## 503005699 10/03/2014 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3052299

		NEW ASSIGNMENT		
NATURE OF CONVEYANCE:		ASSIGNMENT	ASSIGNMENT	
CONVEYING PARTY DA	ТА			
		Name	Execution Date	
RUEDIGER HOYER			09/17/2014	
ANKE SCHULER			09/17/2014	
STEFAN FRANOSCHEK			09/24/2014	
THOMAS R. PAULY			09/29/2014	
GERALD JESKE			09/25/2014	
RECEIVING PARTY DAT	ГА			
Name:	UMICO	RE AG & CO. KG		
Street Address:	RODENBACHER CHAUSSEE 4			
City:	HANAU			
State/Country:	GERMANY			
Postal Code:	63457			
PROPERTY NUMBERS	Total: 1		7	
Property Type		Number	]	
		<b>Number</b> 14390765		
Property Type				
Property Type Application Number:	ATA			
Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be	ATA	14390765 (202)263-4329 • <b>the e-mail address first; if that is un</b>		
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Property Type Application Number: CORRESPONDENCE DA Fax Number: <i>Correspondence will be using a fax number, if p</i> Phone: Email: Correspondent Name:	ATA e sent to rovided	14390765 (202)263-4329 • <b>the e-mail address first; if that is un</b> <b>; if that is unsuccessful, it will be se</b> 2022634300 wdcdocketing@sgrlaw.com SMITH, GAMBRELL & RUSSELL, LLP	nt via US Mail.	
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Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2:	ATA e sent to provided	14390765 (202)263-4329 <b>the e-mail address first; if that is un</b> <b>; if that is unsuccessful, it will be sel</b> 2022634300 wdcdocketing@sgrlaw.com SMITH, GAMBRELL & RUSSELL, LLP 1055 THOMAS JEFFERSON STREET SUITE 400	nt via US Mail.	
Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4:	ATA e sent to provided	14390765 (202)263-4329 <b>the e-mail address first; if that is un</b> <b>; if that is unsuccessful, it will be sel</b> 2022634300 wdcdocketing@sgrlaw.com SMITH, GAMBRELL & RUSSELL, LLP 1055 THOMAS JEFFERSON STREET SUITE 400 WASHINGTON, D.C. 20007	nt via US Mail.	
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Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NU NAME OF SUBMITTER:	ATA e sent to provided	14390765 (202)263-4329 <b>the e-mail address first; if that is un</b> <b>if that is unsuccessful, it will be sel</b> 2022634300 wdcdocketing@sgrlaw.com SMITH, GAMBRELL & RUSSELL, LLP 1055 THOMAS JEFFERSON STREET SUITE 400 WASHINGTON, D.C. 20007 034166 R 236 DENNIS C. RODGERS	nt via US Mail.	
Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 1: Address Line 2: Address Line 2: Address Line 4: ATTORNEY DOCKET NU NAME OF SUBMITTER: SIGNATURE:	ATA e sent to provided	14390765 (202)263-4329 <b>the e-mail address first; if that is un</b> <b>; if that is unsuccessful, it will be sel</b> 2022634300 wdcdocketing@sgrlaw.com SMITH, GAMBRELL & RUSSELL, LLP 1055 THOMAS JEFFERSON STREET SUITE 400 WASHINGTON, D.C. 20007 034166 R 236 DENNIS C. RODGERS /Dennis C. Rodgers/	nt via US Mail.	

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#### ASSIGNMENT

This assignment agreement is applicable to an invention entitled:

#### METHOD FOR REMOVING CARBON MONOXIDE AND HYDROCARBONS FROM THE EXHAUST GAS OF LEAN-BURN INTERNAL COMBUSTION ENGINES

(Title)

and which is found in (check one)::

- A patent application for this invention, executed by the ASSIGNOR(S) concurrently with this assignment (U.S. Application No.
- U.S. Patent Application No. \_, filed \_;
- A U.S. Patent Application based on PCT International Application No. <u>PCT/EP2013/056360</u> filed on <u>26 March 2013</u> (U.S. Application No. <u>TBA</u>);
- U.S. Patent No. \_, Issued \_ (date).

The PATENT PROPERTY assigned under this agreement is (check one):

- U.S. Patent Property only: The entire right, title and interest for the United States and its territorial possessions in and to the invention identified above, any and all improvements thereof, the right to claim priority including the right to claim priority to any earlier patent applications for said invention, and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension, conversion to 35 U.S.C. 111(a), or substitute thereof, and any reissue, reexamination, or extension of said Letters Patent, and the right to sue and recover for any past infringement, the right to file and/or prosecute any applications for said invention as Applicant, and the right to have said Letters Patent issue with the Assignee as named Applicant, or
- Worldwide Patent Property: The entire right, title and interest for the United States and its territorial possessions and in all foreign countries in and to the invention identified above, any and all improvements thereof, and any legal equivalent thereof in a foreign country, the right to claim priority including the right to claim priority to any earlier patent applications for said invention, and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension, conversion to 35 U.S.C. 111(a), or substitute thereof, and any relssue, reexamination, or extension of said Letters Patent, and all rights under all International Conventions for the Protection of Industrial Property, and the right to sue and recover for any past infringement, and where applicable, the right to file and/or prosecute any applications for said invention as Applicant and/or the right to have said Letters Patent issue with the Assignee as named Applicant.

The following ASSIGNEE is the recipient of the PATENT PROPERTY:

SGR/12314080.1

#### Inventors-to-Assignee

#### Umicore AG & Co. KG Rodenbacher Chaussee 4 Hanau, GERMANY 63457

This ASSIGNEE is (check one):

- An Individual;
- A Partnership;
- A Corporation/Entity of <u>DE</u> (specify state or country); or
- (other)

The ASSIGNOR(S), In consideration of \$10.00 paid by the ASSIGNEE, and other good and valuable consideration, receipt of which is acknowledged, hereby sells, assigns and transfers to the ASSIGNEE, its successors, assigns, and legal representatives, the PATENT PROPERTY.

As to all U.S. Patent Property assigned under this agreement, the ASSIGNOR(S) hereby authorize and request the Director of the U.S. Patent & Trademark Office to Issue said Letters Patent and any reissue or extension thereof to the ASSIGNEE.

The ASSIGNOR(S) hereby agree that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

Further, the ASSIGNOR(S) hereby agree to communicate to said ASSIGNEE, its successors, assigns, and legal representatives, any facts known to the ASSIGNOR(S) respecting said invention, promptly provide upon request all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR(s), testify in any interference, derivation, post grant review, inter partes review, itigation, or legal proceeding relating to the PATENT PROPERTY, sign all lawful papers, execute all divisional, continuation, substitute, renewal, reexamination and relssue applications, execute all necessary assignment papers to cause any and all Letters Patent to be issued to said ASSIGNEE, make all rightful oaths and generally do everything necessary or desirable to ald said ASSIGNEE, its successors, assigns, and legal representatives, to obtain and enforce proper protection for said invention.

The ASSIGNOR(S) authorize any attorneys and agents of record and/or who have a power of attorney in this application to check any appropriate boxes and to insert the Serial Number and filing date in this document after it has been executed.

SGR/12314080.1

Page 2 of 3

Inventors-to-Assignee

IN WITNESS WHEREOF, the below designated ASSIGNOR(S) and ASSIGNEE have executed this ASSIGNMENT:

ASSIGNOR(S)	
Signature:	Date;
Name: <u>Ruediger HOYER</u>	
Signature; Name: <u>Anke SCHULER</u>	Date:
Signature:	Date:
Name: <u>Stefan FRANOSCHEK</u>	
Signature: Name: Thomas R. PAULY	Date: <u>4-24-2014</u>
Signature:	Date:
Name: <u>Gerald JESKE</u>	
ASSIGNEE Signature: Name: DGVI acting in off Umicore	Date: <u>7/29/707</u> Icial capacity on behalf of AG & Co. KG
	Date: <u>9-29-2014</u> Icial capacity on behalf of AG & Co. KG

Page 3 of 3

SGR/12314080.1

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(Title)

and which is found in (check one)::

- A patent application for this invention, executed by the ASSIGNOR(S) concurrently with this assignment (U.S. Application No. \_\_\_\_\_);
- U.S. Patent Application No. \_, filed \_;
- A U.S. Patent Application based on PCT international Application No. PCT/EP2013/056360 filed on <u>26 March 2013</u> (U.S. Application No. <u>TBA</u>);
- PCT International Application No. \_ filed on \_ (U.S. Application No. \_ ; and/or
- U.S. Patent No. , Issued (date),

The PATENT PROPERTY assigned under this agreement is (check one):

- U.S. Patent Property only: The entire right, title and Interest for the United States and its territorial possessions in and to the invention identified above, any and all improvements thereof, the right to claim priority including the right to claim priority to any earlier patent applications for said invention, and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension, conversion to 35 U.S.C. 111(a), or substitute thereof, and any reissue, reexamination, or extension of said Letters Patent, and the right to sue and recover for any past infringement, the right to file and/or prosecute any applications for said invention as Applicant, and the right to have said Letters Patent issue with the Assignee as named Applicant, or
- ☐ Worldwide Patent Property: The entire right, title and interest for the United States and its territorial possessions and in all foreign countries in and to the invention identified above, any and all improvements thereof, and any legal equivalent thereof in a foreign country, the right to claim priority including the right to claim priority to any earlier patent applications for said invention, and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension, conversion to 35 U.S.C. 111(a), or substitute thereof, and any reissue, reexamination, or extension of said Letters Patent, and all rights under all international Conventions for the Protection of industrial Property, and the right to sue and recover for any past infringement, and where applicable, the right to file and/or prosecute any applications for said invention as Applicant and/or the right to have said Letters Patent issue with the Assignee as named Applicant.

The following ASSIGNEE is the recipient of the PATENT PROPERTY:

SGR/12314080.1

#### Inventors-to-Assignee

#### Umicore AG & Co. KG Rodenbacher Chaussee 4 Hanau, GERMANY 63457

This ASSIGNEE is (check one):

- An Individual;
- A Partnership;
- A Corporation/Entity of <u>DE</u> (specify state or country); or
- (other)

The ASSIGNOR(S), in consideration of \$10.00 paid by the ASSIGNEE, and other good and valuable consideration, receipt of which is acknowledged, hereby sells, assigns and transfers to the ASSIGNEE, its successors, assigns, and legal representatives, the PATENT PROPERTY.

As to all U.S. Patent Property assigned under this agreement, the ASSIGNOR(S) hereby authorize and request the Director of the U.S. Patent & Trademark Office to issue said Letters Patent and any relissue or extension thereof to the ASSIGNEE.

The ASSIGNOR(S) hereby agree that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

Further, the ASSIGNOR(S) hereby agree to communicate to said ASSIGNEE, its successors, assigns, and legal representatives, any facts known to the ASSIGNOR(S) respecting said invention, promptly provide upon request all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR(s), testify in any interference, derivation, post grant review, inter partes review, iltigation, or legal proceeding relating to the PATENT PROPERTY, sign all lawful papers, execute all divisional, continuation, substitute, renewal, reexamination and relesue applications, execute all necessary assignment papers to cause any and all Letters Patent to be issued to said ASSIGNEE, make all rightful oaths and generally do everything necessary or desirable to aid said ASSIGNEE, its successors, assigns, and legal representatives, to obtain and enforce proper protection for said invention.

The ASSIGNOR(S) authorize any attorneys and agents of record and/or who have a power of attorney in this application to check any appropriate boxes and to insert the Serial Number and filing date in this document after it has been executed.

SGR/12314080.1

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Page 2 of 3

IN WITNESS WHEREOF, the below designated ASSIGNOR(S) and ASSIGNEE have executed this ASSIGNMENT:

ASSIGNOR(S)

Signature:

Name: Ruediger HOYER

Signature:

Name: Anke SCHULER

Signature:

Name: Stefan FRANOSCHEK

Signature:

Name: Thomas R. PAULY

Signature:

Name: Gerald JESKE

ASSIGNEE Signature;

Name:

I.V. Dr. Kal-Uwe Clauswitz Senior IP Manager

Signature: Hora Putras

Name:

I.V. Dr. Stefan Retzow Senior IP Manager

Page 3 of 3

Date: 2014/05 42

Date: 0

Date: 2014

Date:

Date: 20

Date: Sept. 26, 2014

acting in official capacity on behalf of Umicore AG & Co. KG

Date: Sept. 26,2014

acting in official capacity on behalf of Umicore AG & Co. KG

SGR/12314080.1

PATENT REEL: 033886 FRAME: 0118

**RECORDED: 10/03/2014**