

## PATENT ASSIGNMENT COVER SHEET

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| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT  |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT  |
| <b>CONVEYING PARTY DATA</b>   |   |
| <b>Name</b>   | <b>Execution Date</b>   |
| BRADLEY R RINGEISEN   | 12/14/2018  |
| PETER K WU  | 12/12/2018  |
| <b>RECEIVING PARTY DATA</b>   |   |
| <b>Name:</b>  | The Government of the United States, as respresented by the Secretary of the Navy |
| <b>Street Address:</b>  | 875 N Randolph St   |
| <b>Internal Address:</b>  | Suite 1425  |
| <b>City:</b>  | Arlington   |
| <b>State/Country:</b>   | VIRGINIA  |
| <b>Postal Code:</b>   | 22203   |
| <b>PROPERTY NUMBERS Total: 1</b>  |   |
| <b>Property Type</b>  | <b>Number</b>   |
| Application Number:   | 16220505  |
| <b>CORRESPONDENCE DATA</b>  |   |
| <b>Fax Number:</b>  | (202)404-7380   |
| <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>   | 202-404-1556  |
| <b>Email:</b>   | joe.grunkemeyer@nrl.navy.mil  |
| <b>Correspondent Name:</b>  | JOSEPH T GRUNKEMEYER  |
| <b>Address Line 1:</b>  | 4555 OVERLOOK AVE, SW   |
| <b>Address Line 2:</b>  | CODE 1008.2   |
| <b>Address Line 4:</b>  | WASHINGTON, D.C. 20375  |
| <b>ATTORNEY DOCKET NUMBER:</b>  | 106790-US2  |
| <b>NAME OF SUBMITTER:</b>   | JOSEPH T GRUNKEMEYER  |
| <b>SIGNATURE:</b>   | /Joseph T Grunkemeyer/  |
| <b>DATE SIGNED:</b>   | 01/22/2019  |
| <b>Total Attachments: 8</b>   |   |
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source=106790-US2\_2019-01-22\_assignment#page8.tif

**ASSIGNMENT BY INVENTOR (UNITED STATES PATENTS)**

**THIS ASSIGNMENT**, made by Bradley R. Ringeisen (hereinafter referred to as Assignor), residing at 6734 Catskill Rd, Lorton, Virginia 22079;

**WHEREAS**, Assignor, while employed by the Government of the United States, has invented certain new and useful improvements in A DIRECT-WRITE PULSED-LASER INDUCED BALLISTIC MICRO/NANO PARTICLES IMPLANTATION TECHNIQUE, set forth in a Provisional application for Letters Patent of the United States, filed on December 15, 2017 as U.S. Application No. 62/599171, and in LASER INDUCED BALLISTIC PARTICLE IMPLANTATION TECHNIQUE, set forth in a Patent application for Letters Patent of the United States, filed on December 14, 2018 as U.S. Application No. 16/220,505; and

**WHEREAS**, The Government of the United States of America, as represented by the Secretary of the Navy, a Federal Agency (hereinafter referred to as the Government), is desirous of acquiring the entire right, title and interest in and to said inventions and said Application(s) for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefor and thereon;

**WHEREAS**, by acquiring the Assignor's entire right, title, and interest in and to the invention the Government will be enabled to license the invention and share the income from the licensing with the Assignor as allowed by law;

**WHEREAS**, the conditions under which the invention was made are such as to entitle the Government under Paragraph 1(a) of Executive Order 10096, to the Assignor's entire right, title, and interest therein, including the foreign rights; and

**WHEREAS**, as to foreign rights, it is the policy of the Government to obtain an option to exercise such rights;

**NOW, THEREFOR**, in consideration of the premises and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignor has assigned, transferred and set over, and by these presents does assign, transfer and set over, unto the Government, its

successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and application(s) for Letters Patent, and in and to any and all direct and indirect divisions, continuations and continuations-in-part of said application(s), and any and all Letters Patent in the United States which may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, the same to be held and enjoyed by the Government, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignor, had this assignment not been made.

**AND** for the same consideration, Assignor hereby represents and warrants to the Government, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights, titles and/or interests that have arisen to the Government under law or that have already been transferred to the Government, Assignor is the sole and lawful owner of the entire right, title and interest in and to the said inventions and application(s) for Letters Patent above-mentioned, and that the same are unencumbered and that Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth.

**AND** for the same consideration, Assignor hereby covenants and agrees to and with the Government, its successors, legal representatives and assigns, that Assignor will sign all papers and documents, take all lawful oaths and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of any Letters Patent and applications for Letters Patent for said inventions in the U.S. or any foreign country, without charge to the Government, its successors, legal representatives and assigns, whenever counsel of the Government, or counsel of its successors, legal representatives and assigns, shall advise: that any proceeding in connection with said inventions, or said Patent application(s) for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of any application(s) for Letters Patent, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable.

**AND** Assignor hereby requests the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of the Government, its successors, legal representatives and assigns.

**AND** the Assignor does hereby also grant unto the Government, the option to take the Assignor' entire right, title, and interest in the invention and all patent applications or other forms of protection thereon in all countries foreign to the United States in which the Government may file, or cause to be filed, applications for Letters Patent or other forms of protection, without payment of any consideration; provided, however, that this grant of an option to take foreign rights in the invention, or applications or other forms of protection thereon, shall have force and effect only as to such applications for which a decision to file in foreign countries is made within eight months of the filing date of any application for United States Letters Patent and/or any provisional application covering the invention, or within eight months from the declassification of the invention, whichever is later, and that all foreign rights not exercised under the option are left to Assignor subject to a nonexclusive, irrevocable, royalty-free license to the Government in any patent or other form of protection which may issue on said invention in any foreign country, including the power to issue sub-licenses for use in behalf of the Government and/or in furtherance of the foreign policies of the Government.

**AND** the Assignor does hereby also grant unto the Government, the right to claim priority to the application(s) identified above.

**AND** the Assignor hereby further agrees to make, execute, and deliver to the Government, any and all papers, documents, affidavits, statements, or other instruments that may be necessary in the prosecution of the application(s) and of any continuation, division, or substitution of the application(s), or any application(s) for reissue or extension of said Letters Patent, and to assist the Government in every way in protecting the invention as may be requested, provided that any expense arising through such efforts will be paid by the Government.

**AND** Assignor hereby appoints all practitioners at Customer Number 26384, all of US Naval Research Laboratory, 4555 Overlook Ave, SW, Code 1008.2, Washington, DC 20375, jointly, and each of them severally, my attorneys at law/patent agent(s), with full power

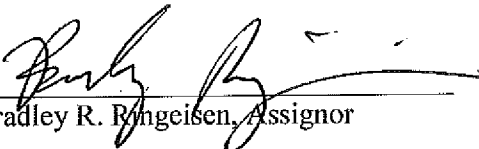
of substitution, delegation and revocation, to prosecute the above-mentioned application(s), to make alterations and amendments therein, and to transact all business in the U. S. Patent and Trademark Office connected therewith.

**AND** Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document:

US NAVAL RESEARCH LABORATORY

All practitioners at Customer Number 26384.

Date: 12/14/15

Signature:   
Bradley R. Ringeisen, Assignor

## ASSIGNMENT BY INVENTOR

**THIS ASSIGNMENT**, made by Peter K. Wu (hereinafter referred to as Assignor), residing at 1269 Ashland Mine Rd, Ashland, Oregon 97520;

**WHEREAS**, Assignor, has invented certain new and useful improvements in A DIRECT-WRITE PULSED-LASER INDUCED BALLISTIC MICRO/NANO PARTICLES IMPLANTATION TECHNIQUE, set forth in a Provisional application for Letters Patent of the United States, filed on December 15, 2017 as U.S. Application No. 62/599171, and in LASER INDUCED BALLISTIC PARTICLE IMPLANTATION TECHNIQUE, set forth in a Patent application for Letters Patent of the United States, filed on December 14, 2018 as U.S. Application No. 16/220,505; and

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**WHEREAS**, The Government of the United States of America, as represented by the Secretary of the Navy, a Federal Agency (hereinafter referred to as the Government), is desirous of acquiring the entire right, title and interest in and to said inventions and said Application(s) for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefor and thereon and in and to any foreign patents to be obtained therefor and thereon;

**WHEREAS**, by acquiring the Assignor's entire right, title, and interest in and to the invention the Government will be enabled to license the invention and share the income from the licensing with the Assignor as allowed by law;

**WHEREAS**, Assignor is obligated as subcontractor of TMT Group Inc. under contract no. N10073-13-D-2019;

**NOW, THEREFOR**, in consideration of the premises and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignor has assigned, transferred and set over, and by these presents does assign, transfer and set over, unto the Government, its successors, legal representatives and assigns, subject to a nonexclusive and royalty-free license which is hereby reserved to Assignor, the entire right, title and interest in and to the above-mentioned inventions and application(s) for Letters Patent, and in and to any and all direct and indirect divisions, continuations and continuations-in-part of said application(s), and any and

all Letters Patent in the United States and in all other Patent Cooperation Treaty member states which may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Government, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignor, had this assignment not been made.

**AND** the license reserved to the Assignor shall extend to all existing and future associated and affiliated companies, if any within the corporate structure of Assignor is a part and shall be assignable to the successor of that part of Assignor's business to which such invention pertains.

**AND** for the same consideration, Assignor hereby represents and warrants to the Government, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights, titles and/or interests that have arisen to the Government under law or that have already been transferred to the Government, Assignor is the sole and lawful owner of the entire right, title and interest in and to the said inventions and application(s) for Letters Patent above-mentioned, and that the same are unencumbered and that Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth.

**AND** for the same consideration, Assignor hereby covenants and agrees to and with the Government, its successors, legal representatives and assigns, that Assignor will sign all papers and documents, take all lawful oaths and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of any Letters Patent and applications for Letters Patent for said inventions in the U.S. or any foreign country, without charge to the Government, its successors, legal representatives and assigns, whenever counsel of the Government, or counsel of its successors, legal representatives and assigns, shall advise: that any proceeding in connection with said inventions, or said Patent application(s) for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of any application(s) for



Letters Patent, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable.

**AND** Assignor hereby requests the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of the Government, its successors, legal representatives and assigns.

**AND** the Assignor does hereby also grant unto the Government, the right to claim priority to the application(s) identified above.

**AND** the Assignor hereby further agrees to make, execute, and deliver to the Government, any and all papers, documents, affidavits, statements, or other instruments that may be necessary in the prosecution of the application(s) and of any continuation, division, or substitution of the application(s), or any application(s) for reissue or extension of said Letters Patent, and to assist the Government in every way in protecting the invention as may be requested, provided that any expense arising through such efforts will be paid by the Government.


**AND** Assignor hereby appoints all practitioners at Customer Number 26384, all of US Naval Research Laboratory, 4555 Overlook Ave, SW, Code 1008.2, Washington, DC 20375, jointly, and each of them severally, my attorneys at law/patent agent(s), with full power of substitution, delegation and revocation, to prosecute the above-mentioned application(s), to make alterations and amendments therein, and to transact all business in the U. S. Patent and Trademark Office connected therewith and in all other Patent Cooperation Treaty member states which may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Government.

**AND** Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office and any foreign patent office for recordation of this document:

US NAVAL RESEARCH LABORATORY

All practitioners at Customer Number 26384.

Date: 12/12/18

Signature:   
Peter K. Wu, Assignor