

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4792787

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JEROEN HEULENS	05/18/2017
BART DE COOMAN	07/14/2017
MAARTEN QUIX	05/22/2017
RECEIVING PARTY DATA	
Name:	UMICORE
Street Address:	RUE DU MARAIS 31
City:	BRUSSELS
State/Country:	BELGIUM
Postal Code:	B-1000
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15527358
CORRESPONDENCE DATA	
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<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>	
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Address Line 4:	RESEARCH TRIANGLE PK, NORTH CAROLINA 27709
ATTORNEY DOCKET NUMBER:	13810-161
NAME OF SUBMITTER:	ALLYN B ELLIOTT, REG. NO. 56745
SIGNATURE:	/Allyn B. Elliott/
DATE SIGNED:	01/25/2018
Total Attachments: 6	
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ASSIGNMENT

WHEREAS, I/we, Jeroen HEULENS, residing at Malendriesstraat 19, Kerkom, BE B-3370; Bart DE COOMAN, residing at Adolf Greinerstraat 14, Hoboken, BE B-2660; and Maarten QUIX, residing at Adolf Greinerstraat 14, Hoboken, BE B-2660, respectively, have made certain new and useful inventions and improvements in:

Plasma and Oxygen Fired Furnace:

set forth in:

- (1) United States provisional patent application
 - (a) bearing Application No. _____, filed on _____; or
 - (b) to be filed herewith;
- (2) United States nonprovisional patent application
 - (a) filed herewith; or
 - (b) bearing Application No. 15/527,358, filed on May 17, 2017, and
- (3) International Patent Application No. _____, designating the United States and filed on _____;

AND WHEREAS, Umicore, a corporation, having an office and place of business at Rue du Marais 31, B-1000, Brussels, Belgium; (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest in and to said inventions, improvements and application and in and to the Letters Patent to be obtained therefor;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, I/we have sold, assigned, set over, and transferred, and by these presents do sell, assign, set over and transfer unto said Assignee, its successors or assigns, the entire right, title and interest in and to said inventions and improvements, the right to file applications for all countries in and to all inventions and improvements disclosed in the aforesaid application, the entire right, title and interest in and to the said application, any and all other applications for Letters Patent on said inventions and improvements, including all provisional, nonprovisional, divisional, continuation, continuation-in-part, and renewal applications based in whole, or in part, upon said inventions or improvements, or upon said applications, and all Letters Patent which may be granted therefrom, and all reissues, reexaminations, or extensions of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said inventions and improvements, including an assignment of all rights under the provisions of the International Convention, and all Letters Patent of foreign countries which may be granted therefrom; and I/we do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent for the aforesaid inventions and improvements to the said Assignee as the

assignee of the entire right, title and interest in and to the same, for the use of the said Assignee, its successors and assigns.

AND, for the consideration aforesaid, I/we do hereby agree that I/we and my/our executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

AND, furthermore, I/we covenant and agree with said Assignee, its successors and assigns, that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me/us and that full right to convey the same as herein expressed is possessed by me/us.

AND, I/we hereby authorize and request the attorneys of Brinks, Gilson & Lione to insert in the spaces provided above the filing date, application number, and attorney's docket number of said application when known.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 18th day of May, 2017.

Jeroen HEULENS

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of _____, _____.

Bart DE COOMAN

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of _____, _____.

Maarten QUIX

ASSIGNMENT

WHEREAS, I/we, **Jeroen HEULENS**, residing at Malendriesstraat 19, Kerkom, BE B-3370; **Bart DE COOMAN**, residing at Adolf Greinerstraat 14, Hoboken, BE B-2660; and **Maarten QUIX**, residing at Adolf Greinerstraat 14, Hoboken, BE B-2660, respectively, have made certain new and useful inventions and improvements in:

Plasma and Oxygas Fired Furnace;

set forth in:

- (1) United States provisional patent application
 - (a) bearing Application No. _____, filed on _____; or
 - (b) to be filed herewith;
- (2) United States nonprovisional patent application
 - (a) filed herewith; or
 - (b) bearing Application No. 15/527,358, filed on May 17, 2017, and
- (3) International Patent Application No. _____, designating the United States and filed on _____;

AND WHEREAS, Umicore, a corporation, having an office and place of business at Rue du Marais 31, B-1000, Brussels, Belgium; (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest in and to said inventions, improvements and application and in and to the Letters Patent to be obtained therefor;

NOW, THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, I/we have sold, assigned, set over, and transferred, and by these presents do sell, assign, set over and transfer unto said Assignee, its successors or assigns, the entire right, title and interest in and to said inventions and improvements, the right to file applications for all countries in and to all inventions and improvements disclosed in the aforesaid application, the entire right, title and interest in and to the said application, any and all other applications for Letters Patent on said inventions and improvements, including all provisional, nonprovisional, divisional, continuation, continuation-in-part, and renewal applications based in whole, or in part, upon said inventions or improvements, or upon said applications, and all Letters Patent which may be granted therefrom, and all reissues, reexaminations, or extensions of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said inventions and improvements, including an assignment of all rights under the provisions of the International Convention, and all Letters Patent of foreign countries which may be granted therefrom; and I/we do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent for the aforesaid inventions and improvements to the said Assignee as the

assignee of the entire right, title and interest in and to the same, for the use of the said Assignee, its successors and assigns.

AND, for the consideration aforesaid, I/we do hereby agree that I/we and my/our executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

AND, furthermore, I/we covenant and agree with said Assignee, its successors and assigns, that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by me/us and that full right to convey the same as herein expressed is possessed by me/us.

AND, I/we hereby authorize and request the attorneys of Brinks, Gilson & Lione to insert in the spaces provided above the filing date, application number, and attorney's docket number of said application when known.

IN TESTIMONY WHEREOF, I have hereunto set my hand this ____ day of _____, ____.

Jeroen HEULENS

IN TESTIMONY WHEREOF, I have hereunto set my hand this 14 day of July, 2017.



Bart DE COOMAN

IN TESTIMONY WHEREOF, I have hereunto set my hand this ____ day of _____, ____.

Maarten QUIX

ASSIGNMENT

WHEREAS, I/we, Jeroen HEULENS, residing at Malendriesstraat 19, Kerkom, BE B-3370; Bart DE COOMAN, residing at Adolf Greinerstraat 14, Hoboken, BE B-2660; and Maarten QUIX, residing at Adolf Greinerstraat 14, Hoboken, BE B-2660, respectively, have made certain new and useful inventions and improvements in:

Plasma and Oxygen Fired Furnace;

set forth in:

- (1) United States provisional patent application
 - (a) bearing Application No. _____, filed on _____; or
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- (2) United States nonprovisional patent application
 - (a) filed herewith; or
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assignee of the entire right, title and interest in and to the same, for the use of the said Assignee, its successors and assigns.

AND, for the consideration aforesaid, I/we do hereby agree that I/we and my/our executors and legal representatives will make, execute and deliver any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said Assignee, its successors and representatives all facts known to us relating to said improvements and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable more effectually to secure to and vest in said Assignee, its successors or assigns the entire right, title and interest in and to the said improvements, inventions, applications, Letters Patent, rights, titles, benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

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AND, I/we hereby authorize and request the attorneys of Brinks, Gilson & Lione to insert in the spaces provided above the filing date, application number, and attorney's docket number of said application when known.

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of _____, _____.

Jeroen HEULENS

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of _____, _____.

Bart DE COOMAN

IN TESTIMONY WHEREOF, I have hereunto set my hand this 22 day of May, 2017.

Maarten QUÉX