANY, and a corporation of Delaware, having its principle assigns, the entire right, title, and interest in and to the said invercentinuation (in whole or in part) of said application, and in and to by me or made jointly with others (provided any such improvement termination of, my employment with 3M COMPANY and any of it all Letters Patent, reexaminations, reissues, or extensions thereof thereto (including the right to apply for Letters Patent, Utility Modown name and to claim any priority rights for such foreign application name and to claim any priority rights for such foreign application international conventions, treaties, or otherwise), which have been continuation (in whole or in part), renewal, reexamination, reissue part upon the said invention or improvements thereon, to be held have been by me had this assignment and transfer not been made.	is acknowledged, I have agreed to assign and transfer ROPERTIES COMPANY, a wholly-owned subsidiary of pal office at Saint Paul, Minnesota, its successors and antion and application, and in and to any division or co any and all improvements in the said invention made ant is made during, or within one year after the sexisting or future subsidiaries), and in and to any and of, of the United States of America and countries foreign less, or Inventors' Certificates in foreign countries in its attoms to which such applications are entitled under en or may be granted thereon or on any divisional, e, or other or further application based in whole or in I and enjoyed as fully and exclusively as they would de;
I do further agree for myself and for my heirs, executors, and adriconsideration any further applications, assignments, and docume that may be deemed necessary by said Company, its successors and interest as aforesaid and to obtain or maintain Letters Paten countries; and	ents, and to perform such other acts as I lawfully may, s, assigns, and nominees, fully to secure its right, title,
I do hereby authorize and request the Commissioner of Patents t granted upon any of the said applications, to said 3M Innovative title, and interest therein.	o issue any and all Letters Patent which may be Properties Company, as the assignee of the entire right,
Legal Name of Inventor:	
Guanglei Du	
Inventor's Signature Date	» ~~4~~1 ~~~

	FOR	TION AND ASSIGNMENT, UTILITY OR DESIGN PLICATION (37 CFR § 1.63)	Case N	lo:	74018US002	
As a	below named inv lication and for whi	entor, I believe I am an original inve ch a patent is sought on the inventio	ntor or an <b>or</b> igi n entitled;	nal joint invento	r of a claimed inventi	on in the
<u> </u>		MULTI-LAYERED SC	LAR CELL	DEVICE		***************************************
The	specification of wh	nich:				
	is attached hereto	i,				
Ø	was filed on as United States	May 2, 2013 Application No.		13/875,505		
	is identified as PC filed on	T International Application No.	,			
The	above-identified a	pplication was made or authorized to	be made by m	18.		
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	nted upon any of the and interest there	e said applications, to said 3M Innov in.	ative Propertie	s Company, as	the assignee of the e	ntire right
м -	gal Name of Invent in Yan Zhang	OF.	······································	, millionininininininininininininininininin		
Inv	entor's Signature:		Date:	····	<del></del>	
	V	ang .	0d	31,201	}	***************************************

# DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN

PATENT A	PPLICATION (37 CFR § 1.63)	Case No.	74018US002
As a below named in application and for w	nventor, I believe I am an original inve hich a patent is sought on the invention	entor or an original joint in an entitled:	ventor of a claimed invention in the
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is attached here	to;		
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as United States	Application No.	13/875,5	98
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filed on	CT International Application No.		
Which districts to the layer a	24	**************************************	
the above-identified (	application was made or authorized to	be made by me.	
I hereby acknowledge	that any willful false statement made	in this declaration is puni	chable under 10 11 C C 4004 L
fine or imprisonment	of not more than 5 years, or both.	and and another training the posts	arrable tillder 18 0.5 C. 1001 by
In addition, for good a	nd valuable consideration receipt us.	California de la compansión de la compan	
	nd valuable consideration, receipt of valuable consideration, receipt of valuable in the 3M INNOVATIVE CONTRACTOR OF THE CONTRACTOR		
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	lyself and for my heirs, executors, and er applications, assignments, and doc ecessary by said Company, its public		
and interest as aforesa countries; and	id and to obtain or maintain Letters Pa	atent, Utility Models, or In	ventors' Certificates in any and all
do hereby authorize a	nd request the Commissioner of Pate	t the bore une aussi of sto	Stara Datant akink manya
		ive Properties Company.	as the assignee of the entire right
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initia in			
Legal Name of Invento	38.	and the second s	The second se
Julie Liu			
Inventor's Signature:	11	)ate	
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am	e Lou	2013-1	12-12

DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)		Case No:	74018US002
As a below named inventor, I believe I as application and for which a patent is sough	m an original invention	tor or an original join entitled:	t inventor of a claimed invention in th
•	I-LAYERED SO	LAR CELL DEVI	CE
The specification of which:			
is attached hereto;			
was filed on May 2, 2013 as United States Application No.		[13/87	'5,50 <b>5</b>
is identified as PCT International Ap	plication No.		
The above-identified application was mar	da or suthorized to	ha mada hv me	
In addition, for good and valuable considered and do hereby assign and transfer unto the SM COMPANY, and a corporation of Deleassigns, the entire right, title, and interest continuation (in whole or in part) of said a by me or made jointly with others (provide termination of, my employment with 3M Call Letters Patent, reexaminations, reissurthereto (including the right to apply for Leown name and to claim any priority rights international conventions, treaties, or oth continuation (in whole or in part), renewall upon the said invention or improvement are the said invention or improvement as the said invention or improvement and the said invention or improvement as the said invention or improvement as the said invention or improvement and the said invention or improvement as the	leration, receipt of whe 3M INNOVATIVE laware, having its put in and to the said application, and in each some such improves, or extensions it etters Patent, Utility of for such foreign appervise), which have all, reexamination, retents thereon, to be and transfer not beer	E PROPERTIES CO incipal office at Saint invention and applicated to any and all imperent is made during of its existing or future of its place or may be grained and enjoyed as made;	MPANY, a wholly-owned subsidiary of Paul, Minnesota, its successors and allow, and in and to any division or provements in the sald invention madig, or within one year after the are subsidiaries), and in and to any allow states of America and countries fore? Certificates in foreign countries in its such applications are entitled under anted thereon or on any divisional, ther application based in whole or in a fully and exclusively as they would
I do further agree for myself and for my had consideration any further applications, as that may be deemed necessary by said and interest as aforesaid and to obtain o countries; and	ssignments, and do Company, its succe r maintain Letters P	cuments, and to perf ssors, assigns, and r atent, Utility Models,	omn such other acts as I lawfully may nominees, fully to secure its right, title or Inventors' Certificates in any and
I do hereby authorize and request the Co granted upon any of the said application title, and interest therein.	ommissioner of Patr s, to said 3M Inneve	ents to issue any and etive Properties Com	l all Letters Patent which may be pany, as the assignee of the entire ri

Date:

2013.11.1

Legal Name of Inventor. **Bob Guo** 

Bob Guo

Inventor's Signature:

Case No:

74018US002

As a below named inventor, I believe I am an original inventor or an original application and for which a patent is sought on the invention entitled:	ginal joint inventor of a claimed invention in the
MULTI-LAYERED SOLAR CELI	L DEVICE
The specification of which:	
is attached hereto;	
	shings sas
as Officer States Application No.	13/875,505
is identified as PCT International Application No.	
The above-identified application was made or authorized to be made by	me.
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In addition, for good and valuable consideration, receipt of which is acknown and do hereby assign and transfer unto the 3M INNOVATIVE PROPERT 3M COMPANY, and a corporation of Delaware, having its principal office assigns, the entire right, title, and interest in and to the said invention and continuation (in whole or in part) of said application, and in and to any and by me or made jointly with others (provided any such improvement is matermination of, my employment with 3M COMPANY and any of its existing all Letters Patent, reexaminations, reissues, or extensions thereof, of the thereto (including the right to apply for Letters Patent, Utility Models, or Irrown name and to claim any priority rights for such foreign applications to international conventions, treaties, or otherwise), which have been or maternation (in whole or in part), renewal, reexamination, reissue, or oth part upon the said invention or improvements thereon, to be held and enhance been by me had this assignment and transfer not been made;	TIES COMPANY, a wholly-owned subsidiary of at Saint Paul, Minnesota, its successors and d application, and in and to any division or and all improvements in the said invention made ade during, or within one year after the ag or future subsidiaries), and in and to any and united States of America and countries foreign eventors' Certificates in foreign countries in its which such applications are entitled under my be granted thereon or on any divisional, were or further application based in whole or in

I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries: and

I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor: Timothy J. Hebrink			
Inventor's Signature:	Date:	10/31/13	

**PATENT** REEL: 031876 FRAME: 0724

RECORDED: 01/02/2014