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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DAVID W. COLLINSON	08/24/2017
MITRA J.Z. HARTMANN	09/15/2017
CATHERINE L. BRINSON	09/25/2017

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State/Country:	ILLINOIS
Postal Code:	60208

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16102364	

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ATTORNEY DOCKET NUMBER:	2017-055-02
NAME OF SUBMITTER:	CHRISTOPHER N. GEORGE
SIGNATURE: /Christopher N. George/	
DATE SIGNED:	03/08/2019

Total Attachments: 6

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PATENT 505364732 REEL: 048540 FRAME: 0038

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PATENT REEL: 048540 FRAME: 0039

Attorney Docket No. 2017-055-01 NU Reference No. 2017-055-01

ASSIGNMENT

U.S. Serial No: 62/544,206 Filing Date: August 11, 2017 Inventors: L Catherine Brinson; Mitra J. Z. Hartmann; David W. Collinson

Title of U.S. Patent Application: PROCESSING METHODS AND APPARATUS TO

MANUFACTURE A FUNCTIONAL, MULTI-SCALE, TAPERED FIBER FROM POLYMER

FILAMENT

For good and valuable consideration, the receipt and sufficiency of which are hereby agreed, each of the undersigned hereby assigns to Northwestern University, an Illinois not-for-profit corporation, having a place of business at 633 Clark Street, Evanston, Illinois 60208 and its successors and assigns ("Assignee") the entire right, title and interest in and to the inventions of such undersigned disclosed in the application listed above, and in any and all other applications anywhere in the world which the undersigned may file and/or be named as an inventor of, solely or jointly, on said inventions, in any and all patents which may be obtained on any of said applications and in any and all reissues, reexaminations, supplemental examinations, inter partes reviews, oppositions, post-grant reviews, supplementary protection certificates and/or extensions thereof, including without limitation, the right to bring suit and to claim and retain all damages and/or seek other remedies for the past, present and future infringement of any of the foregoing, the right of priority, including without limitation to claim priority benefit of or to said patent applications, and request the Commissioner for Patents in the United States and similar authorities outside the United States to issue said patents to and in the name of the Assignee.

Each of the undersigned states that the application listed above is or was made or authorized to be made by him or her. Each of the undersigned believes himself or herself to be the original inventor or a joint inventor with another undersigned of a claimed invention in the application listed above. Each of the undersigned acknowledges that any willful false statement made by him or her in this paragraph is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five years, or both.

Except in favor of Assignce, each of the undersigned warrants that: (i) he or she is the owner of all its rights, titles and interests herein assigned and has the right to make this unconditional and irrevocable assignment to Assignee without obtaining any approval or permission of a third party; and (ii) there are no outstanding encumbrances, liens, prior assignments, licenses, or other obligations or restrictions on the rights, titles and interests herein assigned.

Page 1 of 5

Upon the request of Assignee and at no expense to the undersigned, each of the undersigned hereby agrees to execute any and all applications on said inventions, including without limitation for the reissue, reexamination, supplementary protection certificate or extension thereof and any oath, declaration or affidavit relating thereto that said Assignee may deem necessary or expedient, and to cooperate to the best of the ability of the undersigned with and perform any and all affirmative acts requested by Assignee to prepare, file, prosecute, maintain, defend, enforce and vest in Assignee the rights, titles and interests assigned herein, including without limitation, preparing and executing statements and giving and producing evidence in support thereof, whereby said rights, titles and interests will be held and enjoyed by said Assignee to the full end of the term for which said patents may be granted as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

Inventor Name: David W. Coll	inson DATE
State of	~ < × × ×
County of	33,
On thisday of County and State aforesaid, ap subscribed to the foregoing instr	peared, to me personally known to be the same person whose name is ument, and acknowledged that he or she executed said
over new and voluntary act and fo	peared, to me personally known to be the same person whose name is ument, and acknowledged that he or she executed said instrument as his or the uses and purposes therein expressed.
ove nee and voluntary act and fo	r the uses and purposes therein expressed. NOTARY PUBLIC
NOTARY SEAL	r the uses and purposes therein expressed.
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Page 2 of 5

WITNESS PAGE - EXECUTION OF ASSIGNMENT

Serial No:	62/544,206	Filin	g Date:	August 11, 2017	
Title of U.S. Patent Application: PROCESSING METHODS AND APPARATUS TO MANUFACTURE A FUNCTIONAL, MULTI-SCALE, TAPERED FIBER FROM POLYMER FILAMENT Reference: NU2017-055-01					
		(Signature)			
INVENTOR PRINTED NAME: DAUJO W COLLIAISON					
	CUTION: 24 AUG	,			
FIRST WITNE	<u>88:</u>				
		(Signature)			
Printed Name:	PETER FLEMI	NG			
Witness Date:	24 Aug 201	7			
Home Address:					
58° Se	9CLIGE RD				
	ANGA				
	AND NEW ZE/				
SECOND WITT	V. Eleming	(Signature)			
Printed Name: ROBYN FRANKS					
Witness Date: 24 AUG 2017					
Home Address:					
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PATENT REEL: 048540 FRAME: 0042 U.S. Serial No: 62/544,206 Filing Date: August 11, 2017

Inventors: L. Catherine Brinson; Mitra J. Z. Hartmann; David Collinson

Title of U.S. Patent Application: PROCESSING METHODS AND APPARATUS TO

MANUFACTURE A FUNCTIONAL, MULTI-SCALE, TAPERED FIBER FROM POLYMER

FILAMENT

Undersigned (ASSIGNORS) continued:

Inveneor Name: Mitra J. Z. Hartmann DATE

State of JUNO'S

County of Cook ss.

On this 15 day of September 2017, before me, a Notary Public in and for the County and State aforesaid, appeared, to the personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he or she executed said instrument as his or her free and voluntary act and for the uses and purposes therein expressed.

INOTARY SEAL

My Commission Expires: 10/23/2020

OFFICIAL SEAL **MOLLY E SCANLON** NOTARY PUBLIC, STATE OF ILLINOIS My Commission Expires Oct 23, 2020 U.S. Serial No: 62/544,206 Filing Date: August 11, 2017

Inventors: L Catherine Brinson; Mitra J. Z. Hartmann; David Collinson

Title of U.S. Patent Application: PROCESSING METHODS AND APPARATUS TO

MANUFACTURE A FUNCTIONAL, MULTI-SCALE, TAPERED FIBER FROM POLYMER

FILAMENT

Undersigned (ASSIGNORS) continued:

Inventor Name: L. Cathorine Brinson

State of North Caralina

County of Dui ham

On this 25th day of September 2011, before me, a Notary Public in and for the County and State aforesaid, appeared, to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he or she executed said instrument as his or her free and voluntary act and for the uses and purposes therein expressed.

[NOTARY SEAL]

NOTARY PUBLIC

My Commission Expires: 34/4/1, 2019

U.S. Serial No: 62/544,286 Filing Date: August 11, 2017

Inventors: L Catherine Brinson; Mitra J. Z. Hartmann; David W. Collinson Title of U.S. Patent Application: PROCESSING METHODS AND APPARATUS TO

MANUFACTURE A FUNCTIONAL, MULTI-SCALE, TAPERED FIBER FROM POLYMER

ASSIGNEE ACCEPTANCE: Northwestern University:

On behalf of Northwestern University, Assignee, the authorized signatory below, hereby confirms Assignee's acceptance of all rights, privileges, titles and interests conveyed by this Assignment.

Authorized Signature:

Printed Name

RECORDED: 03/08/2019

Beyerly R. Milligan, Invention Specialist or

Nicole A. Janovick, Ph.D., J.D., Invention Manager

Department: Innovation and New Ventures Office (INVO)

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PATENT REEL: 048540 FRAME: 0045