

PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

EPAS ID: PAT3016533

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CATACEL CORP	08/27/2014

RECEIVING PARTY DATA

Name:	JOHNSON MATTHEY PUBLIC LIMITED COMPANY
Street Address:	5TH FLOOR, 25 FARRINGDON STREET
City:	LONDON
State/Country:	UNITED KINGDOM
Postal Code:	EC4A4AB

PROPERTY NUMBERS Total: 44

Property Type	Number
Application Number:	10896302
Application Number:	11105972
Application Number:	11105974
Application Number:	11191683
Application Number:	11132691
Application Number:	11956000
Application Number:	13025563
Application Number:	12360640
Application Number:	13924989
Application Number:	13359957
Application Number:	14223343
Application Number:	13853405
Application Number:	13853364
Application Number:	61590988
Application Number:	61756587
Application Number:	61930601
Application Number:	61593454
Application Number:	61758928
Application Number:	61932980
Application Number:	61593460
Application Number:	61758917

PATENT

Property Type	Number
Application Number:	61932992
Application Number:	61770549
Application Number:	61940588
Application Number:	13887469
Application Number:	61829584
Application Number:	14291396
Application Number:	10347130
Application Number:	10888488
Application Number:	10375810
Application Number:	10417410
Application Number:	10154349
Application Number:	10054486
Application Number:	10812506
Application Number:	11225763
Application Number:	29280526
Application Number:	11255771
Application Number:	11868805
Application Number:	09361774
Application Number:	29280520
Application Number:	13342517
Application Number:	61610132
Application Number:	61763639
Application Number:	61938895

CORRESPONDENCE DATA

Fax Number: (216)579-6073

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.

Phone: 216-579-1700

Email: rkoll@pearne.com

Correspondent Name: J. GREGORY CHRISMAN

Address Line 1: 1801 EAST 9TH STREET

Address Line 2: SUITE 1200

Address Line 4: CLEVELAND, OHIO 44114

ATTORNEY DOCKET NUMBER:	CATA
NAME OF SUBMITTER:	J. GREGORY CHRISMAN
SIGNATURE:	/jgregorychrism/
DATE SIGNED:	09/10/2014

Total Attachments: 7

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PATENT ASSIGNMENT

WHEREAS, CATACEL CORP. (hereinafter "ASSIGNOR"), a corporation organized and existing under the laws of the State of Ohio, U.S.A., whose full post office address is 785 North Freedom St., Ravenna, Ohio 44266, is the sole owner of the entire right, title and interest in and to the patent properties listed in Attachment A hereto and all inventions disclosed therein.

WHEREAS, JOHNSON MATTHEY PUBLIC LIMITED COMPANY (hereafter "ASSIGNEE"), a corporation organized and existing under the laws of England and Wales, whose full post office address is 5th Floor, 25 Farringdon Street, London EC4A4AB, United Kingdom, is desirous of acquiring the entire right, title and interest in said inventions, patents, patent applications and in any Letters Patent which may issue thereon of the patent properties listed in Attachment A hereto;

NOW THEREFORE, THIS IS TO WITNESS that for and in consideration of the sum of One Dollar (\$1.00 USD) paid to ASSIGNOR by ASSIGNEE, receipt of which is hereby acknowledged, and for other good and valuable considerations, ASSIGNOR hereby does sell, assign, transfer and confirm, unto ASSIGNEE, its successors, assigns and legal representatives, all right, title and interest in and to said inventions and any improvements thereon for all countries of the world, and in and to said patents, and patent applications, including any right, claim, cause of action or chose of action relating to past infringement and including the right to claim priority under any international conventions, including, but not limited to the Paris Convention and the Patent Cooperation Treaty, including their right to make national entries under the Patent Cooperation Treaty based on said patent applications, and any Patents that may issue thereon, and all right, title and interest in and to every patent application filed or to be filed on said inventions in any other country, including renewals, revivals, continuations and divisions thereof, and any substitute applications therefor, and any and all Patents which may issue thereon, and any reissues and extensions of the same; and ASSIGNOR hereby authorizes and requests competent authorities to grant and issue any and all Patents on said inventions to ASSIGNEE as the assignee of the entire interest therein; and ASSIGNOR further agrees to execute upon request of ASSIGNEE such additional documents, if any, as are necessary and proper to secure patent protection on said inventions throughout all countries of the world, and to otherwise give full effect to, and perfect the rights of ASSIGNEE under this Assignment;

And the ASSIGNOR hereby covenants and agrees without further consideration, to communicate with ASSIGNEE, its successors and assigns, any facts known respecting these inventions, and testify in any legal proceeding, 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 these inventions in said ASSIGNEE, its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid ASSIGNEE, its successors and assigns, to obtain and enforce proper patent protection for these inventions in all countries and jurisdictions of the world, it being understood that any expense incident to the execution of such papers shall be borne by the ASSIGNEE, its successors and assigns;

And the ASSIGNOR hereby covenants that they have full right to convey the interest assigned by this Assignment, and have not executed and will not execute any agreement in conflict with this Assignment.

This Assignment shall be governed by the laws of the State of Delaware.

This Assignment may be executed in any number of counterparts, each of which when executed and delivered shall be deemed to be an original and all of which counterparts taken together will constitute one and the same instrument.

[Signature page follows]

IN WITNESS WHEREOF, this Assignment has been executed this 27 day of August, 2014, SIGNED at Lawrence, OH, U.S.A.
(City/town) (Country)

CATACEL CORP.

By: [Signature]
(Signature of Authorized Officer)

Name: J. GARY McDANIEL

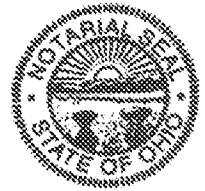
Title: CEO

State of Ohio :
County of Portage : SS

On this 27th day of August, 2014 appeared before me in person the above-named J. Gary McDaniel, and acknowledged the above to be his signature and that he signed, sealed and delivered the above instrument as his voluntary act and deed and for the uses and purposes therein set forth.

(SEAL)

Notary Public [Signature]
My Commission Expires:



Rachel Anna DeYoung
Notary Public, State of Ohio
My commission expires
March 24, 2018

IN WITNESS WHEREOF, this Assignment has been executed this 27 day of AUGUST, 2014, SIGNED at ROSELAND, OH USA
(City/town) (Country)

CATACEL CORP.

By: [Signature]
(Signature of Authorized Officer)

Name: WILLIAM A. WINTERBERGER

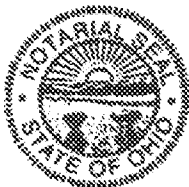
Title: PRESIDENT CEO

State of Ohio :
County of Portage : ss

On this 27th day of AUGUST, 2014 appeared before me in person the above-named William Winterberger and acknowledged the above to be his signature and that he signed, sealed and delivered the above instrument as his voluntary act and deed and for the uses and purposes therein set forth.

(SEAL)

Notary Public [Signature]
My Commission Expires:

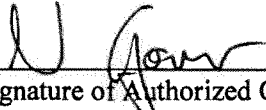


Rachel Anna DeYoung
Notary Public, State of Ohio
My commission expires
March 24 2018

The undersigned ASSIGNEE hereby accepts this Assignment.

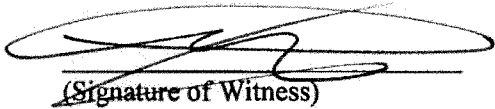
SIGNED at London, England, this 28th day of August, 2014.
(City/town) (Country) (Date) (Month)

JOHNSON MATTHEY PUBLIC LIMITED
COMPANY

By: 
(Signature of Authorized Officer)

Name: NICK GARNER

Title: HEAD CORPORATE DEVELOPMENT



(Signature of Witness)

CHARLES LOWE
(Printed Name of Witness)

Attachment A

Title	Country	Application No.	Publication No.	Application Date	Grant No.	Patent Issue Date
High Performance Catalyst Support	USA	10/896,302	US20060019827A	21/7/2004	US7320778	22/1/2008
Tool/Method For Insertion And Removal Of A Catalytic Reactor Cartridge	USA	11/105,972	US20060245981A	14/4/2005	US7472936	6/1/2009
	USA	11/105,974	US20060245982A	14/4/2005	US7565743	28/7/2009
	Russia	RU20070142029	RU2007142029A	10/4/2006	RU2404848	27/11/2010
	Trinidad & Tobago	TT/A/2007/00252	-	10/4/2006	-	-
Reactor Having Improved Heat Transfer	USA	11/191,683	US20070025893A	28/7/2005	US7501102	10/3/2009
	Russia	RU20080107571	RU2008107571A	21/7/2006	RU2423657	10/7/2011
	European for	6788160.7	EP1910765A2	21/7/2006	EP1910765	8/5/2013
	Austria	6788160.7		21/7/2006	EP1910765	8/5/2013
	Belgium	6788160.7		21/7/2006	EP1910765	8/5/2013
	Czech Republic	6788160.7		21/7/2006	EP1910765	8/5/2013
	Germany	6788160.7		21/7/2006	EP1910765	8/5/2013
	Denmark	6788160.7		21/7/2006	EP1910765	8/5/2013
	Spain	6788160.7		21/7/2006	EP1910765	8/5/2013
	France	6788160.7		21/7/2006	EP1910765	8/5/2013
	United Kingdom	6788160.7		21/7/2006	EP1910765	8/5/2013
	Hungary	6788160.7		21/7/2006	EP1910765	8/5/2013
	Italy	6788160.7		21/7/2006	EP1910765	8/5/2013
	Netherlands	6788160.7		21/7/2006	EP1910765	8/5/2013
	Poland	6788160.7		21/7/2006	EP1910765	8/5/2013
	Romania	6788160.7		21/7/2006	EP1910765	8/5/2013
	Turkey	6788160.7		21/7/2006	EP1910765	8/5/2013
Canada	CA20062616731	CA2616731A	21/7/2006	CA2616731	17/9/2013	
Trinidad & Tobago	TT/A//2008/00019	-	28/1/2008	-	-	
Catalytic Reactor Having Radial Leaves	USA	11/132,691	US20060263278	19/5/2005	US7682580	23/3/2010
Stackable Structural Reactor Improvements	USA	11/956,000	US20080145284A	13/12/2007	US7906079	15/3/2011
	USA	13/025,563	US20110131786A	13/12/2007	-	-
	Russia	20090126782	RU2009126782A	14/12/2007	RU2451891	27/5/2012
	European	12163677.3	EP2476989 A1	14/12/2007	EP2476989	18/6/2014
	Canada	20072685339	CA2685339A	14/12/2007	-	-
Trinidad & Tobago	TT/A/200900113	-	14/12/2007	-	-	
Reactor Installation and Removal Tools	USA	12/360,640	-	27/1/2009	US8495814	30/7/2013
	USA	13/924,989	US2013/0291383	24/6/2013	US8763249	1/7/2014
Improved Stackable Structural Reactors	USA	13/359,957	US20120195801A	27/1/2012	US8721973	13/5/2014
	USA	14/223,343	US20140205506A	27/1/2012	-	-
	WO for	PCT/US2012/022888	WO2012103432A	27/1/2012	-	-
	United Arab Emirates	804/2013		27/1/2012	-	-
	Australia	2012211161	AU2012211161	27/1/2012	-	-
	Bahrain	90/2013		27/1/2012	-	-
	Brazil	11 2013 019035 3		27/1/2012	-	-
	Canada	2824785	CA2824785	27/1/2012	-	-
	China	201280006788.6	CN103402617A	27/1/2012	-	-
	Egypt	1159/2013		27/1/2012	-	-
	European	12738772.8	EP2667962A	27/1/2012	-	-
	Indonesia	W00201303490		27/1/2012	-	-
	India	PCT/US2012/022888		27/1/2012	-	-
	Japan	20130551368	JP2014505591 (A)	27/1/2012	-	-
	S. Korea	10-2013-7022711	KR20140006929 (A)	27/1/2012	-	-
	Mexico	MX/a/2013-008236	MX2013008236 (A)	27/1/2012	-	-
	Malaysia	PI 2013 701311		27/1/2012	-	-
New Zealand	612924		27/1/2012	-	-	
Oman	OM/P/201300178		27/1/2012	-	-	

	Qatar Russia Singapore Trinidad & Tobago South Africa	QA/2013/0700151 PCT/US2012/022888 201305257-6 TT/A/2013/00081 PCT/US2012/022888	SG191898	27/1/2012 27/1/2012 27/1/2012 27/1/2012 27/1/2012	- - - - -	- - - - -
Expanding Centers for Stackable Structural Reactors	USA WO	13/853,405 PCT/US2013/34590	US20130259757 WO2013151889	29/3/2013 29/3/2013	- -	- -
Wire Standoffs for Stackable Reactors	USA WO	13/853,364 PCT/US2013/34570	US20130259767 WO2013151885	29/3/2013 29/3/2013	- -	- -
Improved Stackable Structural Reactors	USA	61/590,988 61/756,587 61/930,601	- - -	26/1/2012 25/1/2013 23/1/2014	- - -	- - -
Seals for use with Foil Supported and Catalyst Structures	USA	61/593,454 61/758,928 61/932,980	- - -	1/2/2012 31/1/2013 29/1/2014	- - -	- - -
Catalyst Support for Reactor (Improvement on Cup Reactor Elements)	USA	61/593,460 61/758,917 61/932,992	- - -	1/2/2012 31/1/2013 29/1/2014	- - -	- - -
Installation tool for structured catalysts	USA	61/770,549 61/940,588	- -	28/2/2013 17/2/2014	- -	- -
Tools and processes for installing reactor components	USA	13/887,469	-	6/5/2013	-	-
Installation tools for structured catalysts	USA USA WO	61/829,584 14/291,396 PCT/US2014/04021	- - -	31/5/2013 30/5/2014 31/5/2014	- - -	- - -
Autothermal catalytic steam reformer	USA	10/347,130	US20040020125	17/1/2003	US7179313	20/2/2007
Hydrogen generator	USA	10/888,488	US20060008414	9/7/2004	US7306781	11/12/2007
Catalyst comprising Pd and ZrO2	USA	10/375,810	-	27/2/2003	US6620761	16/9/2003
Heat exchanger	USA	10/417,410	US20040206486	16/4/2003	US6920920	26/7/2005
Monolith For Imparting Swirl To A Gas Stream	USA	10/154,349	US20030219362	23/5/2002	US7077999	18/7/2006
Catalytic combustor having high cell density	USA	10/054,486	US20030138362	22/1/2002	US7090487	15/8/2006
Heat Exchanger for high temperature applications	USA	10/812,506	US20050217836	30/3/2004	US7150099	19/12/2006
Low cost high temperature heat exchanger	USA	11/225,763 29/280,526	US20070056717 -	13/9/2005 30/5/2007	US7591301 D560,276	22/9/2009 22/1/2008
Method for making low-cost high temperature heat exchanger	USA USA	11/225,771 11/868,805	US20070056164 US20080072425	13/9/2005 8/10/2007	US7594326 US8047272	29/9/2009 1/11/2011
Catalytic combustor and method of operating same	USA	09/361,774	-	27/7/1999	US6334769	1/1/2002
Heat exchanger	USA	29/280,520	-	30/5/2007	D579,101	21/10/2008
Monolith with catalytic or sorbent beads	USA WO for European Canada	13/342,517 PCT/US2012/061003 12864287.3 PCT/US2012/061003	US20130171404 WO2013103433	3/1/2012 19/10/2012 19/10/2012 19/10/2012	- - - -	- - - -
CO2 capture using sorbents supported on structures	USA	61/610,132	-	13/3/2012	-	-
Sorbent coating formulations and methods	USA	61/763,639 61/938,895	- -	12/2/2013 12/2/2014	- -	- -