01/17/2017 504180887

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4228520

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DAVID SMITH	07/12/2016
DAVID BRADY	09/19/2016
TOM DRISCOLL	07/12/2016
JOHN HUNT	07/12/2016
ALEXANDER MROZACK	12/28/2016
MATTHEW REYNOLDS	09/20/2016
DANIEL MARKS	07/08/2016

RECEIVING PARTY DATA

Name:	DUKE UNIVERSITY
Street Address:	2812 ERWIN ROAD
Internal Address:	SUITE 306
City:	DURHAM
State/Country:	NORTH CAROLINA
Postal Code:	27705

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15000547

CORRESPONDENCE DATA

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Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Email: docket@olivelawgroup.com

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Address Line 4: CARY, NORTH CAROLINA 27511

ATTORNEY DOCKET NUMBER:	210/17/2 UTIL
NAME OF SUBMITTER:	BENTLEY J. OLIVE
SIGNATURE:	/Bentley J. Olive/

PATENT REEL: 040987 FRAME: 0861

504180887

DATE SIGNED:	01/17/2017
Total Attachments: 8	
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PATENT REEL: 040987 FRAME: 0862

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ASSIGNMENT OF RIGHTS

WHEREAS, We, **David Smith**, of Durham, North Carolina; **David Brady**, of Durham, North Carolina; **Tom Driscoll**, of San Diego, California; **John Hunt**, of Knoxville, Tennessee; **Alexander Mrozack**, of Durham, North Carolina; **Matthew Reynolds**, of Durham, North Carolina; and **Daniel Marks**, of Durham, North Carolina (hereinafter ASSIGNORS) are inventors of the one or more new and useful improvements described in a U.S. Utility Application Serial No. 15/000,547, Attorney Docket No. 210/17/2 UTIL, filed on or about January 19, 2016 with the title:

METAMATERIAL DEVICES AND METHODS OF USING THE SAME

WHEREAS, Duke University, having an address of 2812 Erwin Road, Suite 306, Durham, North Carolina 27705 (hereinafter, together with any successors, assigns, legal representatives of assignee or to any number of iterations of successors and assigns, collectively called ASSIGNEE) is desirous of transferring and memorializing the transfer of the entire right, title and interest therein for ASSIGNEE;

NOW, THEREFORE, ASSIGNORS, through ASSIGNORS' employment or other relationship with ASSIGNEE and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the said ASSIGNORS by these presents hereby sell, assign, and transfer unto the said ASSIGNEE the full, exclusive, non-revocable, and worldwide rights, if any, to the said improvements, including improvements to ornamental design, and to all ASSIGNORS copyrights in the above-identified application(s), including:

all rights currently owned or acquired in the future by ASSIGNORS in any patent or other legal document claiming one or more aspects of the improvements described in the above-identified application(s) whether or not the improvement is explicitly claimed in the above-identified application(s);

all rights currently owned or acquired in the future by ASSIGNORS in any patent or other legal document that claims any of the above-identified application(s) as a priority document, and any patent which results directly or indirectly through any number of links to any of the above-identified patent application(s), including links such as: one or more provisional applications which include the subject matter in the application(s) identified above, one or more non-provisional applications which include subject matter in the application(s) identified above including applications which do not claim priority to the application(s) identified above, one or more continuation or divisional applications, one or more continuation-in-part applications, one or more reissue processes, one or more re-examination proceedings, or any other like processes to any of the above;

and the right to claim priority to one or more of the application(s) identified above for all member countries under any international agreements concerning intellectual property, including but not limited to rights such as utility patent, extensions, design patent, utility model registration, inventor's certificates, defensive publications, and the like; and the results of any process granting

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legal rights within the United States or anywhere in the world.

ASSIGNORS hereby authorize and request the Commissioner for Patents of the United States Patent and Trademark Office, and any officials of foreign or other patent systems whose duty it is to issue patents or related rights on applications as referenced above to issue any patents or document conveying rights arising from any of the above-identified patent application(s) to ASSIGNEE in accordance with the terms of this assignment for ASSIGNEE's sole use and behalf, to the full end of the term for which any patent may be granted, as fully and entirely as the same would have been held by ASSIGNORS had this assignment and sale not been made.

ASSIGNORS hereby grant to ASSIGNEE the right to file applications in any or all countries or regional systems on any of the conveyed intellectual property in the name of the ASSIGNORS, in the name of the ASSIGNEE, or otherwise, as ASSIGNEE may deem advisable.

ASSIGNORS agree that upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE, for full protection and title in and to the improvements hereby transferred including any and all papers desired by ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

ASSIGNORS hereby covenant and agree to: communicate to ASSIGNEE any facts known to those ASSIGNORS respecting said improvements; provide relevant prior art material as required by law; testify in any legal proceeding; sign all lawful papers; execute all divisional, continuation, continuation-in-part, substitute and reissue applications; make all rightful oaths or declarations; and generally do everything possible to obtain, maintain, and enforce proper legal protection for said improvements in all countries, regions, or systems.

ASSIGNORS hereby further covenant and agree that ASSIGNORS have the full right to convey the entire interest herein assigned, and ASSIGNORS have not and will not execute any agreement in conflict herewith.

ASSIGNORS agree that if any provision of this Assignment shall for any reason be held to be invalid or unenforceable, such decision shall not affect, impair or invalidate the remainder of this Assignment but shall be confined in its operation to the provision of this Assignment directly involved in the controversy in which the decision was rendered. The invalid or unenforceable provision shall be reformed so that ASSIGNORS shall have the obligation to perform reasonably in the alternative to give the ASSIGNEE the benefit of its bargain. In the event the invalid or unenforceable provision cannot be reformed, the other provisions or applications of this Assignment shall be given full effect, and the invalid or unenforceable provision shall be deemed struck.

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Duke Ref.: DU3885US Page 3 of 6 of Assignment of Rights	
Executed this 12th day of July	, 2016.
	David Smith
Witnessed by: Ladre Apell Name Name	7/12/16 Date 7/12/16 Date
Executed this day of	, 2016.
	David Brady
Witnessed by:	
Name	Date
Name	Date

Attorney Docket No.: 210/17/2 UTIL Duke Ref.: DU3885US Page 3 of 6 of Assignment of Rights	
Executed this day of	, 2016.
	David Smith
Witnessed by:	
Name	Date
Name	Date
Executed this 19 day of Seyo	, 2016.
	David Brady
Witnessed by:	91.0 1006
Name /	09/19/2016 Date
Name)	95gpDC Date

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Page 4 of 6 of Assignment of Rights

Executed this 12 day of JULY, 2016.

Tom Driscoll

Witnessed by:

Lawur 12 12 JUL 16
Date

12/12/06

Name /

Executed this 12 day of JULY, 2016.

John Hant

Witnessed by:

12 JUL 16

Date

12 012014

Date

Duke Ref.: DU3885US		
Page 5 of 6 of Assignment of Rights		
Executed this ZET day of Zeconder	(2016 haven	
	4 Moral	
Al	exander Mrozack	
Witnessed by:		
Sean & March 12	128/16	
Name)	Date	
0 Manual - 1	en 11	
Name	Date	
Executed thisday of	, 2016.	
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Executed thisday of	, 2016.	
	itthew Reynolds	
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Mitnessed by:	itthew Reynolds	
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Mitnessed by:	itthew Reynolds	

Page 5 of 6 of Assignment of Rights		
Executed this day of	, 2016.	
	Alexander Mrozack	
Witnessed by:		
Name	Date	
Name	Date	
Executed this 20th day of SCPTEM	BUR_, 2016.	
	Muth Shoph Matthew Reynolds	
Witnessed by:		
CO DOCCO	9/20/2016 Date	
Anden Pal 7-61	9/20/2014 Date	

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Attorney Docket No.: 210/17/2 UTIL Duke Ref.: DU3885US Page 6 of 6 of Assignment of Rights	
Executed this 8 day of Tuly	Daniel Marks
Witnessed by:	
125 M	08/07/16
Name	Date
Name O	8 Jul 2016 Date
Executed this day of	, 2016.
	The state of the s
	Eric F. Wagner Associate Director of Legal/OLV Duke University
Witnessed by:	
Name	17.6/4 Date
Katuri Holano	121612016 Date