### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5010195

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
PHILIPPE CHARLES ALAIN LE BIEZ	06/09/2017
GEOFFROY CHEVALLIER	06/09/2017
ROMAIN EPHERRE	06/09/2017
CLAUDE ESTOURNES	06/09/2017
JEAN-BAPTISTE MOTTIN	06/09/2017
SERGE GEORGES VLADIMIR SELEZNEFF	06/09/2017

#### **RECEIVING PARTY DATA**

Name:	SAFRAN AIRCRAFT ENGINES	
Street Address:	2 BOULEVARD DU GÉNÉRAL MARTIAL VALIN	
City:	PARIS	
State/Country:	FRANCE	
Postal Code:	75015	
Name:	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	
Street Address:	3, RUE MICHEL ANGE	
City:	PARIS	
State/Country:	FRANCE	
Postal Code:	75016	
Name:	UNIVERSITE PAUL SABATIER - TOULOUSE III	
Street Address:	118, ROUTE DE NARBONNE	
City: TOULOUSE CEDEX 9		
State/Country: FRANCE		
Postal Code:	31062	

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16062224

### **CORRESPONDENCE DATA**

### Fax Number:

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.

REEL: 046110 FRAME: 0389

PATENT -

504963448

**Phone:** 202-808-3550

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Correspondent Name: BOOKOFF MCANDREWS, PLLC

Address Line 1: 2020 K STREET, NW

Address Line 2: SUITE 400

Address Line 4: WASHINGTON, D.C. 20006

ATTORNEY DOCKET NUMBER:	00092-0146-00000
NAME OF SUBMITTER:	JAMESON Q. MA
SIGNATURE:	/Jameson Q. Ma/
DATE SIGNED:	06/16/2018

#### **Total Attachments: 6**

source=Executed declarations - All inventors 00282424#page1.tif source=Executed declarations - All inventors 00282424#page2.tif source=Executed declarations - All inventors 00282424#page3.tif source=Executed declarations - All inventors 00282424#page4.tif source=Executed declarations - All inventors 00282424#page5.tif source=Executed declarations - All inventors 00282424#page6.tif

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

Inventor Name	Complete Address
CHEVALLIER, Gedffroy	Sbis allée des Fontaines 31370 AUZEVILLÉ-TOLOSANE FRANCE

(Hereinafter referred to as the Assignor) have made an invention entitled:

Title of Invention (in Engl	ish)	 		***************************************	 
ABRADABLE	COATING		DENSITIES.		
Title of Invention (in Fren	ch)				 

for which an application for Letters Patent has been filed in the following country:

Country	Filing Date	Serial Number
FRANCE	DEC-14-2015	1562318

The above-identified application(s) was/were made or authorized to be made by me.

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

AND, WHEREAS,

Corporation Nome	Complete Address
Safran Aircraft Engines	2 Boujevard du Général Martiel Valin 75015 PARIS FRANCE
Centre National De La Recherche Scientifique	3, rue Michel Ange 75036 PARIS FRANCE
UNIVERSITE PAUL SABATIER - TOULOUSE III	118, Route de Narbanne 31062 TOULOUSE cadex 9

(Hereinafter referred to as the Assignee[s]) is/are desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the aforementioned applications for Letters Patent on this invention and the Letters Patent to be issued upon these applications;

NOW THEREFORE, be it known that for and in consideration of One EURO (£1.00) and other good and valuable consideration, the receipt and sufficiency of which from the Assignee[s] is hereby acknowledged, by these presents, i, the Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer and set over unto the Assignee[s], its/their lawful successors and assigns, my entire right, title, and interest in and to this invention and these applications, and all divisions, and continuations thereof, and all Letters Patent that may be granted thereon, and all reissues thereof, and all rights to claim priority on these of such applications, and all applications for Letters Patent that may hereafter be filled for this invention in any country and all Letters ratent that may be granted on this invention in any country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioners of Patents (or other appropriate official whose duty is to issue patents) of the United States, Canada, and any other country, to issue Letters Patent for this invention to the Assignee(s), its/their 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 communicate with the Assignee[s], its/their successors and assigns, any facts known to me respecting this invention, testify in any legal proceedings, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee[s], its/their successors or assigns, execute all divisional, continuation, reissue, and re-examination applications, make all rightful oaths and generally do everything possible to aid the Assignee[s], its/their successors and assigns, to obtain and enforce proper patent protection for this invention in any country, it being understood that, irrespective of whether I am in the employ of the Assignee[s] or its/their affiliates, any expense incident to the performance of the obligations of the present paragraph shall be borne by the Assignee[s], its/their successors, and assigns.

This Assignment agreement is effective as of the earliest filing date mentioned above.

AND, I/WE HERREY 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.

IN TESTIMONY WHEREOF, I HAVE SIGNED:

June 9, 2017 Tailouse Chevallier, Geoffray BEYNET Yannick	Date:	Place	Inventor Name & Signature	Witness Name & Signature
	June 9, 2017	Tailouse	CHEVALUER, Geoffray	BEYNET Yannek
				20 Regiment

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

-	Inventor Name	Complete Address
hannan	EPHERRE, Romain	17 avenue Jean Rieux, Apt 97 31500 TOLLOUSE FRANCE

(Hereinafter referred to as the Assignor) have made an invention entitled:

	Title of Invention (in English)			
ABRADABLE	COATING	HAVING	VARIABLE	DENSITIES.
Title of Invention (in Fre	nch)			

for which an application for Letters Patent has been filed in the following country:

	Country	Filing Date	Serial Number	
-	FRANCE	DEC-14-2015	7265318	
-				

The above-identified application(s) was/were made or authorized to be made by me.

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

#### AND, WHEREAS,

Carparation Name	Complete Address
Safran Aircraft Engines	2 Boulevard du Général Martial Valin 75015 PARIS FRANCE
Centre National De La Recherche Scientifique	3, rue Michel Ange 75016 PARIS FRANCE
Universite Paul Sabatier - Toulouse III	118, Route de Narbonne 31062 TOULOUSE cedex 9

(Hereinafter referred to as the Assignee(s)) is/are desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the aforementioned applications for Letters Patent on this invention and the Letters Patent to be issued upon these applications;

NOW THEREFORE, be it known that for and in consideration of One EURO (C1,00) and other good and valuable consideration, the receipt and sufficiency of which from the Assignee[s] is hereby acknowledged, by these presents, I, the Assigner, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer and set over unto the Assignee[s], its/their lawful successors and assigns, my entire right, title, and interest in and to this invention and these applications, and all divisions, and continuations thereof, and all Letters Patent that may be granted thereon, and all reissues thereof, and all rights to claim priority on these of such applications, and all applications for Letters Patent that may hereafter be flied for this invention in any country and all Letters "atent that may be granted on this invention in any country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioners of Patents (or other appropriate official whose duty is to issue patents) of the United States, Canada, and any other country, to issue Letters Patent for this invention to the Assignee(s), its/their 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 communicate with the Assignee(s), its/their successors and assigns, any facts known to me respecting this invention, testify in any legal proceedings, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee(s), its/their successors or assigns, execute all divisional, continuation, reissue, and re-examination applications, make all rightful caths and generally do everything possible to aid the Assignee(s), its/their successors and assigns, to obtain and enforce proper patent protection for this invention in any country, it being understood that, irrespective of whether I am in the employ of the Assignee(s) or its/their siffiliates, any expense incident to the performance of the obligations of the present paragraph shall be borne by the Assignee(s), its/their successors, and assigns.

This Assignment agreement is effective as of the earliest filing date mentioned above.

AND, I/WE 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.

IN TESTIMONY WHEREOF, I HAVE SIGNED:

Date	Flace	Inventor Name & Signature	Witness Name & Signature
June 9, 2017	Toulouse	EPHERRE, Romain	BEYNET YOURIL
		The state of the s	

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

Inventor Name	Complete Address
SELEZNEFF, Serge Georges Vladimir	24 rue Paul Vaillant Couturier 94700 MAISONS ALFORT FRANCE

(Hereinafter referred to as the Assignor) have made an invention entitled:

Title of Invention (in English)		
ABRADABLE COATING HAVING VARIABLE DENSITIES.		
Title of Invention (in French)		

for which an application for Letters Patent has been filed in the following country:

Country	Filing Date	Serial Number
FRANCE	DEC-14-2015	1562318

The above-identified application(s) was/were made or authorized to be made by me.

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

AND, WHEREAS,

Corporation Name	Complete Address
SAFRAN AIRCRAFT ENGINES	2 Boulevard du Général Martial Valin 75015 PARIS FRANCE
Centre National De La Recherche Scientifique	3, rue Michel Ange 75016 PARIS FRANCE
UNIVERSITE PAUL SABATIER - TOULOUSE III	118, Route de Narbonne 31062 TOULOUSE cedex 9

(Hereinafter referred to as the Assignee[s]) is/are desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the aforementioned applications for Letters Patent on this invention and the Letters Patent to be issued upon these applications;

NOW THEREFORE, be it known that for and in consideration of One EURO (€1.00) and other good and valuable consideration, the receipt and sufficiency of which from the Assignee[s] is hereby acknowledged, by these presents, I, the Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer and set over unto the Assignee[s], its/their lawful successors and assigns, my entire right, title, and interest in and to this invention and these applications, and all divisions, and continuations thereof, and all Letters Patent that may be granted thereon, and all reissues thereof, and all rights to claim priority on these of such applications, and all applications for Letters Patent that may hereafter be filed for this invention in any country and all Letters Patent that may be granted on this invention in any country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioners of Patents (or other appropriate official whose duty is to issue patents) of the United States, Canada, and any other country, to issue Letters Patent for this invention to the Assignee[s], its/their 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 communicate with the Assignee[s], its/their successors and assigns, any facts known to me respecting this invention, testify in any legal proceedings, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee[s], its/their successors or assigns, execute all divisional, continuation, reissue, and re-examination applications, make all rightful oaths and generally do everything possible to aid the Assignee[s], its/their successors and assigns, to obtain and enforce proper patent protection for this invention in any country, it being understood that, irrespective of whether I am in the employ of the Assignee[s] or its/their affiliates, any expense incident to the performance of the obligations of the present paragraph shall be borne by the Assignee[s], its/their successors, and assigns.

This Assignment agreement is effective as of the earliest filing date mentioned above.

AND, I/WE 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.

IN TESTIMONY WHEREOF, I HAVE SIGNED:

Date	Place	Inventor Name & Signature	Witness Name & Signature
		SELEZNEFF, Serge Georges Vladimir	Nouveddine BOURHILA
June 9, 2017	Villaradie	Sclogall	Amus

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

Inventor Name	Complete Address
ESTOURNES, Claude	645 Chemin du Peregril 33376 RIEUMES FRANCE

(Hereinafter referred to as the Assignor) have made an invention entitled:

Title of Invention (in English)			
ABRADABLE COATING	HAVING VARIABLE	DENSITIES.	
Title of Invention (in French)			

for which an application for Letters Patent has been filed in the following country:

Country	Filing Date	Serial Number
FRANCE	DEC-14-2015	1562318

The above-identified application(s) was/were made or authorized to be made by me.

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

AND, WHEREAS,

Corporation Name	Complete Address
SAFRAN AIRCRAFT ENGINES	2 Boulevard du Général Martial Valin 75015 PARIS FRANCE
Centre National De La Recherche Scientifique	3, rue Michel Ange 75016 PARIS FRANCE
UNIVERSITE PAUL SABATIER - TOULOUSE III	118, Route de Narbonne 31062 TOULOUSE cedex 9

(Hereinafter referred to as the Assignee[s]) is/are desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the aforementioned applications for Letters Patent on this invention and the Letters Patent to be issued upon these applications;

NOW THEREFORE, be it known that for and in consideration of One EURO (£1.00) and other good and valuable consideration, the receipt and sufficiency of which from the Assignee[s] is hereby acknowledged, by these presents, i, the Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer and set over unto the Assignee[s], its/their lawful successors and assigns, my entire right, title, and interest in and to this invention and these applications, and all divisions, and continuations thereof, and all Letters Patent that may be granted thereon, and all reissues thereof, and all rights to claim priority on these of such applications, and all applications for Letters Patent that may hereafter be filed for this invention in any country and all Letters Patent that may be granted on this invention in any country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioners of Patents (or other appropriate official whose duty is to issue patents) of the United States, Canada, and any other country, to issue Letters Patent for this invention to the Assignee(s), its/their 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 communicate with the Assignee[s], its/their successors and assigns, any facts known to me respecting this invention, testify in any legal proceedings, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee[s], its/their successors or assigns, execute all divisional, continuation, reissue, and re-examination applications, make all rightful oaths and generally do everything possible to aid the Assignee[s], its/their successors and assigns, to obtain and enforce proper patent protection for this invention in any country, it being understood that, irrespective of whether I am in the employ of the Assignee[s] or its/their affiliates, any expense incident to the performance of the obligations of the present paragraph shall be borne by the Assignee[s], its/their successors, and assigns.

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AND, I/WE 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.

IN TESTIMONY WHEREOF, I HAVE SIGNED:

Date	Place	Inventor Name & Signature	Witness Name & Signature
June 9, 2017	Touloux	ESTOURNES, Claude	BEYNET YUMIR.

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

Inventor Name	Complete Address
LE BIEZ, Philippe Charles Alain	3 rue Tamponnet 91210 DRAVEIL FRANCE

(Hereinafter referred to as the Assignor) have made an invention entitled:

Title of Invention (in English)							
ABRADABLE	COATING	HAVING	VARIABLE	DENSITIES.			
Title of Invention (in Fre	ench)						

for which an application for Letters Patent has been filed in the following country:

Country	Filing Date	Serial Number	
FRANCE DEC-14-201		1562318	

The above-identified application(s) was/were made or authorized to be made by me.

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

#### AND, WHEREAS,

Corporation Name	Complete Address	
SAFRAN AIRCRAFT ENGINES	2 Boulevard du Général Martial Valin 75015 PARIS FRANCE	
Centre National De La Recherche Scientifique	3, rue Michel Ange 75016 PARIS FRANCE	
UNIVERSITE PAUL SABATIER - TOULOUSE III	118, Route de Narbonne 31062 TOULOUSE cedex 9	

(Hereinafter referred to as the Assignee[s]) is/are desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the aforementioned applications for Letters Patent on this invention and the Letters Patent to be issued upon these applications;

NOW THEREFORE, be it known that for and in consideration of One EURO (€1.00) and other good and valuable consideration, the receipt and sufficiency of which from the Assignee[s] is hereby acknowledged, by these presents, I, the Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer and set over unto the Assignee[s], its/their lawful successors and assigns, my entire right, title, and interest in and to this invention and these applications, and all divisions, and continuations thereof, and all Letters Patent that may be granted thereon, and all reissues thereof, and all rights to claim priority on these of such applications, and all applications for Letters Patent that may hereafter be filed for this invention in any country and all Letters Patent that may be granted on this invention in any country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioners of Patents (or other appropriate official whose duty is to issue patents) of the United States, Canada, and any other country, to issue Letters Patent for this invention to the Assignee(s), its/their 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;

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AND, I/WE 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.

#### IN TESTIMONY WHEREOF, I HAVE SIGNED:

Date	Place	Inventor Name & Signature	Witness Name & Signature
June 9, 2017	Lian	LE BIEZ, Philippe Charles Alain	Sennes N 1112
		1	

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

Inventor Name	Complete Address
MOTTIN, Jean-Baptiste	37 Rue Jules Ferry 86000 POITIERS FRANCE

(Hereinafter referred to as the Assignor) have made an invention entitled:

Ti	Title of Invention (in English)						
	ABRADABLE	COATING	HAVING	VARIABLE	DENSITIES.		
Ti	Title of Invention (in French)						

for which an application for Letters Patent has been filed in the following country:

Country	Filing Date	Serial Number
FRANCE	DEC-14-2015	1562318

The above-identified application(s) was/were made or authorized to be made by me.

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

AND, WHEREAS,

Corporation Name	Complete Address
SAFRAN AIRCRAFT ENGINES	2 Boulevard du Général Martial Valin 75015 PARIS FRANCE
Centre National De La Recherche Scientifique	3, rue Michel Ange 75016 PARIS FRANCE
UNIVERSITE PAUL SABATIER - TOULOUSE III	118, Route de Narbonne 31062 TOULOUSE cedex 9

(Hereinafter referred to as the Assignee[s]) is/are desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the aforementioned applications for Letters Patent on this invention and the Letters Patent to be issued upon these applications;

NOW THEREFORE, be it known that for and in consideration of One EURO (€1.00) and other good and valuable consideration, the receipt and sufficiency of which from the Assignee(s) is hereby acknowledged, by these presents, I, the Assignor, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer and set over unto the Assignee(s), its/their lawful successors and assigns, my entire right, title, and interest in and to this invention and these applications, and all divisions, and continuations thereof, and all Letters Patent that may be granted thereon, and all reissues thereof, and all rights to claim priority on these of such applications, and all applications for Letters Patent that may hereafter be filed for this invention in any country and all Letters Patent that may be granted on this invention in any country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioners of Patents (or other appropriate official whose duty is to issue patents) of the United States, Canada, and any other country, to issue Letters Patent for this invention to the Assignee(s), its/their 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 communicate with the Assignee(s), its/their successors and assigns, any facts known to me respecting this invention, testify in any legal proceedings, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee(s), its/their successors or assigns, execute all divisional, continuation, reissue, and re-examination applications, make all rightful oaths and generally do everything possible to aid the Assignee(s), its/their successors and assigns, to obtain and enforce proper patent protection for this invention in any country, it being understood that, irrespective of whether I am in the employ of the Assignee(s) or its/their affiliates, any expense incident to the performance of the obligations of the present paragraph shall be borne by the Assignee(s), its/their successors, and assigns.

This Assignment agreement is effective as of the earliest filing date mentioned above.

AND, I/WE 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.

IN TESTIMONY WHEREOF, I HAVE SIGNED:

Date	Place	Inventor Name & Signature	Witness Name & Signature
June 9, 2017	Clernat.	MOTTIN, Jean-Baptiste	Mottin, Mandi

PATENT REEL: 046110 FRAME: 0396

**RECORDED: 06/16/2018**