## 502639324 01/16/2014

#### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT2685932

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
GAVIN MICHAEL BROWN	01/20/2012
ANDREW FRANCIS CHIFFEY	01/19/2012
PAUL RICHARD PHILLIPS	01/18/2012
ANDREW PETER WALKER	01/27/2012
PHILIP GERALD BLAKEMAN	02/17/2012
SOUGATO CHATTERJEE	02/23/2012
JANE GAST	03/08/2012
RAJ RAO RAJARAM	02/16/2012
GLEN SPREITZER	02/20/2012

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#### PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13711120

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PATENT 502639324 REEL: 031987 FRAME: 0543

Address Line 2: SUITE 600 Address Line 4: WAYNE, PENNSYLVANIA 19087					
ATTORNEY DOCKET NUMBER:	ROY/70050US1/ST				
NAME OF SUBMITTER:	LINDA J. REMER				
Signature:	/Linda J. Remer/				
Date:	01/16/2014				
Total Attachments: 8 source=70050USP - Executed Assignment#page1.tif source=70050USP - Executed Assignment#page2.tif source=70050USP - Executed Assignment#page3.tif source=70050USP - Executed Assignment#page4.tif source=70050USP - Executed Assignment#page5.tif source=70050USP - Executed Assignment#page6.tif source=70050USP - Executed Assignment#page7.tif source=70050USP - Executed Assignment#page8.tif					

PATENT REEL: 031987 FRAME: 0544

#### ROY/70050USP/ADN

ASSIGNMENT - Patent Application				Docket Number: JMYT-552USP		
Whereas, the Assignor, comprising the following named inventors:						
	Philip Gerald Blakemen				Gavin Michael Brown	
ASSIGNOR(s)/ INVENTOR(s)	3. <b>Sou</b>	pato Chatterjee		4,	Andrew Francis Chiffey	
	5. Jane	Gast		6.	Paul Richard Phillips	
	7. Raji	Rac Rajaram		8.	Gien Spreitzer	
9. Andrew Peter Walker 10				10.		
made an inventio	n entitled:	CATALYSED SUBSTRATE MONO	LITH	•••••		
for which a Provis		lication for Patent:				
is executed concurrently herewith was filed in the U.S. Patent and Trademark Office on <u>December 12, 2011,</u> as U.S. Provisional Patent Application No.: 61/569.523						
Johnson Matthey Public Limited Company ASSIGNEE (Full Name and Address) 5 <sup>th</sup> Floor 25 Farringdon Street London EC4A 4AB United Kingdom						

is desirous of acquiring the entire interest in and to said invention, the Provisional Application for Patent, and all Letters Patent to be obtained therefor,

Now, therefore, in consideration of the payment by Assignee to Assignor of a sum corresponding to One Dollar (\$1.00), and for other good and valuable consideration, the receipt of which is hereby acknowledged, Assignor, intending to be legally bound, hereby sells, assigns and transfers to Assignee, its successors and assigns, the full and exclusive right, title and interest in and to said invention, the Provisional Application for Patent, all other applications for Letters Patent for said invention, including all non-provisional applications for Letters Patent for said invention, and all divisions, continuations, and continuations-in-part thereof, all rights to claim priority based thereon, and all Letters Patent, including reissues, to be obtained therefor, including any and all foreign patent rights in this invention corresponding thereto.

Assignor hereby warrants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.

Assignor agrees it shall be legally bound, upon request of the Assignee or its successors or assigns or a legal representative thereof, to supply all information and evidence of which the Assignor has knowledge or possession, relating to the making and practice of said invention, to testify in any legal proceeding relating thereto, to execute all instruments proper to patent the invention in the United States of America and foreign countries in the name of the Assignee, and to execute all instruments proper to carry out the intent of this instrument.

If the invention requires a biological deposit, Assignor also grants to Assignee such control over any deposit made by Assignor as may be necessary to the validity of the patent rights assigned herein.

Page 1 of 3 Modified 2/6/03

# ASSIGNMENT - Patent Application

Docket Number: JMYT-552USP

Assignor authorizes Assignor's attorney to insert at the end hereof, the serial number and filing date of the aforesaid application for United States Letters Patent and/or the Attorney Docket or file designation for this application if not identified above.

If the Assignor includes more than one individual, these obligations shall apply to these individuals both individually and collectively.

In witness whereof, this Assignment is executed on the day indicated below.

*.	Typed or Printed	Vame	Signature	Date
	1. Philip Gerald Bla	keman		
	2. Gavin Michael B	'own	* Witness to Assignor #1  4  * Witness to Assignor #2	20/1/12
	3. Sougato Chatter	jee		
SIGNATURE	4. Andrew Francis	Chiffey	* Witness to Assignor #3  Adder Callerina  # A Callerina  * Witness to Assignor #4	19/1/2012
	5. Jane Gast			
	6. Paul Richard Ph	iiiips	* Witness to Assignor #5  * Witness to Assignor #6	18/1/12 18/11/2
Provisional Ap Serial No.:	plication Patent:	61/569,52	24	
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Page 2 of 3 Modified 2/6/03

ASSIGN	MENT - Pater	nt Applic	ation	Docket Number: JMY	<u>r-552USP</u>
	Typed or Printed	Name	Si	gnature	Date
	7. Raj Rao Rajaran	n			
			* Witness to	: Assignor #1	
	8. Glen Spreitzer				
			* Witness to	Assignor #2	
	9. Andrew Peter V	/alker	Ud.e.	·Libe	27/1/12
SIGNATURE			* Witness to	AssignoN#3	27/1/12
	10.				
		\N	* Witness b	o Assignor #6	
Provisional App	olication Patent:				
Serial No.:		61/669.523			
Filed:		December	12, 2011		
Attorney Docks	it Number:	JMYT-5521	<u> ISP</u>		
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Docket Number: JMYT-552USP

Assignor authorizes Assignor's attorney to insert at the end hereof, the serial number and filing date of the aforesaid application for United States Letters Patent and/or the Attorney Docket or file designation for this application if not identified above.

If the Assignor Includes more than one Individual, these obligations shall apply to these individuals both individually and collectively.

in witness whereof, this Assignment is executed on the day indicated below.

e	Typed or Printed	Name	Signature	Cate
	1. Philip Gerald Bio	skeman	1 Slateures	17.2.10
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	2. Gavin Michael S	irown		
			* Witness to Assignor #2	
	3. Sougato Chatte	rjee		***************************************
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	4. Andrew Francis	Chiffey		
			* Witness to Assigner #4	
	5. Jane Gast			
			* Witness to Assigner #5	
	6. Paul Richard P	inillips		***************************************
		**************	* Witness to Assignor #6	
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Attorney Docke	t Number:	JMYT-65	ZUSP	
Total Number o	f Assignment Pages	2	* Witness signature recommended,	mandatory for some countries

Page 2 of 3 Modified 2/6/03

# ASSIGNMENT - Patent Application

Docket Number: JMYT-562USP

Assignor authorizes Assignor's attorney to insert at the end hereof, the serial number and filing date of the aforesaid application for United States Letters Patent and/or the Attorney Docket or file designation for this application if not identified above.

If the Assignor includes more than one individual, these obligations shall apply to these individuals both individually and collectively.

In witness whereof, this Assignment is executed on the day indicated below.

	Typed or Printed	Name	Signature	Date
	1. Philip Gerald 81	akeman		
		***************************************	* Witness to Assigner #1	
	2. Gayin Michael E	irown		
			* Witness to Assignor #2	
	3. Sougeto Chatte	rjes	John Hayen	<u> 43/n</u>
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	4. Andrew Franch	s Chiffey		
			* Witness to Assignor #4	
	5. Jane Gast			
			* Witness to Assignor #5	
	6. Paul Richard P	hillips		
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			* Witness to Assignor #6	
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if the Assignor includes more than one individual, these obligations shall apply to these individuals both individually and collectively.

in witness whereof, this Assignment is executed on the day indicated below.

	<b>pr</b> -10,000	Typed or Printed	Name	Signature	Date
	1.	Philip Gerald Si	akeman	***************************************	***************************************
		<del>,</del>		* Witness to Assignor #1	
e.	2.	Gavin Michael E	กพวาย	THE STATE OF THE S	***************************************
				* Witness to Assignor #2	***************************************
	3.	Sougato Chatte	rjes	······································	\$100\$\$\$\$\$##############################
SIGNATURE		······································	****	* Witness to Assignor #3	***************************************
	4.	Andrew Francis	Chiffey	· · · · · · · · · · · · · · · · · · ·	***************************************
				* Witness to Assignor #4	
	5.	Jana Gast		Jane Gast Fillen Durkonsk	03/08/12
	S.	Paul Richard Pi	hillips	/* Witness to Assigner #8	
		······································	······································	* Witness to Assignor #6	***************************************
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	Typed or Printe	d Name	S	ignature	Date	
	7. Raj Reo Rajara	m	RARC	<u> </u>	1/12/2010	
			* Witness t	2 o Assignor #1	16/2/2012_	
	8. Gien Spreitzer		***************************************		***	
			* Witness t	a Assignor #2	***************************************	
	9. Andrew Peter Walker		***************************************		***************************************	
SIGNATURE		***************************************	* Witness	o Assigner #3		
	10.		***************************************	***************************************		
		***************************************	* Witness t	O Assignor #6		
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Serial No.:		<u>61/569,5</u>	23.			
Filed:		December 12, 2011				
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Page 3 of 3 Modified 2/6/03

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	Typed or Printed	i Name	S	ignature	~~~~~	Date
	7. Raj Rac Rajara	783	***************************************		XX0	
			* Witness b	Assignor #1		
	8. Glen Spreitzer	محمد ب		HA.		<u> 2/20/12</u> 2/22/12
	9. Andrew Peter V	Valker	* Witness t	o Assignor #2		
SIGNATURE		**	* Witness t	o Assignor #3	ne	
	10.					
			× Witness t	o Assignor #6		
Provisional App	silication Patent:		***************************************			***************************************
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Filed		December 12, 2011				
Attorney Docket Number:		JMYT-55				
Total Number of Assignment Pages		8	* Witness signeture recommended, mendatory for some countries			

**RECORDED: 01/16/2014** 

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