PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

CONVEYING PARTY DATA

Name	Execution Date
PAUL H. PAX	04/26/2019
DIANA C. CHEN	04/18/2019
MICHAEL J. MESSERLY	05/22/2019

RECEIVING PARTY DATA

Name: LAWRENCE LIVERMORE NATIONAL SECURITY, LLC			
Street Address:	7000 EAST AVENUE		
City:	LIVERMORE		
State/Country:	CALIFORNIA		
Postal Code:	94550		

PROPERTY NUMBERS Total: 1

Property Type	Number			
Application Number:	16881388			

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	LLNS.016A
NAME OF SUBMITTER:	JOAN Y. CHAN
SIGNATURE:	/Joan Y. Chan/
DATE SIGNED:	05/23/2022

Total Attachments: 3

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> PATENT REEL: 059992 FRAME: 0161

507298340

ASSIGNMENT

LLNL	Record of Invention Case No. <u>IL-13</u>	, entitled:	
	AI.	L SOLID HYBRID ARROV	/ FIBER
For g	ood and valuable consideration, the rec	eipt of which is hereby acknov	rledged, ASSIGNOR(s)
1. Paul H. Pax 2. Diana C. Chen			Chen
3. <u>M</u>	lichael J. Messerly	4.	
limite assign	d liability company, having a place of	of business at 7000 East Ave GNEE all of its right, title and	Livermore National Security, LLC, a Delaware nue, Livermore, CA 94550 and the successors, i interest throughout the world in and to any and wention Case No. and in:
*	U.S. Provisional Application Serial N	o. 62/851798	, filed on <u>May 23, 201</u> 9
₩	U.S. Patent Application Serial No.	16/881388	, filed on May 22, 2020
*	International Application Serial No.		, filed on
be observed all Interest ASSIGNATION WASSIGNATION WAS WASSIGNATION WAS	tained for said inventions and discoverx extension or substitute thereof, and any emational Conventions for the Protection GNOR(S) hereby covenants that no as high would conflict with this assignment GNOR(S) further covenants that ASSI ments relating to said invention and s	ries by the above application(y reissue, reexamination or ext on of Industrial Property; signment, sale, agreement or e nt; GNEE will, upon its request, 1 aid Letters Patent and legal	claim priority, and in and to all Letters Patent to s) or any continuation, division, continuation-inension of said Letters Patent and all rights under neumbrance has been or will be made or entered be provided promptly with all pertinent facts and equivalents as may be known and accessible to or proceeding relating thereto and will promptly
for, of which the ex	te and deliver to ASSIGNEE or its legotain, maintain, issue or enforce said a may be necessary or desirable to carry	al representative any and all p application, said invention and out the purposes thereof. An	apers, instruments or affidavits required to apply said Letters Patent and said equivalents thereof attorney of record is authorized and requested by date and serial number of said application when
	the <u>ASSIGNOR(S)</u> requests the Common and any reissue or extension thereof to		emarks to issue said Letters Patent of the United vermore National Security, LLC.
execu	ted this	Signature of A	SSIGNOR(s)
4/	26/2019	Rank	L PLX
annohanian	Date	Paul H. Pax	, , , , , , , , , , , , , , , , , , ,
execu	ted this	Signature of A	SSIGNOR(s)
***************************************	Date	Diana C. Chen	
execu	ted this	Signature of Af	SSIGNOR(s)
	Plata	Michael I Ma	

PATENT REEL: 059992 FRAME: 0162

ASSIGNMENT

LLN	L Record of Invention Case No. <u>IL-13</u>	352 , entitled:	*
	ALI	L SOLID HYBRID ARRO)W FIBER
Forg	good and valuable consideration, the rece	***************************************	
11	Paul H. Pax	2. Diana	C. Chen
31	Michael J. Messerly	4.	***************************************
limite assig	ed liability company, having a place of	s to ASSIGNEE, Lawrence f business at 7000 East Ac INEE all of its right, title a	e Livermore National Security, LLC, a Delaware venue, Livermore, CA 94550 and the successors, and interest throughout the world in and to any and
-	U.S. Provisional Application Serial No	62/851798	, filed on <u>May 23, 201</u> 9
-	U.S. Patent Application Serial No.	16/881388	, filed on May 22, 2020
*	International Application Serial No		, filed on
ASSI docum ASSI execution, official	ntained for said inventions and discovering extension or substitute thereof, and any iternational Conventions for the Protection GNOR(S) hereby covenants that no assignment which would conflict with this assignment of the same in the analysis of the same of the sam	ies by the above application reissue, reexamination or end of Industrial Property; grament, sale, agreement or t; NEE will, upon its request, id Letters Patent and legal any interference, litigation I representative any and all oplication, said invention arout the purposes thereof. As this assignment the filing	to claim priority, and in and to all Letters Patent to n(s) or any continuation, division, continuation-in- xtension of said Letters Patent and all rights under encumbrance has been or will be made or entered , be provided promptly with all pertinent facts and i equivalents as may be known and accessible to n, or proceeding relating thereto and will promptly papers, instruments or affidavits required to apply nd said Letters Patent and said equivalents thereof n attorney of record is authorized and requested by g date and serial number of said application when
AND States	the <u>ASSIGNOR(S)</u> requests the Commission and any reissue or extension thereof to t	issioner of Patents and Trache ASSIGNEE, Lawrence I	demarks to issue said Letters Patent of the United Livermore National Security, LLC.
execu	ted this	Signature of A	ASSIGNOR(s)
	Date	Paul H. Pax	
	ted this	Signature of A	
<u>^</u> Y	ril 18, 2019		iniu
	Date	Diana C. Che	В
execu	ted this	Signature of A	.SSIGNOR(5)
	Date	Michael J. Me	esseriy

PATENT REEL: 059992 FRAME: 0163

<u>ASSIGNMENT</u>

LL)	NL Record of Invention Case No. IL-133	352	, entitled:			
	ALI	. SOLID HYB	RID ARROY	w fiber		
For	good and valuable consideration, the rece	ipt of which is	hereby ackno	wledged, ASSI	GNOR(s)	
1.	1. Paul H. Pax 2. Diana C. Chen					
3.	Michael J. Messerly		4.			
lim assi	eby sells, assigns, transfers, and conveys ited liability company, having a place of gns and legal representative of the ASSIC inventions and discoveries found in the ab-	f business at 7 3NEE all of its	000 East Av	enue, Livermo id interest thro	re, CA 94550 and the successors, ughout the world in and to any and	
•	U.S. Provisional Application Serial No	62851	798	, filed on	5/23/19	
*	U.S. Patent Application Serial No. 1	6/881388				
*	International Application Serial No.			, filed on	······································	
part all I	obtained for said inventions and discover to extension or substitute thereof, and any international Conventions for the Protection SIGNOR(S) hereby covenants that no assitution would conflict with this assignment SIGNOR(S) further covenants that ASSIC uments relating to said invention and sa SIGNOR and will testify as to the same in	reissue, reexan on of Industrial ignment, sale, a it; iNEE will, upo id Letters Pate	nination or ex Property; agreement or its request, and legal	tension of said encumbrance h be provided pr equivalents as	Letters Patent and all rights under as been or will be made or entered comptly with all pertinent facts and may be known and accessible to	
for, whi the	cute and deliver to ASSIGNEE or its legal obtain, maintain, issue or enforce said at the may be necessary or desirable to carry execution of this assignment to insert intoilly known.	oplication, said out the purpose	invention ans sthereof. Ar	d said Letters a attorney of re	Patent and said equivalents thereof cord is authorized and requested by	
	D the <u>ASSIGNOR(S)</u> requests the Commes and any reissue or extension thereof to					
exe	cuted this	S	ignature of A	SSIGNOR(s)		
	Date	\neg	Paul H. Pax			
exe	cuted this	S	Signature of ASSIGNOR(s)			
	Date	7	Diana C. Che	η		
exe	cuted this	S	ignature of A	SSIGNOR(s)		
22	22. May - 2019 May 19 M				~~	
	Date)	Michael J. Me	kserly	7	

PATENT REEL: 059992 FRAME: 0164

RECORDED: 05/23/2022