PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ARTHUR C. WATTERSON	01/08/2014
JAYANT KUMAR	03/10/2014
VIRINDER S. PARMAR	01/28/2014
RAJESH KUMAR	01/23/2014
VINCENT B. TUCCI	01/18/2014

RECEIVING PARTY DATA

Name:	UNIVERSITY OF MASSACHUSETTS
Street Address:	225 FRANKLIN STREET
Internal Address:	12TH FLOOR
City:	BOSTON
State/Country:	MASSACHUSETTS
Postal Code:	02110

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13894173

CORRESPONDENCE DATA

Fax Number: (978)341-0136

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via

US Mail.

Phone: 9783410036

Email: Lisa.Puopolo@hbsr.com
Correspondent Name: N. SCOTT PIERCE

Address Line 1: HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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Address Line 4: CONCORD, MASSACHUSETTS 01742-9133

ATTORNEY DOCKET NUMBER:	0813.2012-003
NAME OF SUBMITTER:	LISA R. PUOPOLO
SIGNATURE:	/LISA R. PUOPOLO/
DATE SIGNED:	03/27/2014

Total Attachments: 20

502741854 REEL: 032541 FRAME: 0937

PATENT

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ASSIGNMENT

WHEREAS, we, Arthur C. Watterson, Jayant Kumar, Virinder S. Parmar, Rajesh Kumar and Vincent B. Tucci, together with co-inventors Ravi Mosurkal and Lynne A. Samuelson, have invented a certain improvement in Mixed Organic And Inorganic Polymers described in an application for Patent,

the specification of which is about to be filed in the United States Patent Office (use for utility (37 CFR § 1.53(b)) and design filings only);
is about to be filed in the United States Patent Office as a Provisional Application
the specification of which is United States Application No. 13/894,173, filed May 14, 2013;
the specification of which is a Patent Cooperation Treaty Application, International Application No. [], filed [], which designates the United States of America [and is assigned United States Application No. []];
which was patented under United States Patent No. [].

WHEREAS, University of Massachusetts (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 225 Franklin Street, 12th Floor, Boston, MA 02110 desires to confirm its interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, our entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for any and all related provisional and nonprovisional, international and national phase applications, including any and all substitution, reissue, divisional, continuation, and continuation-in-part applications, and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any further applications including substitution, reissue, divisional or continuation, continuation-in-part applications, and all related provisional and nonprovisional, international and national phase applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature: At C.	Wall		
Arthu	r C. Watterson		
State/Commonwealth of MASSACHUSEATS County of MiddleSox			
On this day of 2014, before me, the undersigned notary public, personally appeared Arthur C. Watterson,			
personally known to me, or	personally known to me, or		
proved to me through satisfactory evidence of identification, which was			
to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed. (SEAL) Notary Public OCMA OPP (print name) My Commission expires OH O 2016			

Inventor's Signature:	
Charles to the second s	Jayant Kumar
State/Commonwealth of	
of County of	
	20 hofers we the understand nature
public, personally appeared Jayan	20 , before me, the undersigned notary
	,
personally known to me, o	or .
proved to me through satis	sfactory evidence of identification, which was
	signed on the foregoing instrument in my presence, and the foregoing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//
Inventor's Signature:	
State/Commonwealth	Virinder S. Parmar
of	
County of	
On this day of public, personally appeared Virin	20 , before me, the undersigned notary oder S. Parmar,
personally known to me, or	or
proved to me through sati	sfactory evidence of identification, which was
	s signed on the foregoing instrument in my presence, and the foregoing instrument as his/her free act and deed.
(SEAL)	Notary Public
•	(print name)
	My Commission expires//

- 3 -

Inventor's Signature:		
State/Commonwealth of County of	Rajesh Kumar	
On this day of public, personally appeared Rajesh		
personally known to me, or		
proved to me through satisfactory evidence of identification, which was		
	signed on the foregoing instrument in my presence, and ne foregoing instrument as his/her free act and deed.	
(SEAL)	Notary Public	
	(print name) My Commission expires//	
Inventor's Signature:		
State/Commonwealth of	Vincent B. Tucci	
County of		
On this day of public, personally appeared Vincer		
personally known to me, or		
proved to me through satisf	factory evidence of identification, which was	
	signed on the foregoing instrument in my presence, and ne foregoing instrument as his/her free act and deed.	
(SEAL)	Notary Public	
	(print name)	
	My Commission expires//	

-4-

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AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any further applications including substitution, reissue, divisional or continuation, continuation-in-part applications, and all related provisional and nonprovisional, international and national phase applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

Inventor		Date
	Arthur C. Watterson	
Address	1 University Avenue	
***************************************	Lowell, Massachusetts 01854	
Witness Signature		
Print Witness Nam	ne	
Address		
4140-40-L.,		
Witness Signature		
Print Witness Nam	ne	
raweryon A.		

Inventor	Date_	3/10/2014
() Jayant Kumar		/
Address1 University Avenue		**************************************
Lowell, Massachusetts 01854		
Witness Signature Chnambinelle		
Print Witness Name Chang Binelli		
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Witness Signature Wiaka Hocus		
Print Witness Name Dional Locel		
Address 23 Dunfey St.		
Lowell OMA 01854		
Inventor	Date	The paper of the p
InventorVirinder S. Parmar	Date	
Inventor Virinder S. Parmar Address1 University Avenue		
Address 1 University Avenue		
Address 1 University Avenue Lowell, Massachusetts 01854 Witness Signature		
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Address 1 University Avenue Lowell, Massachusetts 01854 Witness Signature Print Witness Name Address Witness Signature		

Inventor		Date	
	Rajesh Kumar		
Address	1 University Avenue		
Accordance Control of the Control of	Lowell, Massachusetts 01854		***************************************
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E a a c o a d a a a			
Inventor	Vincent B. Tucci	Date	
	Vincent B. Tucci	Date	
	Vincent B. Tucci		
Address	Vincent B. Tucci 1 University Avenue Lowell, Massachusetts 01854		
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IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature:	
State/Commonwealth ofCounty of	ArthurC.Watterson
On this day of public, personally appeared ArthurC	20 , before me, the undersigned notary C. Watterson,
personally known to me, or	
proved to me through satisfa	actory evidence of identification, which was
to be the person whose name was acknowledged that he/she signed the	s signed on the foregoing instrument in my presence, and e foregoing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

-2-

Inventor's Signature:
JayantKumar Ni
State/Commonwealth of
of County of
On this day of 20, before me, the undersigned notary
public, personally appeared JayantKumar,
personally known to me, or
proved to me through satisfactory evidence of identification, which was
to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.
(SEAL) Notary Public
(print name)
My Commission expires//
Inventor Date $01/28/2a$
Virinder S, Parmar
Address WZ-1039 Rani Bagh
Delhi, 110 034, India
Print Witness Name Professor Gurmeet Singh
Address Department of Chemistry, University of Delhi, Delhi–110 007, India
W! C'
Witness Signature
Print Witness Name Dr BK Singh
Address Department of Chemistry, University of Delhi, Delhi-110 007, India

Inventor's Signature:	
State/Commonwealth ofCounty of	RajeshKumar
On this day of public, personally appeared RajeshKumar.	, before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory	evidence of identification, which was
to be the person whose name was signed acknowledged that he/she signed the foreg	ed on the foregoing instrument in my presence, and going instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//
Inventor's Signature:	
State/Commonwealth ofCounty of	incentB.Tucci
On this day of public, personally appeared VincentB.Tuc	20 , before me, the undersigned notary ci,
personally known to me, or	
proved to me through satisfactory e	evidence of identification, which was
to be the person whose name was signed acknowledged that he/she signed the foreg	ed on the foregoing instrument in my presence, and oing instrument as his/her free act and deed.
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IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the

Inventor's Signature:

Arthur C. Watterson

State/Commonwealth of
County of
County of
On this _____ day of _____ 20 ___, before me, the undersigned notary public, personally appeared Arthur C. Watterson,

personally known to me, or
proved to me through satisfactory evidence of identification, which was

to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.

- 2 -

(SEAL)

date set forth below.

Notary Public_____

My Commission expires / /

_____(print name)

Inventor's Signature:			The state of the s
State/Commonwealth ofCounty of	Jay	yant Kumar	
On this or public, personally appear	lay of ired Jayant Kumar,	20	, before me, the undersigned notary
personally know	n to me, or		
proved to me thr	ough satisfactory ev	idence of identi	fication, which was
to be the person whose acknowledged that he/sl	name was signed on ne signed the foregoi	the foregoing ir	nstrument in my presence, and is his/her free act and deed.
(SEAL)		Notary Public_	
			(print name) on expires/
Inventor's Signature:			
State/Commonwealth ofCounty of		der S. Parmar	
On thisd public, personally appea	ay of red Virinder S. Parm	20 nar,	, before me, the undersigned notary
personally know	n to me, or		
proved to me thr	ough satisfactory evi	dence of identif	fication, which was
to be the person whose racknowledged that he/sh	name was signed on the signed the foregoing	the foregoing in	strument in my presence, and s his/her free act and deed.
(SEAL)		Notary Public_	
		AA-A-Namus-Muses in an appropriate to the second	(print name)
		My Commissio	on expires//

- 3 -

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Inventor's Signature:	
State/Commonwealth	ajesh Kumar
of 17 County of New KHOUN	
On this 23 day of Julian public, personally appeared Rajesh Kumar,	20 14, before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory e	vidence of identification, which was
to be the person whose name was signed or acknowledged that he/she signed the forego	the foregoing instrument in my presence, and by presence and deed.
(SEAL)	Notary Public Alentuch Korren Rugh (print name)
	My Commission expires 12 137116
Inventor's Signature:	
State/Commonwealth	cent B. Tucci
of County of	
On this day of public, personally appeared Vincent B. Tuc	
personally known to me, or	
proved to me through satisfactory ex	vidence of identification, which was
to be the person whose name was signed on acknowledged that he/she signed the forego	the foregoing instrument in my presence, and ing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

-4-

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WHEREAS, University of Massachusetts (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at 225 Franklin Street, 12th Floor, Boston, MA 02110 desires to confirm its interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, our entire right, title and interest in and throughout the United States of America. its territories and all foreign countries, in and to said invention as described in said application, together with our entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements. treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of our entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for any and all related provisional and nonprovisional, international and national phase applications, including any and all substitution, reissue, divisional, continuation, and continuation-in-part applications. and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any further applications including substitution, reissue, divisional or continuation, continuation-in-part applications, and all related provisional and nonprovisional, international and national phase applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the

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date set forth below.

(print name)

My Commission expires ____/___/

Inventor's Signature:	
State/Commonwealth ofCounty of	Jayant Kumar
On this day of public, personally appeared Ja	
personally known to m	e, or
proved to me through s	atisfactory evidence of identification, which was
to be the person whose name wacknowledged that he/she sign	vas signed on the foregoing instrument in my presence, and ed the foregoing instrument as his/her free act and deed.
(SEAL)	Notary Public
	My Commission expires//
Inventor's Signature:	
State/Commonwealth ofCounty of	Virinder S. Parmar
	20 , before me, the undersigned notary inder S. Parmar,
personally known to me	, or
proved to me through sa	tisfactory evidence of identification, which was
to be the person whose name waacknowledged that he/she signed	as signed on the foregoing instrument in my presence, and d the foregoing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

- 3 -

Inventor's Si	gnature:
State/Comm	Rajesh Kumar onwealth
of County of	
County of	
On this oublic, perso	day of, before me, the undersigned notary nally appeared Rajesh Kumar,
perso	onally known to me, or
prove	ed to me through satisfactory evidence of identification, which was
	son whose name was signed on the foregoing instrument in my presence, and ad that he/she signed the foregoing instrument as his/her free act and deed.
SEAL)	Notary Public
	(print name
	My Commission expires/
tate/Common f <u>Massac</u> County of <u>M</u> On this ublic, persor	husets
person	nally known to me, or
proved	d to me through satisfactory evidence of identification, which was
Mass. L	ic. No. 540283980
	on whose name was signed on the foregoing instrument in my presence, and that he/she signed the foregoing instrument as his/her free act and deed.
SEAL)	Notary Public Mull a Turull
	Chery A. Purce (print name)
	My Commission expires 12 / 01 / 2017
59441.	CHERYL A. PURCELL NOTARY PUBLIC COMMONWEALTH OF MASSACHUSETTS MY COMM. EXP. 12-07-17

PATENT REEL: 032541 FRAME: 0958

RECORDED: 03/27/2014