

<b>PATENT ASSIGNMENT COVER SHEET</b>
--------------------------------------

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3384966

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MIRJAM ARNDT	05/11/2015
HELMUT RUDIGIER	04/22/2015
HAMID BOLVARDI	04/20/2015
JOCHEN SCHNEIDER	03/20/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	OERLIKON SURFACE SOLUTIONS AG, TRUBBACH
<b>Street Address:</b>	HAUPTSTRASSE 53
<b>City:</b>	TRUBBACH
<b>State/Country:</b>	SWITZERLAND
<b>Postal Code:</b>	9477
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14427032
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(216)579-6073
<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>	216-579-1700
<b>Email:</b>	cdavis@pearne.com
<b>Correspondent Name:</b>	PEARNE & GORDON LLP
<b>Address Line 1:</b>	1801 EAST 9TH STREET
<b>Address Line 2:</b>	SUITE 1200
<b>Address Line 4:</b>	CLEVELAND, OHIO 44114-3108
<b>ATTORNEY DOCKET NUMBER:</b>	TSW-54226
<b>NAME OF SUBMITTER:</b>	MICHAEL W. GARVEY
<b>SIGNATURE:</b>	/michaelwgarvey/
<b>DATE SIGNED:</b>	06/05/2015
This document serves as an Oath/Declaration (37 CFR 1.63).	
<b>Total Attachments: 12</b>	

source=TSW-54226-Dec-Assgn#page1.tif  
source=TSW-54226-Dec-Assgn#page2.tif  
source=TSW-54226-Dec-Assgn#page3.tif  
source=TSW-54226-Dec-Assgn#page4.tif  
source=TSW-54226-Dec-Assgn#page5.tif  
source=TSW-54226-Dec-Assgn#page6.tif  
source=TSW-54226-Dec-Assgn#page7.tif  
source=TSW-54226-Dec-Assgn#page8.tif  
source=TSW-54226-Dec-Assgn#page9.tif  
source=TSW-54226-Dec-Assgn#page10.tif  
source=TSW-54226-Dec-Assgn#page11.tif  
source=TSW-54226-Dec-Assgn#page12.tif

**DECLARATION AND ASSIGNMENT  
FOR US UTILITY OR DESIGN PATENT APPLICATION**

Attorney Docket No.: TSW-54226

As a below-named inventor, I hereby declare that:

this declaration is directed to the application entitled:

METHOD FOR MANUFACTURING A  
METAL-BOROCARBIDE LAYER ON A SUBSTRATE  
(TITLE)

(check only one item below)

attached hereto,

OR

filed on (YYYY/MM/DD) 2013/09/09 as United States Application Number or PCT  
International Application Number PCT/EP2013/002700.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the  
above-identified application.

I hereby acknowledge that any willful false statement made in this declaration is punishable  
under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WHEREAS, new and useful improvements have been made by the undersigned as  
described in the above-identified application.

WHEREAS, Oerlikon Surface Solutions AG, Trübbach, having a place of business at  
Hauptstrasse 53, CH-9477 Trübbach, Switzerland, hereinafter referred to as "assignee", is  
desirous of acquiring all right, title, and interest throughout the world in, to, and under said  
improvements and inventions and patent rights therefor.

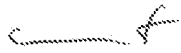
NOW, THEREFORE, be it known that, for valuable consideration, the receipt and  
sufficiency of which are hereby acknowledged, all right, title, and interest, in the United  
States and throughout the world, in, to and under said improvements and inventions and all  
patents, patent applications, patent rights, and inventors' certificates thereof, therefor, and  
therein, including without limitation said application for patent in the United States, all  
divisions and continuations thereof, all patents which may be granted thereon, all reissues and

For applications filed under AIA  
(on or after September 16, 2012)

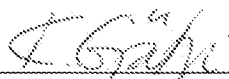
extensions thereof, all right to sue for past infringement thereunder, all patents which may be granted for said improvements and inventions by states or nations other than the United States, or by other authority, entity, or organization, and all applications therefor, have been and are hereby sold, assigned, transferred, and delivered unto assignee, its successors and assigns by the undersigned; and it is covenanted and agreed by the undersigned, and for executors, administrators, and legal representatives of the undersigned, that at assignee's request any and all applications, affidavits, assignments, and other instruments will be made, executed, and delivered as may be necessary, or desirable to secure for or vest in assignee, its successors or assigns, any improvement, inventions, right, title, interest, application, patent, patent right or other right or property covered by this assignment, and the United States Commissioner of Patents and Trademarks is hereby requested and authorized to issue any and all United States patents granted on any of said applications to assignee as owner of the entire right, title, and interest in, to, and under the same, and appropriately empowered officials of foreign countries are hereby authorized to issue any letters patent granted on any of said applications to assignee as owner of the entire right, title and interest in, to, and under the same.


IN WITNESS WHEREOF, this declaration and assignment has been executed below by the undersigned:

Legal Name of Inventor: Miriam Arndt

Signature of Inventor: 

Date: 11.5.13

Witness: 

Witness: 

Signatures of additional inventors on attached sheet(s)

**Notice to Inventor(s):** A person may not execute this declaration unless that person has reviewed and understands the contents of the above-identified application, including the claims.

**Notice to Inventor(s):** A person may not execute this declaration unless that person is aware of the duty to disclose to the US Patent and Trademark Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Additional Inventor(s)

Legal Name of Inventor: Helmut Rudigier

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Legal Name of Inventor: Hamid Bolvardi

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Legal Name of Inventor: Jochen Schneider

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

**DECLARATION AND ASSIGNMENT  
FOR US UTILITY OR DESIGN PATENT APPLICATION**

Attorney Docket No.: TSW-54226

As a below-named inventor, I hereby declare that:

this declaration is directed to the application entitled:

METHOD FOR MANUFACTURING A  
METAL-BOROCARBIDE LAYER ON A SUBSTRATE  
(TITLE)

(check only one item below)

attached hereto,

OR

filed on (YYYY/MM/DD) 2013/09/09 as United States Application Number or PCT International Application Number PCT/EP2013/002700.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the above-identified application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WHEREAS, new and useful improvements have been made by the undersigned as described in the above-identified application.

WHEREAS, Oerlikon Surface Solutions AG, Trübbach, having a place of business at Hauptstrasse 53, CH-9477 Trübbach, Switzerland, hereinafter referred to as "assignee", is desirous of acquiring all right, title, and interest throughout the world in, to, and under said improvements and inventions and patent rights therefor.

NOW, THEREFORE, be it known that, for valuable consideration, the receipt and sufficiency of which are hereby acknowledged, all right, title, and interest, in the United States and throughout the world, in, to and under said improvements and inventions and all patents, patent applications, patent rights, and inventors' certificates thereof, therefor, and therein, including without limitation said application for patent in the United States, all divisions and continuations thereof, all patents which may be granted thereon, all reissues and

extensions thereof, all right to sue for past infringement thereunder, all patents which may be granted for said improvements and inventions by states or nations other than the United States, or by other authority, entity, or organization, and all applications therefor, have been and are hereby sold, assigned, transferred, and delivered unto assignee, its successors and assigns by the undersigned; and it is covenanted and agreed by the undersigned, and for executors, administrators, and legal representatives of the undersigned, that at assignee's request any and all applications, affidavits, assignments, and other instruments will be made, executed, and delivered as may be necessary, or desirable to secure for or vest in assignee, its successors or assigns, any improvement, inventions, right, title, interest, application, patent, patent right or other right or property covered by this assignment, and the United States Commissioner of Patents and Trademarks is hereby requested and authorized to issue any and all United States patents granted on any of said applications to assignee as owner of the entire right, title, and interest in, to, and under the same, and appropriately empowered officials of foreign countries are hereby authorized to issue any letters patent granted on any of said applications to assignee as owner of the entire right, title and interest in, to, and under the same.

IN WITNESS WHEREOF, this declaration and assignment has been executed below by the undersigned:

Legal Name of Inventor: Mirjam Arndt

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

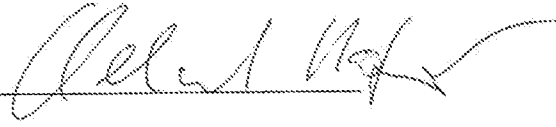
Signatures of additional inventors on attached sheet(s)

**Notice to Inventor(s):** A person may not execute this declaration unless that person has reviewed and understands the contents of the above-identified application, including the claims.

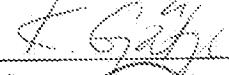
**Notice to Inventor(s):** A person may not execute this declaration unless that person is aware of the duty to disclose to the US Patent and Trademark Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.


Additional Inventor(s)

Legal Name of Inventor: Helmut Rudigier

Signature of Inventor: 

Date: Apr 22, 2015

Witness: 

Witness: 

Legal Name of Inventor: Hamid Bolvardi

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Legal Name of Inventor: Jochen Schneider

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_



**DECLARATION AND ASSIGNMENT  
FOR US UTILITY OR DESIGN PATENT APPLICATION**

Attorney Docket No.: TSW-54226

As a below-named inventor, I hereby declare that:

this declaration is directed to the application entitled:

METHOD FOR MANUFACTURING A  
METAL-BOROCARBIDE LAYER ON A SUBSTRATE  
(TITLE)

(check only one item below)

attached hereto,

OR

filed on (YYYY/MM/DD) 2013/09/09 as United States Application Number or PCT  
International Application Number PCT/EP2013/002700.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the  
above-identified application.

I hereby acknowledge that any willful false statement made in this declaration is punishable  
under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WHEREAS, new and useful improvements have been made by the undersigned as  
described in the above-identified application.

WHEREAS, Oerlikon Surface Solutions AG, Trübbach, having a place of business at  
Hauptstrasse 53, CH-9477 Trübbach, Switzerland, hereinafter referred to as "assignee", is  
desirous of acquiring all right, title, and interest throughout the world in, to, and under said  
improvements and inventions and patent rights therefor.

NOW, THEREFORE, be it known that, for valuable consideration, the receipt and  
sufficiency of which are hereby acknowledged, all right, title, and interest, in the United  
States and throughout the world, in, to and under said improvements and inventions and all  
patents, patent applications, patent rights, and inventors' certificates thereof, therefor, and  
therein, including without limitation said application for patent in the United States, all  
divisions and continuations thereof, all patents which may be granted thereon, all reissues and

extensions thereof, all right to sue for past infringement thereunder, all patents which may be granted for said improvements and inventions by states or nations other than the United States, or by other authority, entity, or organization, and all applications therefor, have been and are hereby sold, assigned, transferred, and delivered unto assignee, its successors and assigns by the undersigned; and it is covenanted and agreed by the undersigned, and for executors, administrators, and legal representatives of the undersigned, that at assignee's request any and all applications, affidavits, assignments, and other instruments will be made, executed, and delivered as may be necessary, or desirable to secure for or vest in assignee, its successors or assigns, any improvement, inventions, right, title, interest, application, patent, patent right or other right or property covered by this assignment, and the United States Commissioner of Patents and Trademarks is hereby requested and authorized to issue any and all United States patents granted on any of said applications to assignee as owner of the entire right, title, and interest in, to, and under the same, and appropriately empowered officials of foreign countries are hereby authorized to issue any letters patent granted on any of said applications to assignee as owner of the entire right, title and interest in, to, and under the same.

IN WITNESS WHEREOF, this declaration and assignment has been executed below by the undersigned:

Legal Name of Inventor: Mirjam Arndt

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Signatures of additional inventors on attached sheet(s)

**Notice to Inventor(s):** A person may not execute this declaration unless that person has reviewed and understands the contents of the above-identified application, including the claims.

**Notice to Inventor(s):** A person may not execute this declaration unless that person is aware of the duty to disclose to the US Patent and Trademark Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Additional Inventor(s)

Legal Name of Inventor: Helmut Rudigier

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Legal Name of Inventor: Hamid Bolvardi

Signature of Inventor: \_\_\_\_\_ 

Date: 20.04.2015

Witness: K. G. G. G.

Witness: M.

Legal Name of Inventor: Jochen Schneider

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

**DECLARATION AND ASSIGNMENT  
FOR US UTILITY OR DESIGN PATENT APPLICATION**

Attorney Docket No.: TSW-54226

**As a below-named inventor, I hereby declare that:**

this declaration is directed to the application entitled:

METHOD FOR MANUFACTURING A  
METAL-BOROCARBIDE LAYER ON A SUBSTRATE  
(TITLE)

(check only one item below)

attached hereto,

OR

filed on (YYYY/MM/DD) 2013/09/09 as United States Application Number or PCT  
International Application Number PCT/EP2013/002700.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the  
above-identified application.

I hereby acknowledge that any willful false statement made in this declaration is punishable  
under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WHEREAS, new and useful improvements have been made by the undersigned as  
described in the above-identified application.

WHEREAS, Oerlikon Surface Solutions AG, Trübbach, having a place of business at  
Hauptstrasse 53, CH-9477 Trübbach, Switzerland, hereinafter referred to as "assignee", is  
desirous of acquiring all right, title, and interest throughout the world in, to, and under said  
improvements and inventions and patent rights therefor.

NOW, THEREFORE, be it known that, for valuable consideration, the receipt and  
sufficiency of which are hereby acknowledged, all right, title, and interest, in the United  
States and throughout the world, in, to and under said improvements and inventions and all  
patents, patent applications, patent rights, and inventors' certificates thereof, therefor, and  
therein, including without limitation said application for patent in the United States, all  
divisions and continuations thereof, all patents which may be granted thereon, all reissues and

extensions thereof, all right to sue for past infringement thereunder, all patents which may be granted for said improvements and inventions by states or nations other than the United States, or by other authority, entity, or organization, and all applications therefor, have been and are hereby sold, assigned, transferred, and delivered unto assignee, its successors and assigns by the undersigned; and it is covenanted and agreed by the undersigned, and for executors, administrators, and legal representatives of the undersigned, that at assignee's request any and all applications, affidavits, assignments, and other instruments will be made, executed, and delivered as may be necessary, or desirable to secure for or vest in assignee, its successors or assigns, any improvement, inventions, right, title, interest, application, patent, patent right or other right or property covered by this assignment, and the United States Commissioner of Patents and Trademarks is hereby requested and authorized to issue any and all United States patents granted on any of said applications to assignee as owner of the entire right, title, and interest in, to, and under the same, and appropriately empowered officials of foreign countries are hereby authorized to issue any letters patent granted on any of said applications to assignee as owner of the entire right, title and interest in, to, and under the same.

IN WITNESS WHEREOF, this declaration and assignment has been executed below by the undersigned:

Legal Name of Inventor: Mirjam Arndt

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Signatures of additional inventors on attached sheet(s)

**Notice to Inventor(s):** A person may not execute this declaration unless that person has reviewed and understands the contents of the above-identified application, including the claims.

**Notice to Inventor(s):** A person may not execute this declaration unless that person is aware of the duty to disclose to the US Patent and Trademark Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

**Additional Inventor(s)**

Legal Name of Inventor: Helmut Rudigier

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Legal Name of Inventor: Hamid Bolvardi

Signature of Inventor: \_\_\_\_\_

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

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Legal Name of Inventor: Jochen Schneider

Signature of Inventor: J. Schneider

Date: 2013 05 15

Witness: F. Gashi

Witness: U. [Signature]