

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM675602

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	SECURITY INTEREST		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
Essentium, Inc.		09/02/2021	Corporation: DELAWARE
RECEIVING PARTY DATA			
Name:	QSHGP, Inc.		
Street Address:	8801 South Yale Avenue		
Internal Address:	Suite 380		
City:	Tulsa		
State/Country:	OKLAHOMA		
Postal Code:	74137		
Entity Type:	Corporation: TEXAS		
PROPERTY NUMBERS Total: 26			
Property Type	Number	Word Mark	
Serial Number:	87320681	FLASHFUSE	
Serial Number:	87320665	FUSEBOX	
Serial Number:	87375750	ESSENTIUM	
Serial Number:	87375669	ESSENTIUM BUILD YOUR WORLD	
Serial Number:	87375693	ESSENTIUM FILAMENT	
Serial Number:	87375717	MATERIALS GENIUS	
Serial Number:	87872464	FLASHFUSE FILAMENT	
Serial Number:	88838976	ESSENTIUM DRYBOX	
Serial Number:	88188701	HSE	
Serial Number:	88188657	HIGH SPEED EXTRUSION	
Serial Number:	88188558	ESSENTIUM HIGH SPEED EXTRUSION	
Serial Number:	90168613	ESSENTIUM HSE 180·S	
Serial Number:	88192332	HSE 180 · S	
Serial Number:	88285473	ARBORX	
Serial Number:	88285497	HOZZLE	
Serial Number:	88285521	ESSENTIUM FILAMENT CARE SYSTEM	
Serial Number:	88684853	INDUSTRIAL ADDITIVE	
Serial Number:	88684970	ESSENTIUM INDUSTRIAL ADDITIVE	

CH \$665.00 87320681

Property Type	Number	Word Mark
Serial Number:	88684981	E ESSENTIUM INDUSTRIAL ADDITIVE
Serial Number:	88776061	
Serial Number:	90726842	ESSENTIUM WRX
Serial Number:	90751738	ESSENTIUMX
Serial Number:	90168659	ESSENTIUM HSE
Serial Number:	90632737	FLASHFUSE
Serial Number:	88843965	TRIFUSION DEVICES
Serial Number:	86178631	BUILDING THE NEXT GENERATION OF ESSENTIA

CORRESPONDENCE DATA

Fax Number: 2149536899
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.
Phone: 2149536500
Email: daltmdept@bakerbotts.com
Correspondent Name: Cecily Porterfield, Baker Botts L.L.P.
Address Line 1: 2001 Ross Avenue
Address Line 2: Suite 900
Address Line 4: Dallas, TEXAS 75201-2900

ATTORNEY DOCKET NUMBER:	004157.0614
NAME OF SUBMITTER:	Cecily Porterfield
SIGNATURE:	/Cecily Porterfield/
DATE SIGNED:	09/20/2021

Total Attachments: 12

source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page1.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page2.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page3.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page4.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page5.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page6.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page7.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page8.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page9.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page10.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page11.tif
source=Essentium Inc to QSHGP, Inc - IP Security Agreement (executed)#page12.tif

INTELLECTUAL PROPERTY SECURITY AGREEMENT

This INTELLECTUAL PROPERTY SECURITY AGREEMENT (“**IP Security Agreement**”), dated as of September 2, 2021, is made by and between Essentium, Inc., a Delaware corporation (the “**Grantor**”) in favor of QSHGP, Inc., a Texas corporation (the “**Collateral Agent**”), as collateral agent for the purchasers under the Note Purchase Agreement referred to below.

WHEREAS, the Grantor has entered into a Note Purchase Agreement dated as of August 27, 2021 (the “**Note Purchase Agreement**”), with the Collateral Agent and the purchasers (the “**Purchasers**”) party thereto. Capitalized terms used herein and not otherwise defined herein shall have the respective meanings given to them in the Note Purchase Agreement.

WHEREAS, as a condition precedent to the making of the Loans by the Purchasers under the Note Purchase Agreement, the Grantor has granted to the Collateral Agent, for the benefit of the Purchasers, a security interest in, among other property, certain intellectual property of the Grantor, and has agreed to execute and deliver this IP Security Agreement for recording with the United States Patent and Trademark Office.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Grant of Security. The Grantor hereby pledges and grants to the Collateral Agent for the ratable benefit of the Purchasers a security interest in and to all of the right, title, and interest of the Grantor in, to, and under the following (the “**IP Collateral**”):

(a) the patents and patent applications set forth in Schedule 1 hereto and all reissues, divisions, continuations, continuations-in-part, renewals, extensions, and reexaminations thereof and amendments thereto (the “**Patents**”);

(b) the trademark registrations and applications set forth in Schedule 2 hereto, together with the goodwill connected with the use thereof and symbolized thereby, and all extensions and renewals thereof (the “**Trademarks**”), excluding only United States intent to use trademark applications to the extent that, and solely during the period in which, the grant, attachment, or enforcement of a security interest therein would, under applicable federal law, impair the registrability of such applications or the validity or enforceability of registrations issuing from such applications;

(c) all rights of any kind whatsoever of the Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions, and otherwise throughout the world;

(d) any and all royalties, fees, income, payments, and other proceeds now or hereafter due or payable with respect to any and all of the foregoing; and

(e) any and all claims and causes of action with respect to any of the foregoing, whether occurring before, on, or after the date hereof, including all rights to and claims for damages, restitution, and injunctive and other legal and equitable relief for past, present, and future infringement, dilution, misappropriation, violation, misuse, breach, or default, with the right, but no obligation, to sue for such legal and equitable relief and to collect, or otherwise recover, any such damages.

2. Recordation. The Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and any other government officials to record and register this IP Security Agreement upon request by the Collateral Agent.

3. Loan Documents. This IP Security Agreement has been entered into pursuant to and in conjunction with the Note Purchase Agreement, which is hereby incorporated by reference. The provisions of the Note Purchase Agreement shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of the Collateral Agent with respect to the IP Collateral are as provided by the Note Purchase Agreement, the Notes and related documents, and nothing in this IP Security Agreement shall be deemed to limit such rights and remedies.

4. Execution in Counterparts. This IP Security Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this IP Security Agreement by facsimile or in electronic (i.e., “pdf” or “tif”) format shall be effective as delivery of a manually executed counterpart of this IP Security Agreement.

5. Successors and Assigns. This IP Security Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

6. Governing Law. This IP Security Agreement shall be governed by, construed under and enforced in accordance with the laws of the State of New York.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Grantor has caused this IP Security Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

ESSENTIUM, INC.

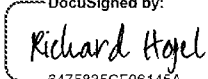
DocuSigned by:

By: _____
Name: Blake Teipel
Title: Chief Executive Officer

Address for Notices:
19025 N. Heatherwilde Blvd., Suite 100
Pflugerville, TX 78660

AGREED TO AND ACCEPTED:

QSHGP, INC., as Collateral Agent

DocuSigned by:

By: _____
Name: Richard C. Hojel
Title: Chairman

Address for Notices:

8801 South Yale Ave., Suite 380

Tulsa, OK 74137

SCHEDULE 1

PATENTS

[See attached.]

Foreign Patent	ES5001_PCT_EP	ES5001	ES5001	CELLULOSE NANOCRYSTAL POLYMER COMPOSITE	Pending	1/22/2016	EP16803164.1	EPO
US Patent	ES5001	ES5001	ES5001	CELLULOSE NANOCRYSTAL POLYMER COMPOSITE	Converted	6/3/2014	6200724	US
US Patent	ES5001_PCT_US	ES5001	ES5001	CELLULOSE NANOCRYSTAL POLYMER COMPOSITE	Issued	12/11/2016	1,515,550	US
PCT	ES5001_PCT	ES5001	ES5001	CELLULOSE NANOCRYSTAL POLYMER COMPOSITE	Done	6/3/2015	PCT/US2015/34004	PCT
Foreign Patent	ES5002_PCT_EP	ES5002	ES5002	NATURAL FIBER COMPOSITE AND METHOD OF PRODUCTION	Pending	11/17/2017	16 781 763.2	EPO
US Patent	ES5002_PCT_US	ES5002	ES5002	NATURAL FIBER COMPOSITE AND METHOD OF PRODUCTION	Converted	4/20/2015	62150923	US
US Patent	ES5002_PCT_US	ES5002	ES5002	NATURAL FIBER COMPOSITE AND METHOD OF PRODUCTION	Issued	10/20/2017	1,556,816	US
PCT	ES5002_PCT	ES5002	ES5002	NATURAL FIBER COMPOSITE AND METHOD OF PRODUCTION	Done	4/20/2016	PCT/US1629436	PCT
Foreign Patent	ES5003_PCT_CA	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Pending	12/28/2017	2991063	Canada
Foreign Patent	ES5003_PCT_EP	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Granted	11/3/2018	16 818 8209	EPO
Foreign Patent	ES5003_PCT_JP	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Issued	12/28/2017	2017-569410	Japan
Foreign Patent	ES5003_PCT_JR	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Pending	1/30/2018	PCT/US1629436	Canada
Foreign Patent	ES5003_PCT_JK	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Terminated	12/30/2017	62196417	Mexico
US Patent	ES5003_PCT_US	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Converted	6/30/2015	1,573,939	US
US Patent	ES5003_PCT_US	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Issued	12/22/2017	1,682,008	US
US Patent	ES5003_US_DIV	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Pending	3/16/2020	PCT/US2016/04047	US
PCT	ES5003_PCT_CN	ES5003	ES5003	SYNTHETICALLY MODIFIED THERMOPLASTIC POLYMER COMPOSITES HAVING CELLULOSE NANOPARTICLES	Issued	6/30/2016	11,093,240.0	PCT
Foreign Patent	ES5006_PCT_CN	ES5006	ES5006	THREE DIMENSIONAL PRINTER APPARATUS	Issued	6/21/2019	1,109,823,400.0	China
Foreign Patent	ES5006_PCT_EP	ES5006	ES5006	THREE DIMENSIONAL PRINTER APPARATUS	Pending	6/3/2019	1,789,169.0	EPO
Foreign Patent	ES5006_PCT_JK	ES5006	ES5006	THREE DIMENSIONAL PRINTER APPARATUS	Pending	3/3/2020	62020003633.8	Hong Kong
US Patent	ES5006_PCT_US	ES5006	ES5006	THREE DIMENSIONAL PRINTER APPARATUS	Converted	11/3/2016	62,416,890	US
US Patent	ES5006_PCT_US	ES5006	ES5006	THREE DIMENSIONAL PRINTER APPARATUS	Pending	6/7/2019	1,646,693	US
PCT	ES5006_PCT	ES5006	ES5006	THREE DIMENSIONAL PRINTER APPARATUS	Done	11/11/2017	PCT/US17159878	PCT
Foreign Patent	ES5018_PCT_CN	ES5018	ES5018	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGNETIC ENERGY TO 3D PRINTED PARTS	Pending	8/23/2019	201880013631X	China
Foreign Patent	ES5018_PCT_EP	ES5018	ES5018	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGNETIC ENERGY TO 3D PRINTED PARTS	Pending	8/16/2019	18 756 979.3	EPO
US Patent	ES5018	ES5018	ES5018	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGNETIC ENERGY TO 3D PRINTED PARTS	Converted	2/24/2017	62463368	US
US Patent	ES5018_PCT_US	ES5018	ES5018	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGNETIC ENERGY TO 3D PRINTED PARTS	Pending	9/26/2019	1,649,679	US
PCT	ES5018_PCT_CN	ES5018	ES5018	ATMOSPHERIC PLASMA CONDUCTION PATHWAY FOR THE APPLICATION OF ELECTROMAGNETIC ENERGY TO 3D PRINTED PARTS	Done	2/19/2018	PCT/US1818629	PCT
Foreign Patent	ES5024_PCT_CN	ES5024	ES5024	THREE DIMENSIONAL PRINTER APPARATUS	Pending	11/15/2019	201880032225	China
Foreign Patent	ES5024_PCT_EP	ES5024	ES5024	THREE DIMENSIONAL PRINTER APPARATUS	Pending	11/15/2019	18 802 059.8	EPO
US Patent	ES5024_PCT_US	ES5024	ES5024	THREE DIMENSIONAL PRINTER APPARATUS	Converted	5/19/2017	62509644	US
US Patent	ES5024_PCT_US	ES5024	ES5024	THREE DIMENSIONAL PRINTER APPARATUS	Pending	11/18/2019	1,661,4600	US
PCT	ES5024_PCT	ES5024	ES5024	THREE DIMENSIONAL PRINTER APPARATUS	Done	5/18/2018	PCT/US1813409	PCT
Foreign Patent	ES5025_PCT_EP	ES5025	ES5025	HYBRID THERMOPLASTIC COMPOSITES WITH LONG AND SHORT FIBER MATERIALS AND NATURAL NANOPARTICLES	Pending	12/10/2019	1,881,2756.7	EPO
Foreign Patent	ES5025_PCT_JP	ES5025	ES5025	HYBRID THERMOPLASTIC COMPOSITES WITH LONG AND SHORT FIBER MATERIALS AND NATURAL NANOPARTICLES	Pending	12/15/2019	2019-588181	Japan
US Patent	ES5025	ES5025	ES5025	HYBRID THERMOPLASTIC COMPOSITES WITH LONG AND SHORT FIBER MATERIALS AND NATURAL NANOPARTICLES	Converted	6/5/2017	62515172	US
US Patent	ES5025_PCT_US	ES5025	ES5025	HYBRID THERMOPLASTIC COMPOSITES WITH LONG AND SHORT FIBER MATERIALS AND NATURAL NANOPARTICLES	Pending	12/13/2019	1,661,91068	US
PCT	ES5025_PCT	ES5025	ES5025	HYBRID THERMOPLASTIC COMPOSITES WITH LONG AND SHORT FIBER MATERIALS AND NATURAL NANOPARTICLES	Done	6/5/2018	PCT/US18186038	US
Foreign Patent	ES5030_PCT_CN	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	7/15/2021		Canada
Foreign Patent	ES5030_PCT_EP	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	5/27/2020	201880076274	China
Foreign Patent	ES5030_PCT_CA	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	6/26/2020	18 882 246.4	EPO
Foreign Patent	ES5030_PCT_JP	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	5/27/2020	2020-546394	Japan
Foreign Patent	ES5030_PCT_JK	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	6/15/2020	0-0-200-701742	Japan
Foreign Patent	ES5030_PCT_SG	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	5/15/2020	1120200452R	Republic of Korea
Foreign Patent	ES5030_PCT_SG_DIV	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	6/18/2021	1202106889W	Singapore
US Patent	ES5030	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Converted	11/27/2017	62910115	US
US Patent	ES5030_PCT_US	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Pending	5/22/2020	1,676,6633	US
PCT	ES5030_PCT	ES5030	ES5030	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOLING ASSEMBLY	Done	11/27/2018	PCT/US18162665	PCT
Foreign Patent	ES5031_PCT_CA	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Pending	8/6/2020	2093086	Canada
Foreign Patent	ES5031_PCT_CN	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Pending	9/24/2020	2019800218888	China
Foreign Patent	ES5031_PCT_CN	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Pending	8/7/2020	19 750 889.9	EPO
Foreign Patent	ES5031_PCT_EP	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Pending	8/7/2020	2020-542788	EPO
Foreign Patent	ES5031_PCT_JP	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Pending	9/17/2020	2020-542788	Japan
US Patent	ES5031	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Converted	2/18/2018	62627950	US
US Patent	ES5031_PCT_US	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Pending	8/6/2020	1,669,7980	US
PCT	ES5031_PCT	ES5031	ES5031	MULTIPLE LAYER FILAMENT AND METHOD OF MANUFACTURING	Done	2/18/2019	PCT/US1917235	PCT
Foreign Patent	ES5032_PCT_CN	ES5032	ES5032	HIGH FREQUENCY ADHESIVE BONDING	Pending	2/11/2021	2019800511506	China
Foreign Patent	ES5032_PCT_EP	ES5032	ES5032	HIGH FREQUENCY ADHESIVE BONDING	Pending	7/29/2019	19 846 493.5	EPO
Foreign Patent	ES5032_PCT_VN	ES5032	ES5032	HIGH FREQUENCY ADHESIVE BONDING	Pending	2/22/2021	1-2021-00669	Viet Nam
US Patent	ES5032	ES5032	ES5032	HIGH FREQUENCY ADHESIVE BONDING	Converted	7/30/2018	62711763	US
US Patent	ES5032_PCT_US	ES5032	ES5032	HIGH FREQUENCY ADHESIVE BONDING	Pending	10/15/2019	1,680,5395	US

PCT	ESS092_PCT	ESS092	ESS092	ESS092	HIGH FREQUENCY ADHESIVE BONDING	Done	7/29/2019	PCT/US/943894	Canada
Foreign Patent	ESS095_CU_MP	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	12/26/2014	2,935,221	
Foreign Patent	ESS095_EP_MP	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	6/24/2016	1,487,993.9	Japan
Foreign Patent	ESS095_JP_DIV	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	7/24/2019	2019-13627	Japan
Foreign Patent	ESS095_RU_MP	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	12/26/2014	10-2016-702977	Korea, Republic of
Foreign Patent	ESS095_MP_MP	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	6/27/2016	20165001989	Japan
US Patent	ESS095_CMT	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	7/19/2019	1,651,719	US
US Patent	ESS095_MP	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Issued	6/24/2016	1,518,081.7	US
US Patent	ESS095_US_PV	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Converted	12/26/2013	1,619,099.7	US
PCT	ESS095_PCT_MP	ESS095	ESS095	ESS095	INNOVATIVE INKJET-DEPOSITED HEATING OF CON FILLED POLYMER COMPOSITES FOR ENHANCED INTERBED BONDING OF FUSED FILAMENT	Pending	12/26/2014	PCT/US/014072441	PCT
Foreign Patent	ESS090_PCT_CN	ESS090	ESS090	ESS090	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Pending	5/28/2021	201960079738	China
Foreign Patent	ESS090_PCT_EP	ESS090	ESS090	ESS090	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Pending	5/28/2021	1,989,075.6	EP
Foreign Patent	ESS090_PCT_JP	ESS090	ESS090	ESS090	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Pending	5/28/2021	1,989,075.6	Japan
Foreign Patent	ESS090_PCT_SK	ESS090	ESS090	ESS090	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Pending	6/11/2021	1,020,217,800.9	Korea, Republic of
US Patent	ESS090_PCT_US	ESS090	ESS090	ESS090	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Converted	11/20/2016	1,627,736.9	US
PCT	ESS090_PCT_MP	ESS090	ESS090	ESS090	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Pending	5/28/2021	1,729,622	US
Foreign Patent	ESS092_PCT_CN	ESS092	ESS092	ESS092	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Done	11/26/2019	PCT/US/163275	PCT
Foreign Patent	ESS092_PCT_EP	ESS092	ESS092	ESS092	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	New	8/12/2021		China
Foreign Patent	ESS092_PCT_JP	ESS092	ESS092	ESS092	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	New	8/12/2021		Japan
US Patent	ESS092_PCT_US	ESS092	ESS092	ESS092	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Issued	2/12/2019	1,627,381.2	US
US Patent	ESS092_MP	ESS092	ESS092	ESS092	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Issued	8/12/2021		US
PCT	ESS092_PCT_MP	ESS092	ESS092	ESS092	PROCESS FOR HYDROPHOBIC MODIFICATION OF NANOCELULOSE DURING MANUFACTURING	Pending	2/6/2020	PCT/US/016982	PCT
Foreign Patent	ESS093_PCT_CN	ESS093	ESS093	ESS093	INFRARED HEATING OF ADDITIVE PRINTED PART	Pending	2/12/2019	1,627,382.5	China
Foreign Patent	ESS093_PCT_EP	ESS093	ESS093	ESS093	INFRARED HEATING OF ADDITIVE PRINTED PART	Issued	2/6/2020		US
Foreign Patent	ESS093_PCT_JP	ESS093	ESS093	ESS093	INFRARED HEATING OF ADDITIVE PRINTED PART	New	8/12/2021		Japan
US Patent	ESS093_PCT_US	ESS093	ESS093	ESS093	INFRARED HEATING OF ADDITIVE PRINTED PART	Issued	2/12/2019	1,627,381.2	US
PCT	ESS093_PCT_MP	ESS093	ESS093	ESS093	INFRARED HEATING OF ADDITIVE PRINTED PART	Pending	2/6/2020	PCT/US/016982	PCT
Foreign Patent	ESS094_PCT_CN	ESS094	ESS094	ESS094	FILAMENT BUFFER	Pending	2/6/2020	PCT/US/016983	PCT
Foreign Patent	ESS094_PCT_CA	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Pending	1/20/2021	3,107,073	Canada
Foreign Patent	ESS094_PCT_CN	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Pending	1/26/2021	201960099354	China
Foreign Patent	ESS094_PCT_EP	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Pending	1/26/2021	1,946,371.9	EP
Foreign Patent	ESS094_PCT_SK	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Pending	1/15/2021	1,120,100,454.8	Singapore
US Patent	ESS094_PCT_US	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Converted	2/9/2021	1,010,202-700,095.6	Korea, Republic of
US Patent	ESS094_MP	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Converted	7/26/2018	1,627,070	US
US Patent	ESS094_MP_PCT	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Pending	2/6/2019	1,628,897.3	US
Foreign Patent	ESS094_EP_DS	ESS094	ESS094	ESS094	HIGH SPEED EXTRUSION 3D PRINTER NOZZLE	Issued	7/24/2019	006,638,524	EUPO
US Patent	ESS095	ESS095	ESS095	ESS095	THREE-DIMENSIONAL PRINTER	Issued	2/1/2019	2,967,908.9	US
PCT	ESS094_PCT_MP	ESS094	ESS094	ESS094	THREE-DIMENSIONAL PRINTER	Issued	7/24/2019	PCT/US/19,43427	PCT
Foreign Patent	ESS095_PCT_CN	ESS095	ESS095	ESS095	PLASMA DEBOND	Issued	10/31/2019		China
Foreign Patent	ESS095_PCT_CA	ESS095	ESS095	ESS095	PLASMA DEBOND	Issued	10/31/2019		Canada
Foreign Patent	ESS095_PCT_CN	ESS095	ESS095	ESS095	NOZZLE ASSEMBLY WITH A SERPENTINE PATH FOR PRINTER HEAD OF 3D	Converted	11/5/2020	1,091,387.26	Taiwan
US Patent	ESS098_MP	ESS098	ESS098	ESS098	NOZZLE ASSEMBLY WITH A SERPENTINE PATH FOR PRINTER HEAD OF 3D	Converted	11/5/2019	1,629,065.9	US
PCT	ESS098_PCT_MP	ESS098	ESS098	ESS098	NOZZLE ASSEMBLY WITH A SERPENTINE PATH FOR PRINTER HEAD OF 3D	Pending	11/5/2020	PCT/US/2001059151	PCT
US Patent	ESS099_MP	ESS099	ESS099	ESS099	COMPOSITE FILAMENT	Terminated	10/31/2019		US
US Patent	ESS090_MP	ESS090	ESS090	ESS090	NOVEL EXTRUSION METHOD	Terminated	10/31/2019		US
Foreign Patent	ESS091_TV	ESS091	ESS091	ESS091	EMITTER AND METHOD FOR PLASMA FUSING OF MATERIALS	Pending	4/30/2021	1,101,158.4	Taiwan
US Patent	ESS091	ESS091	ESS091	ESS091	EMITTER AND METHOD FOR PLASMA FUSING OF MATERIALS	Pending	5/1/2020	1,630,890.1	US
PCT	ESS091_PCT_MP	ESS091	ESS091	ESS091	EMITTER AND METHOD FOR PLASMA FUSING OF MATERIALS	Pending	4/30/2021	PCT/US/130075	PCT
Foreign Patent	ESS092_MP_TW	ESS092	ESS092	ESS092	NOZZLE ASSEMBLY FOR PRINTER HEAD OF 3D PRINTER	Pending	11/5/2020	1,091,387.29	Taiwan
US Patent	ESS092_MP	ESS092	ESS092	ESS092	NOZZLE ASSEMBLY FOR PRINTER HEAD OF 3D PRINTER	Converted	11/5/2019	1,629,066.2	US
PCT	ESS092_PCT_MP	ESS092	ESS092	ESS092	NOZZLE ASSEMBLY FOR PRINTER HEAD OF 3D PRINTER	Pending	11/5/2020	PCT/US/20091154	PCT
US Patent	ESS093_MP	ESS093	ESS093	ESS093	PLASMA FUSING	Terminated	1/25/2019		US
US Patent	ESS094_MP	ESS094	ESS094	ESS094	THREE-DIMENSIONAL PRINTER HEAD INCLUDING AN AUTOMATIC TOUCHDOWN APPARATUS	Issued	3/20/2019	1,635,967.1	US
US Patent	ESS094_US_CMT	ESS094	ESS094	ESS094	THREE-DIMENSIONAL PRINTER HEAD INCLUDING AN AUTOMATIC TOUCHDOWN APPARATUS	Pending	7/21/2021	1,738,658	US
US Patent	ESS096_MP	ESS096	ESS096	ESS096	FILAMENT CONTAINER	Pending	3/29/2019	1,637,013.5	US
PCT	ESS096_PCT_MP	ESS096	ESS096	ESS096	FILAMENT CONTAINER	Pending	2/6/2020	PCT/US/20016979	PCT
Foreign Patent	ESS097_PCT_CA	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Pending	9/17/2020	3,094,935	Canada
Foreign Patent	ESS097_PCT_CN	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Pending	11/23/2020	201960034810X	China
Foreign Patent	ESS097_PCT_EP	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Pending	10/9/2020	1,977,095.5	EP
Foreign Patent	ESS097_PCT_JP	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Pending	10/19/2020	10-2020-702952	Korea, Republic of
Foreign Patent	ESS097_PCT_SK	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Pending	9/16/2020	1,120,090,061.8	Singapore
US Patent	ESS097_PCT_US	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Converted	3/21/2018	1,626,801.9	US
US Patent	ESS097_PCT_US	ESS097	ESS097	ESS097	HIGH SPEED EXTRUSION 3-D PRINTING SYSTEM	Pending	9/21/2020	1,668,885.9	US
Foreign Patent	ESS098_CN_DS	ESS098	ESS098	ESS098	FILAMENT CART	Done	3/20/2019	PCT/US/19,23197	PCT
Foreign Patent	ESS098_EP_DS	ESS098	ESS098	ESS098	FILAMENT CART	Issued	9/4/2019	201939061747	China
Foreign Patent	ESS098	ESS098	ESS098	ESS098	FILAMENT CART	Issued	9/5/2019	006,814,414	EUPO

US Patent	ESS058		FLUORENT CART	ESS058		Issued	3/29/2019	32665715	US
Foreign Patent	ESS065	TV	APPARATUS AND PROCESS FOR SEALING OF GAPS IN PARTS MANUFACTURED VIA 3D PRINTING TECHNIQUES	ESS065		Pending	12/11/2020	109143783	Taiwan
US Patent	ESS065	PCT	APPARATUS AND PROCESS FOR SEALING OF GAPS IN PARTS MANUFACTURED VIA 3D PRINTING TECHNIQUES	ESS065		Converted	7/12/2019	562873519	US
Foreign Patent	ESS067	US, PRV, PCT	SPLIT SPOOL ASSEMBLY FOR A THREE-DIMENSIONAL PRINTER	ESS067		Pending	12/9/2020	109143772	Taiwan
Foreign Patent	ESS067	US, PRV, TV	SPLIT SPOOL ASSEMBLY FOR A THREE-DIMENSIONAL PRINTER	ESS067		Converted	12/9/2019	562955620	US
US Patent	ESS067	US, PRV, PCT	SPLIT SPOOL ASSEMBLY FOR A THREE-DIMENSIONAL PRINTER	ESS067		Pending	12/9/2020	109143662	US
Foreign Patent	ESS069	TV	MODULE, DAMPED X-Y-Z THREE DIMENSIONAL PRINTER CONSTRUCTION	ESS069		Converted	12/9/2019	562945399	Taiwan
US Patent	ESS069	PCT	MODULE, DAMPED X-Y-Z THREE DIMENSIONAL PRINTER CONSTRUCTION	ESS069		Pending	12/8/2020	109143663	US
Foreign Patent	ESS070	TV	GANTRY ASSEMBLY FOR ADDITIVE MANUFACTURING MACHINE	ESS070		Pending	12/9/2020	562945355	Taiwan
US Patent	ESS070	PCT	GANTRY ASSEMBLY FOR ADDITIVE MANUFACTURING MACHINE	ESS070		Converted	12/9/2019	562945355	US
US Patent	ESS070	PCT	GANTRY ASSEMBLY FOR ADDITIVE MANUFACTURING MACHINE	ESS070		Pending	3/25/2020	109143682	US
US Patent	ESS084	US, NP	Dowel Pin	ESS084		Granted	9/30/2020		US
US Patent	ESS085	US, NP	Continuous printing - moving support beds	ESS085		Granted	9/30/2020		US
US Patent	ESS086	US, NP	Venting System	ESS086		Granted	9/30/2020		US
US Patent	ESS087	US, NP	Drawer Mounted Build Trays	ESS087		Granted	9/30/2020		US
US Patent	ESS088	US, NP	Priza Box Isolation	ESS088		Granted	9/30/2020		US
US Patent	ESS089	US, NP	Filament Auto-change	ESS089		Granted	9/30/2020		US
US Patent	ESS091	US, NP	3D PRINTABLE FILAMENTS INCLUDING ANTIPLAQUE SHEATHS	ESS091		Pending	5/21/2020	16879650	US
US Patent	ESS092	US, NP	SYSTEM AND METHOD OF DETECTING FAILED BED ADHESION FOR A THREE-DIMENSIONAL PRINTER	ESS092		Pending	4/28/2020	53016749	US
US Patent	ESS098	PCT	3D PRINTABLE FILAMENTS INCLUDING ANTIPLAQUE SHEATHS	ESS098		Granted	9/30/2020		US
Foreign Patent	ESS099	TV	THREE-DIMENSIONALLY PRINTABLE ANTIPLAQUE FILAMENT	ESS099		Pending	4/26/2021	109143795	Taiwan
US Patent	ESS099	PCT	THREE-DIMENSIONALLY PRINTABLE ANTIPLAQUE FILAMENT	ESS099		Pending	4/30/2021	110115816	US
Foreign Patent	ESS099	TV	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOL ASSEMBLY	ESS099		Pending	5/1/2020	53018879	Taiwan
US Patent	ESS099	PCT	TOOL ASSEMBLY FOR MANUFACTURING PARTS AND A METHOD OF PRODUCING A TOOL ASSEMBLY	ESS099		Pending	4/30/2021	109143795	US
US Patent	ESS101	US, NP	PRINTABLE, REUSABLE, MODULE MASK SYSTEM	ESS101		Abandoned	5/6/2020	53020827	US
US Patent	ESS102	US, NP	FLAT-PACK FACEMASK	ESS102		Abandoned	5/8/2020	53022082	US
Foreign Patent	ESS104	TV	X-ARM CARTRIDGE ASSEMBLY	ESS104		New	9/21/2021		Taiwan
US Patent	ESS104	US, NP	X-ARM CARTRIDGE ASSEMBLY	ESS104		Pending	9/21/2020	17026465	US
Foreign Patent	ESS105	TV	TOOLING FORWARD REON A 3D PRINTED TOOLING SCAFFOLD	ESS105		New	6/8/2021	110120755	Taiwan
US Patent	ESS105	PCT	TOOLING FORWARD REON A 3D PRINTED TOOLING SCAFFOLD	ESS105		Pending	6/9/2020	53036707	US
US Patent	ESS106	PCT	3D PRINTED TOOLING SCAFFOLD	ESS106		Pending	6/9/2020	53036707	US
US Patent	ESS106	PCT	TOOLING FORWARD REON A 3D PRINTED TOOLING SCAFFOLD	ESS106		Pending	6/9/2020	53036707	US
US Patent	ESS106	PCT	ADAPTIVE TOOLPATH FOR PRODUCING MATERIAL EXTRUSION 3D PRINTED MECHANICAL TESTING SPECIMENS	ESS106		Pending	6/30/2020	53046185	US
US Patent	ESS106	PCT	ADAPTIVE TOOLPATH FOR PRODUCING MATERIAL EXTRUSION 3D PRINTED MECHANICAL TESTING SPECIMENS	ESS106		Pending	6/30/2021	109143794	US
US Patent	ESS108	US, NP	OPTIMIZING PRINT PROCESS PARAMETERS IN 3D PRINTING	ESS108		Pending	8/11/2020	53044151	US
US Patent	ESS109	US, NP	NOZZLE FOR PRODUCING EXTRUSION 3D PRINTED MATERIALS	ESS109		Pending	8/31/2020	53072556	US
US Patent	ESS110	US, NP	Scale conversion process for systems analysis and optimization	ESS110		Pending	9/22/2020	53081640	US
US Patent	ESS120	US, NP	EXTRUSION DIE INCLUDING A MANDREL	ESS120		Pending	2/2/2021	53146888	US
US Patent	ESS136	US, NP	FORCED CONNECTION THERMAL HISTORY MANAGEMENT SYSTEM	ESS136		Pending	4/13/2021	53143708	US
US Patent	ESS140	US, NP	ADAPTIVE SUPPORT MATERIAL FOR DIRECTED ENERGY DEPOSITION (DED) ADDITIVE MANUFACTURING	ESS140		Pending	1/29/2021	53143709	US
US Patent	ESS140	P2	HOT TOOL CONTROL SMOOTHING FOR MATERIAL EXTRUSION 3D PRINTED PARTS	ESS140		Pending	1/29/2021	53143706	US
US Patent	ESS140	US, NP	HOT TOOL CONTROL SMOOTHING FOR MATERIAL EXTRUSION 3D PRINTED PARTS	ESS140		New	3/31/2021		US
US Patent	ESS142	US, NP	COMPOSITE BUILD SURFACE FOR DIRECTED ENERGY DEPOSITION (DED) ADDITIVE MANUFACTURING	ESS142		Pending	1/29/2021	53143861	US
US Patent	ESS142	P2	BUILD SUBSTRATE FOR DIRECTED ENERGY DEPOSITION (DED) ADDITIVE MANUFACTURING	ESS142		Pending	2/11/2021	53148360	US
US Patent	ESS143	US, NP	CONICAL COLD WIRE FEEDSTOCK FOR DIRECTED ENERGY DEPOSITION (DED) ADDITIVE MANUFACTURING	ESS143		Pending	1/29/2021	53143460	US
US Patent	ESS143	P2	COLD WIRE FEEDSTOCK FOR DIRECTED ENERGY DEPOSITION (DED) ADDITIVE MANUFACTURING	ESS143		Pending	2/12/2021	53148999	US
US Patent	ESS148	US, NP	ROTATABLE RECEIVER FOR A THREE-DIMENSIONAL PRINTER HEAD	ESS148		Pending	4/27/2021	53160266	US
US Patent	ESS149	US, NP	VERTICAL HEIGHT ADJUSTMENT SYSTEM FOR A THREE-DIMENSIONAL PRINTER HEAD	ESS149		Pending	4/27/2021	53160267	US
US Patent	ESS151	US, NP	TOPOGRAPHIC COMPENSATION FOR A THREE-DIMENSIONAL DUAL PRINTER	ESS151		Pending	4/28/2021	53160998	US
US Patent	ESS152	US, NP	THREE-DIMENSIONAL PRINTER COMPRISING FIRST AND SECOND PRINT HEADS AND FIRST, SECOND, AND THIRD DIVIDERS	ESS152		Pending	4/27/2021	112741843	US
US Patent	ESS153	US, NP	Feed System and Buffer	ESS153		Terminated	4/27/2021		US
US Patent	ESS153	US, NP	THREE-DIMENSIONAL PRINTER COMPRISING AT LEAST ONE WIRE ASSEMBLY	ESS153		Pending	4/27/2021	53160437	US
US Patent	ESS154	US, NP	THREE-DIMENSIONAL PRINTER COMPRISING A CALIBRATION SWITCH AND A METHOD OF CALIBRATING THE SAME	ESS154		Abandoned	4/27/2021	53160438	US
US Patent	ESS155	US, NP	Headump VenturiPosition Filter	ESS155		Abandoned	4/27/2021		US
US Patent	ESS156	US, NP	FOUR MODE ADDITIVE MANUFACTURING MACHINE	ESS156		Pending	4/23/2021	11273857	US
US Patent	ESS157	US, NP	Run Out Sensor	ESS157		Terminated	5/6/2021		US
US Patent	ESS158	US, NP	DETECTING LACK OF ADHESION OF A BUILD PLATE TO A SUPPORT BED	ESS158		Pending	6/18/2021	117351681	US

US Patent	ESS159		ESS159	Dual Head Control	Granted	7/11/2021			US
US Patent	ESS160	US D	ESS160	GRAPHICAL USER INTERFACE FOR PRESENTATION ON A DISPLAY SCREEN OR PORTION THEREOF	Pending	4/27/2021	29780995		US
US Patent	ESS161		ESS161	Nozzle Pre-Heat	Pending	4/28/2021	63180971		US
US Patent	ESS167	US D	ESS167	GRAPHICAL USER INTERFACE FOR PRESENTATION ON A DISPLAY SCREEN OR PORTION THEREOF	Pending	4/27/2021	29780999		US
US Patent	ESS168		ESS168	3D PRINTER SYSTEM INCLUDING HARDWARE ABSTRACTION LAYER	Pending	4/28/2021	63180932		US
US Patent	ESS182		ESS182	JAM Value Banking	New	7/21/2021			US
US Patent	ESS182	PRV	ESS182	METHOD AND SYSTEM FOR TRANSFERRING FILES TO AN AIR-GAPPED THREE-DIMENSIONAL PRINTER	Pending	6/15/2021	63210785		US
US Patent	ESS187		ESS187	Flament Buffer	New	8/14/2021			US
US Patent	ESS227		ESS227	Head	New	7/30/2021			US
US Patent	ESS228		ESS228	Wire Pre-Heating	New	7/30/2021			US
US Patent	ESS229		ESS229	Support Bed	Abandoned				US
US Patent	ESS230		ESS230	Environmental Chamber Control	New	7/30/2021			US
US Patent	ESS231		ESS231	Wire Feeding	New	7/30/2021			US
US Patent	ESS232		ESS232	Process Controls	New	7/30/2021			US
US Patent	ESS233		ESS233	Reduction of wastage - preventing potato chipping	New	7/30/2021			US
US Patent	ESS234		ESS234	Feeding Wire Traces	Abandoned				US
US Patent	ESS235		ESS235	Wire Diameter Adjustment Mechanisms	Pending	7/22/2021	63224844		US
US Patent	ESS237		ESS237	ADDITIVE CHEMISTRIES FOR ENABLING IN-SITU CURING OF THERMOSET RESINS FOR ADDITIVE MANUFACTURING PROCESSES	Pending	7/22/2021	63224842		US
US Patent	ESS241		ESS241	THERMOSET DEPOSITION SYSTEM	Pending	9/2/2021			US
US Patent	ESS242		ESS242	Chamber Catalytic Converter	New	9/2/2021			US
Foreign Patent	TR1101_PCT_CA		TR1101	THREE DIMENSIONAL PRINT METHOD AND PART	Pending	4/23/2020	20801150		Canada
Foreign Patent	TR1101_PCT_CN		TR1101	THREE DIMENSIONAL PRINT METHOD AND PART	Pending	6/3/2020	201889078397X		China
Foreign Patent	TR1101_PCT_EP		TR1101	THREE DIMENSIONAL PRINT METHOD AND PART	Pending	5/22/2020	18 870 769 9		EP
Foreign Patent	TR1101_PCT_SG		TR1101	THREE DIMENSIONAL PRINT METHOD AND PART	Pending	4/20/2020	11202003579R		Singapore
Foreign Patent	TR1101_PCT_US		TR1101	THREE DIMENSIONAL PRINT METHOD AND PART	Pending	4/23/2020	16758716		United States of America
US Patent	TR1101_PCT		TR1101	THREE DIMENSIONAL PRINT METHOD AND PART	Converted	10/23/2017	62575810		US
US Patent	TR1103_IP		TR1103	Integrated Attachment and Suspension Feature for 3D Printed Prosthetic Sockets	Done	10/23/2018	9CT/US18/57084		PCT
US Patent	TR1103_IP		TR1103		New	4/15/2021			US

SCHEDULE 2

TRADEMARKS

[See attached.]

US Trademark	EMS-108	EMS108	STE (letters only)	Terminated	10/1/2021		US
US Trademark	EMS109	EMS109	STE (logo)	New	12/15/2021		US
US Trademark	EMS110	EMS110	STE (phrase)	Terminated	12/15/2021		US
US Trademark	EMS111	EMS111	HSE	Terminated	3/31/2018		US
US Trademark	EMS112	EMS112	HSE 180	Terminated	3/31/2018		US
US Trademark	EMS113	EMS113	HSE Fishface	Terminated	12/15/2021		US
US Trademark	EMS114	EMS114	HSE (stylized logo)	New	12/15/2021		US
US Trademark	EMS005	EMS005	Fuse	Granted	11/24/2016		US
US Trademark	EMS006	EMS006	Fuse Filament	Granted	11/24/2016		US
US Trademark	EMS007	EMS007	Fuse Process	Granted	11/24/2016		US
Foreign Trademark	ESS016_CN_TM	ESS016	Fishface	Registered	12/5/2019	-42847297	China
Foreign Trademark	ESS016_CN_TM_7	ESS016	Fishface	Registered	12/9/2019	-42909294	China
Foreign Trademark	ESS016_CN_TM_9	ESS016	Fishface	Registered	10/10/2019	018 134-994	China
Foreign Trademark	ESS016_CN_TM_11	ESS016	Fishface	Registered	10/8/2019	-40201921876V	Singapore
Foreign Trademark	ESS016_CN_TM_12	ESS016	Fishface	Registered	2/11/2017	87320681	US
Foreign Trademark	ESS017_CN_TM_7	ESS017	Fusebox	Registered	5/24/2021	56309324	China
Foreign Trademark	ESS017_CN_TM_9	ESS017	Fusebox	Granted	6/30/2021		China
Foreign Trademark	ESS017_CN_TM_11	ESS017	Fusebox	Registered	2/11/2017	87320665	US
Foreign Trademark	ESS020_CN_TM	ESS020	ESSENTIUM	New	6/30/2021	-42035003	Canada
Foreign Trademark	ESS020_CN_TM_7	ESS020	ESSENTIUM	Registered	11/1/2019		China
Foreign Trademark	ESS020_CN_TM_9	ESS020	ESSENTIUM	Registered	11/25/2019	-42545728	China
Foreign Trademark	ESS020_CN_TM_11	ESS020	ESSENTIUM	Registered	11/6/2019	-42140773	China
Foreign Trademark	ESS020_CN_TM_12	ESS020	ESSENTIUM	Registered	8/25/2020	-49199416	China
Foreign Trademark	ESS020_CN_TM_14	ESS020	ESSENTIUM	Pending	9/30/2019	018130656	China
Foreign Trademark	ESS020_CN_TM_15	ESS020	ESSENTIUM	Registered	9/18/2019	-40201920219Q	Singapore
Foreign Trademark	ESS020_CN_TM_16	ESS020	ESSENTIUM	Pending	12/30/2020	109093251	Taiwan
Foreign Trademark	ESS020_CN_TM_17	ESS020	ESSENTIUM	Registered	3/17/2017	87375750	US
Foreign Trademark	ESS021_CN_TM_42	ESS021	ESSENTIUM BUILD YOUR WORLD	Terminated	4/9/2021		China
Foreign Trademark	ESS021_CN_TM_43	ESS021	ESSENTIUM BUILD YOUR WORLD	Registered	3/17/2017	87375669	US
Foreign Trademark	ESS022_CN_TM_17	ESS022	ESSENTIUM FILAMENT	Pending	5/24/2021	56296777	China
Foreign Trademark	ESS022_CN_TM_18	ESS022	ESSENTIUM FILAMENT	Registered	3/17/2017	87375683	US
Foreign Trademark	ESS023_CN_TM	ESS023	MAATERIALS GENIUS	Registered	3/17/2017	87375717	US
Foreign Trademark	ESS028_CN_TM_17	ESS028	Fishface Filament	Pending	5/24/2021	56301130	China
Foreign Trademark	ESS028_CN_TM_18	ESS028	Fishface Filament	Registered	4/11/2018	87872464	US
Foreign Trademark	ESS029_CN_TM_11	ESS029	ESSENTIUM DRYBOX	Pending	5/24/2021	56296365	China
Foreign Trademark	ESS029_CN_TM_12	ESS029	ESSENTIUM DRYBOX	Pending	3/18/2020	888198976	US
Foreign Trademark	ESS029_CN_TM_13	ESS029	ESSENTIUM DRYBOX	Registered	12/6/2019	-42885448	China
Foreign Trademark	ESS029_CN_TM_14	ESS029	ESSENTIUM DRYBOX	Registered	12/9/2019	-42909322	China
Foreign Trademark	ESS029_CN_TM_15	ESS029	ESSENTIUM DRYBOX	Registered	12/6/2019	018163942	China
Foreign Trademark	ESS029_CN_TM_16	ESS029	ESSENTIUM DRYBOX	Registered	12/6/2019	-40201926581Q	Singapore
Foreign Trademark	ESS036_CN_TM	ESS036	HSE	Pending	12/30/2020	109093252	Taiwan
Foreign Trademark	ESS036_CN_TM_7	ESS036	HSE	Registered	11/9/2018	88188657	US
Foreign Trademark	ESS036_CN_TM_9	ESS036	HSE	Registered	11/9/2018	88188657	US
Foreign Trademark	ESS036_CN_TM_11	ESS036	HSE	Registered	11/9/2018	88188657	US
Foreign Trademark	ESS036_CN_TM_12	ESS036	HSE	Registered	11/6/2019	-42148559	China
Foreign Trademark	ESS036_CN_TM_13	ESS036	HSE	Registered	11/6/2019	-42186643	China
Foreign Trademark	ESS039_CN_TM_7	ESS039	HIGH SPEED EXTRUSION	Registered	9/30/2019	018130550	China
Foreign Trademark	ESS039_CN_TM_9	ESS039	HIGH SPEED EXTRUSION	Registered	9/18/2019	-40201920218W	Singapore
Foreign Trademark	ESS039_CN_TM_11	ESS039	HIGH SPEED EXTRUSION	Pending	12/30/2020	109093253	Taiwan
Foreign Trademark	ESS039_CN_TM_12	ESS039	HIGH SPEED EXTRUSION	Pending	11/13/2018		US
Foreign Trademark	ESS041_CN_TM_11	ESS041	Arbox	Abandoned	11/13/2018	88188658	US
Foreign Trademark	ESS041_CN_TM_12	ESS041	Arbox	Pending	6/1/2021	56563860	China
Foreign Trademark	ESS041_CN_TM_13	ESS041	Arbox	Pending	6/1/2021	56563074	China
Foreign Trademark	ESS041_CN_TM_14	ESS041	Arbox	Pending	2/11/2019	88285473	US
Foreign Trademark	ESS046_CN_TM_7	ESS046	hozie	Pending	6/1/2021	56565099	China
Foreign Trademark	ESS046_CN_TM_9	ESS046	hozie	Pending	6/1/2021	56563885	China
Foreign Trademark	ESS046_CN_TM_11	ESS046	hozie	Pending	2/11/2019	88285497	US
Foreign Trademark	ESS046_CN_TM_12	ESS046	hozie	Pending	6/1/2021	56565456	China
Foreign Trademark	ESS055_CN_TM_12	ESS055	ESSENTIUM Filament Care System	Pending	6/1/2021	56565078	China
Foreign Trademark	ESS055_CN_TM_17	ESS055	ESSENTIUM Filament Care System	Pending	6/1/2021		China

TRADEMARK

Foreign Trademark	ES5005_CN_TM_7		ES5005	ESSENTIUM Filament Care System	Pending	6/1/2021	565-6255	China
US Trademark	ES5005		ES5005	ESSENTIUM FILAMENT CARE SYSTEM	Allowed	2/1/2019	88285321	US
Foreign Trademark	ES5062_CN_TM_17		ES5062	Industrial Additive	Pending	6/1/2021	565-6558	China
Foreign Trademark	ES5062_CN_TM_40		ES5062	Industrial Additive	Pending	6/1/2021	565-6567	China
Foreign Trademark	ES5062_CN_TM_42		ES5062	Industrial Additive	Pending	6/1/2021	565-39216	China
Foreign Trademark	ES5062_CN_TM_7		ES5062	Industrial Additive	Pending	6/1/2021	565-63117	China
Foreign Trademark	ES5063_CN_TM_17		ES5063	ESSENTIUM Industrial Additive	Pending	11/8/2019	888-96853	US
Foreign Trademark	ES5063_CN_TM_40		ES5063	ESSENTIUM Industrial Additive	Pending	6/1/2021	565-70494	China
Foreign Trademark	ES5063_CN_TM_42		ES5063	ESSENTIUM Industrial Additive	Pending	6/1/2021	565-63389	China
Foreign Trademark	ES5063_CN_TM_7		ES5063	ESSENTIUM Industrial Additive	Pending	6/1/2021	565-64286	China
US Trademark	ES5063		ES5063	ESSENTIUM Industrial Additive	Pending	11/8/2019	888-96490	US
US Trademark	ES5064		ES5064	stylized logo for E Essembium Industrial Additive	Allowed	11/8/2019	888-94981	US
Foreign Trademark	ES5072_CN_TM		ES5072	E (stylized logo - black)	Registered	2/27/2020	442-0232	China
Foreign Trademark	ES5072_CN_TM_11		ES5072	E (stylized logo - black)	Registered	2/27/2020	442-0231	China
Foreign Trademark	ES5072_CN_TM_17		ES5072	E (stylized logo - black)	Pending	2/24/2020	44182644	China
Foreign Trademark	ES5072_CN_TM_40		ES5072	E (stylized logo - black)	Registered	2/19/2020	4020200294X	BPO
Foreign Trademark	ES5072_CN_TM_42		ES5072	E (stylized logo - black)	Registered	2/19/2020	4020200293V	Singapore
Foreign Trademark	ES5072_CN_TM_7		ES5072	E (stylized logo - black)	Pending	12/30/2020	109093254	Taiwan
US Trademark	ES5072		ES5072	E (stylized logo)	Pending	1/28/2020	88776061	US
Foreign Trademark	ES5092_CN_TM_11		ES5092	E (stylized logo - color)	Registered	2/27/2020	442-0229	China
Foreign Trademark	ES5092_CN_TM_17		ES5092	E (stylized logo - color)	Pending	2/24/2020	44191633	China
Foreign Trademark	ES5092_CN_TM_7		ES5092	E (stylized logo - color)	Registered	2/27/2020	442-0230	China
Foreign Trademark	ES5092_BP_TM	ES5072	ES5092	E (stylized logo - color)	Registered	2/19/2020	101819813	BPO
Foreign Trademark	ES5092_SG_TM		ES5092	E (stylized logo - color)	Registered	2/14/2020	4020200294X	Singapore
Foreign Trademark	ES5095_CA_TM		ES5095	EssembiumVX	Pending	7/20/2021	2121887	Canada
Foreign Trademark	ES5095_SG_TM		ES5095	ESSENTIUM VRX	Pending	7/20/2021	40202117431	Singapore
US Trademark	ES5095		ES5095	EssembiumVX	Pending	5/21/2021	90726842	US
US Trademark	ES5096		ES5096	Essembium	Pending	6/3/2021	90731738	US
US Trademark	ES5111_US_TM		ES5111	ESSENTIUM HSE 1805	Pending	9/9/2020	90168613	US
Foreign Trademark	ES5114_CN_TM_7		ES5114	ESSENTIUM	Pending	1/4/2019	33918051	China
Foreign Trademark	ES5115_CN_TM_7		ES5115	ESSENTIUM	Registered	3/25/2020	44873899	China
US Trademark	ES5117_US_TM		ES5117	ESSENTIUM HSE	Pending	9/9/2020	90168659	US
US Trademark	ES5128_US_TM		ES5128	BUILDING THE NEXT GENERATION OF ESSENTIAL MATERIALS	Abandoned	1/29/2014		US
Foreign Trademark	ES5144_CN_TM_11		ES5144	Essembium (Transiteration 1)	Pending	3/25/2021	546-61023	China
Foreign Trademark	ES5144_CN_TM_17		ES5144	Essembium (Transiteration 1)	Pending	3/25/2021	546-62910	China
Foreign Trademark	ES5144_CN_TM_7		ES5144	Essembium (Transiteration 1)	Pending	3/25/2021	546-65548	China
Foreign Trademark	ES5145_CN_TM_11		ES5145	Essembium (Transiteration 2)	Pending	3/25/2021	546-35866	China
Foreign Trademark	ES5145_CN_TM_17		ES5145	Essembium (Transiteration 2)	Pending	3/25/2021	546-35905	China
Foreign Trademark	ES5145_CN_TM_7		ES5145	Essembium (Transiteration 2)	Pending	3/25/2021	546-61057	China
Foreign Trademark	ES5162_US_TM		ES5162	FLASHFUSE	Pending	4/8/2021	90632737	US
Foreign Trademark	ES5186_CA_TM		ES5186	ESSENTIUM VRX	Pending	7/20/2021	21218830	Canada
Foreign Trademark	ES5186_CN_TM_40		ES5186	ESSENTIUM VRX	Pending	7/20/2021		China
Foreign Trademark	ES5186_CN_TM_42		ES5186	ESSENTIUM VRX	Pending	6/30/2021		China
Foreign Trademark	ES5186_SG_TM		ES5186	ESSENTIUM VRX	Pending	7/20/2021	4020211724R	Singapore
Foreign Trademark	ES5185_CN_TM_40		ES5185	ESSENTIUM VRX	New	6/30/2021	21218832	China
Foreign Trademark	ES5185_CN_TM_42		ES5185	ESSENTIUM VRX	New	6/30/2021		China
Foreign Trademark	ES5185_SG_TM		ES5185	ESSENTIUM VRX (ogo two line)	Pending	7/20/2021	4020211743P	Singapore
US Trademark	ES5226_US_TM		ES5226	Phonetic Tooling	New	8/6/2021		US
US Trademark	TR104		TR104	TRIFUSION	Pending	3/23/2020	888-3965	US

TRADEMARK