

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT6221752

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
NANCI HARDWICK	03/05/2018
WAYNE HUBBARD	03/01/2018
CHASE COX	03/08/2018
NATHANIEL VARANO	03/24/2018
ANITA T. BROACH	03/01/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	AEROPROBE CORPORATION
<b>Street Address:</b>	200 TECHNOLOGY DRIVE
<b>City:</b>	CHRISTIANSBURG
<b>State/Country:</b>	VIRGINIA
<b>Postal Code:</b>	24073
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16760829
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>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.</i>	
<b>Phone:</b>	5406058070
<b>Email:</b>	michele.mayberry@nrviplaw.com
<b>Correspondent Name:</b>	NEW RIVER VALLEY IP LAW, P.C.
<b>Address Line 1:</b>	P.O. BOX 10944
<b>Address Line 4:</b>	BLACKSBURG, VIRGINIA 24062
<b>ATTORNEY DOCKET NUMBER:</b>	MELD-30-US
<b>NAME OF SUBMITTER:</b>	ASHLEY M. GATES
<b>SIGNATURE:</b>	/Ashley M. Gates/
<b>DATE SIGNED:</b>	07/28/2020
<b>Total Attachments: 4</b>	
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**WORLDWIDE ASSIGNMENT**

WHEREAS, I, a below named inventor, (hereinafter Assignor), have made invention(s) described in the following patent application(s):

**ADDITIVE FRICTION STIR MANUFACTURING SYSTEM AND MATERIAL COMPOSITIONS, COMPOSITES AND STRUCTURES**

for which U.S. Provisional Application No. 62/579,483 was filed on Oct. 31, 2017, and for which later filed applications **PCT/US18/58470 (AERO-30-PCT) filed on Oct. 21, 2018**  
16/760,829 (MELD-30-US) filed on April 30, 2020  
was/were filed on \_\_\_\_\_, respectively  
(I hereby authorize the application numbers and filing dates to be inserted when known);

WHEREAS, **AEROPROBE CORPORATION**, a corporation of the Commonwealth of Virginia, with an address at 200 Technology Drive, Christiansburg, VA 24073 USA (hereinafter Assignee), is desirous of securing the entire right, title, and interest in and to these inventions in all countries throughout the world, and in and to these patent applications and all national patent applications based on them or claiming benefit of priority to them throughout the world, and any Letters Patent to be issued upon all applications based on these applications or applications claiming benefit of priority to them throughout the world;

NOW THEREFORE, for good and valuable consideration, the receipt of which from Assignee is hereby acknowledged, I as Assignor hereby sell, assign, transfer, and set over unto Assignee, its lawful successors and assigns, the entire worldwide right, title, and interest in and to, including the right to sue for past infringement, the above-referenced inventions, in and to the above-referenced applications, in and to any continuation, division, continuation-in-part, reexamination, reissue, renewal, substitute, or extension thereof or any legal equivalent thereof, and in and to all Letters Patents of all countries throughout the world that might be granted thereon, including the right to claim priority to the above-referenced applications and the right to be granted a patent in any country throughout the world and in all PCT Contracting States, and I hereby authorize and request all officials of all foreign countries whose duty it is to issue patents on applications as described above, to issue all Letters Patent for these inventions to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I HEREBY covenant that I have the full right to convey the interest assigned by this Assignment, and I have not executed and will not execute any agreement in conflict with this Assignment;

AND, I HEREBY further covenant and agree that I will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to me respecting these inventions and applications, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that might be necessary or desirable to perfect the title to these inventions and applications in Assignee, its successors and assigns, execute all continuation, division, continuation-in-part, reexamination, reissue, renewal, substitute, or extension applications, make all rightful oaths, and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for these inventions and applications in all countries, it being

understood that any expense incident to the execution of such papers shall be borne by Assignee, its successors, and assigns.

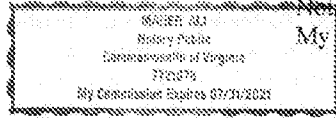
IN TESTIMONY WHEREOF, I have hereunto set my hand:

Date: 3-5-2018

By: *Nanci Hardwick*  
Inventor: **Nanci Hardwick**

County of Montgomery )  
State of Virginia ) ss.  
Subscribed/sworn to before me on 3/5/18

*Melvin C. Cio*  
Notary Public  
My Commission Expires: 7/31/20



Date: \_\_\_\_\_

By: \_\_\_\_\_  
Inventor: **Wayne Hubbard**

County of \_\_\_\_\_ )  
State of \_\_\_\_\_ ) ss.  
Subscribed/sworn to before me on \_\_\_\_\_

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Inventor: **Chase Cox**

County of \_\_\_\_\_ )  
State of \_\_\_\_\_ ) ss.  
Subscribed/sworn to before me on \_\_\_\_\_

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

enforce proper patent protection for these inventions and applications in all countries, it being understood that any expense incident to the execution of such papers shall be borne by Assignee, its successors, and assigns.

IN TESTIMONY WHEREOF, I have hereunto set my hand:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Inventor: **Nanci Hardwick**

County of \_\_\_\_\_ )  
State of \_\_\_\_\_ ) ss.  
Subscribed/sworn to before me on \_\_\_\_\_

Notary Public  
My Commission Expires: \_\_\_\_\_

Date: 3-1-18

By: *Wayne Hubbard*  
Inventor: **Wayne Hubbard**

County of Montgomery )  
State of Virginia ) ss.  
Subscribed/sworn to before me on March 1, 2018

Notary Public  
My Commission Expires: \_\_\_\_\_



BETHONY ANN MAXFIELD  
NOTARY PUBLIC 7742485  
COMMONWEALTH OF VIRGINIA

Date: 3-8-18

By: *Chase Cox*  
Inventor: **Chase Cox**

MY COMMISSION EXPIRES NOVEMBER 30, 2021

County of Montgomery )  
State of Virginia ) ss.  
Subscribed/sworn to before me on March 8, 2018

Notary Public  
My Commission Expires: Sept 30, 2018

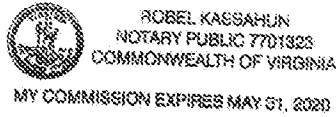
BILIE CONNER LINCOLN  
NOTARY PUBLIC 156924  
COMMONWEALTH OF VIRGINIA  
MY COMMISSION EXPIRES 09-30-2018

Date: 03/29/2018

By: *Nathaniel Varano*  
Inventor: **Nathaniel Varano**

County of Montgomery )  
State of Virginia ) ss.  
Subscribed/sworn to before me on 03/29/2018

*Robel Kassahun*  
Notary Public  
My Commission Expires: May 31, 2020

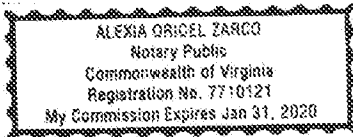


Date: 3/1/2018

By: *A. Trajicovska-Broach*  
Inventor: **Anita T. Broach**

County of Montgomery )  
State of Virginia ) ss.  
Subscribed/sworn to before me on 03/01/2018

*Ali Zou*  
Notary Public  
My Commission Expires: Jan 3, 2020



Date: 3-5-2018

By: *Nanci Hardwick*  
Name/Title: **Nanci Hardwick  
Chief Executive Officer**  
For Assignee: **AEROPROBE CORPORATION**

County of Montgomery )  
State of Virginia ) ss.  
Subscribed/sworn to before me on 5/5/18

*Michele Ali*  
Notary Public  
My Commission Expires: 7/31/21

