## 503825703 05/13/2016

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3872353

SUBMISSION TYPE:		NEW ASSIGNMENT		
NATURE OF CONVEYANCE:		ASSIGNMENT	ASSIGNMENT	
CONVEYING PARTY D	ΑΤΑ			
		Name	Execution Date	
RONG HE			12/09/2014	
STANISLAW PLECHA			12/09/2014	
MEENAKSHI S. KRISHN	IAMOOR	ТНҮ	12/15/2014	
BHARAT M. PATEL			12/09/2014	
RECEIVING PARTY DA	ТА			
Name:	ADVANCED REFINING TECHNOLOGIES LLC			
Street Address:	7500 GRACE DRIVE			
City:	COLUM	COLUMBIA		
State/Country:	MARYL	AND		
Postal Code:	21044			
PROPERTY NUMBERS				
Property Type		Number		
Property Type Application Number:	1	<b>Number</b> 5146598		
Application Number:				
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Application Number: CORRESPONDENCE D Fax Number: <i>Correspondence will be using a fax number, if p</i> Phone: Email: Correspondent Name:	ATA (! e sent to provided; (! a L 6	5146598 908)654-7866 <i>the e-mail address first; if that is uns</i> <i>if that is unsuccessful, it will be sent</i> 908) 518-6333 assignment@lernerdavid.com .DLK&M		
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Application Number: CORRESPONDENCE D Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 4:	ATA (! e sent to provided; (! a L 6 V	5146598 908)654-7866 <i>the e-mail address first; if that is uns</i> <i>if that is unsuccessful, it will be sent</i> 908) 518-6333 ussignment@lernerdavid.com .DLK&M 500 SOUTH AVENUE WEST VESTFIELD, NEW JERSEY 07090		
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Application Number: CORRESPONDENCE D Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 1: Address Line 4: ATTORNEY DOCKET NUNAME OF SUBMITTER: SIGNATURE: DATE SIGNED: Total Attachments: 4 source=Exeucted Assignments: 4	ATA (( e sent to provided; () a L 6 V JMBER:	5146598 908)654-7866 the e-mail address first; if that is unserviced if that is unsuccessful, it will be serviced 908) 518-6333 assignment@lernerdavid.com .DLK&M 500 SOUTH AVENUE WEST VESTFIELD, NEW JERSEY 07090 GRACE 3.3-016 CON I MELINDA C. CORMIER /Melinda C. Cormier/		

PATENT REEL: 038587 FRAME: 0125

	Docket Number (Optional)	
ASSIGNMENT OF UTILITY APPLICATION	GRACE 3.3-016 (E)	
Whereas, I. Rong He		
2452 W. Bayshore Road, Palo Alto, California 94303		
hereafter referred to as assignor, have with others invented certs	ain new and useful improvements in	
IMPROVED RESID HYDROTREATING CATALYST (	• • • • • • • • • • • • • • • • • • • •	
X for which an application for a United States Letters Pate		
Application Number		
for which an application for a United States Letters Pater		
x for which an International Application was filed on	June 20, 2013 , as	
PCT/US2013/046753 , designating the United	States.	
And		
Whereas, Advanced Refining Technologies LLC		
a corporation of Delaware herein referred to as "assignee" whos	e mailing address is	
is desirous of acquiring the entire right, title and interest in the sa	ame;	
said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its	atents for said invention claiming priority or be nd including all claims for damages by reason of s own use and the use of its successors, assim	
said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such prio Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest th representatives, heirs and assigns do hereby agree and covenar all original, divisional, continuation, reissue and other application assignments thereof to said assignee or its assigns, to communit known to the undersigned respecting said improvements, where legal proceedings in which any of said applications or patents in all rightful oaths, and to do generally everything necessary to all obtain patent protection for said improvements in all countries, t	United States of America and all other countri- latents for said invention claiming priority or be- ind including all claims for damages by reason of s own use and the use of its successors, assign- nity or benefit and the Commissioner of Paten itents on said improvements or resulting theref herein; and the undersigned for me and my int without further remuneration, to execute and ons for Letters Patent on said improvements a nicate to said assignee or its representatives a ever requested, to testify in any interferences of may become involved, to sign all lawful papers, id assignee, its successors, assigns and nomin	
applications and patents applied for or granted therefor in the said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such prior. Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest th representatives, heirs and assigns do hereby agree and covenar all original, divisional, continuation, reissue and other application assignments thereof to said assignee or its assigns, to communic known to the undersigned respecting said improvements, where legal proceedings in which any of said applications or patents in all rightful oaths, and to do generally everything necessary to ai obtain patent protection for said improvements in all countries, t and paid by said assignee.	United States of America and all other countri- vatents for said invention claiming priority or be- ind including all claims for damages by reason of s own use and the use of its successors, assign- nity or benefit and the Commissioner of Paten itents on said improvements or resulting theref herein; and the undersigned for me and my int without further remuneration, to execute and i ons for Letters Patent on said improvements a nicate to said assignee or its representatives a ever requested, to testify in any interferences o may become involved, to sign all lawful papers, id assignee, its successors, assigns and nomin the expenses incident to said applications to be	
said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such prior Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest the representatives, heirs and assigns do hereby agree and covenar all original, divisional, continuation, reissue and other application assignments thereof to said assignee or its assigns, to commune known to the undersigned respecting said improvements, where legal proceedings in which any of said applications or patents in all rightful oaths, and to do generally everything necessary to all obtain patent protection for said improvements in all countries, t and paid by said assignee.	United States of America and all other countri- vatents for said invention claiming priority or be- ind including all claims for damages by reason of s own use and the use of its successors, assign- nity or benefit and the Commissioner of Paten itents on said improvements or resulting theref herein; and the undersigned for me and my int without further remuneration, to execute and i ons for Letters Patent on said improvements a nicate to said assignee or its representatives a ever requested, to testify in any interferences o may become involved, to sign all lawful papers, id assignee, its successors, assigns and nomin the expenses incident to said applications to be	
said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such prior Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest the representatives, heirs and assigns do hereby agree and covenar all original, divisional, continuation, reissue and other application assignments thereof to said assignee or its assigns, to communic known to the undersigned respecting said improvements, where legal proceedings in which any of said applications or patents in all rightful oaths, and to do generally everything necessary to al obtain patent protection for said improvements in all countries, t and paid by said assignee.	United States of America and all other countri- vatents for said invention claiming priority or be- ind including all claims for damages by reason of s own use and the use of its successors, assign- nity or benefit and the Commissioner of Paten itents on said improvements or resulting theref herein; and the undersigned for me and my int without further remuneration, to execute and i ons for Letters Patent on said improvements a nicate to said assignee or its representatives a ever requested, to testify in any interferences o may become involved, to sign all lawful papers, id assignee, its successors, assigns and nomin the expenses incident to said applications to be	
said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such prio Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest th representatives, heirs and assigns do hereby agree and covenar all original, divisional, continuation, reissue and other applicatio assignments thereof to said assignee or its assigns, to commut known to the undersigned respecting said improvements, when legal proceedings in which any of said applications or patents in all rightful oaths, and to do generally everything necessary to ai obtain patent protection for said improvements in all countries, t and paid by said assignee. And I do hereby authorize my attorneys to insert on this deed the when known.	United States of America and all other countri- vatents for said invention claiming priority or be- and including all claims for damages by reason of sown use and the use of its successors, assign- brity or benefit and the Commissioner of Paten itents on said improvements or resulting theref herein; and the undersigned for me and my int without further remuneration, to execute and i- ons for Letters Patent on said improvements a ever requested, to testify in any interferences of may become involved, to sign all lawful papers, id assignee, its successors, assigns and nomin the expenses incident to said applications to be a filing date and application number of said appl	

PATENT REEL: 038587 FRAME: 0126

former PTO/SB/15 (8-00) Modified LOLK5M

	Docket Number (Optional)
ASSIGNMENT OF UTILITY APPLICATION	GRACE 3.3-016 (E)
Whereas, I. Stanislaw Plecha	of
10518 Vista Road, Columbia, Maryland, 21044	
hereafter referred to as assignor, have with others invented cert	· · · · · · · · · · · · · · · · · · ·
IMPROVED RESID HYDROTREATING CATALYST	CONTAINING TITANIA
X for which an application for a United States Letters Pate	ent was filed on
Application Number	
for which an application for a United States Letters Pater	nt was executed by me on
x for which an International Application was filed on	June 20, 2013 , as
PCT/US2013/046753 , designating the United	States.
And	
Whereas, Advanced Refining Technologies LLC	
a corporation of <u>Delaware</u> herein referred to as "assignee" whos	se mailing address is
7500 Grace Drive, Columbia, Maryland 21044	
is desirous of acquiring the entire right, title and interest in the sa	ame;
is acknowledged, and other good and valuable consideration, it assignee my entire right, title and interest for the United State invention and the aforesaid utility patent application and all of applications and patents applied for or granted therefor in the said invention, including without limitation all applications and p the aforesaid utility application pursuant to any law or treaty, ai infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such prior Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest the representatives, heirs and assigns do hereby agree and covena all original, divisional, continuation, reissue and other application assignments thereof to said assignee or its assigns, to commu- known to the undersigned respecting said improvements, when legal proceedings in which any of said applications or patents in all rightful oaths, and to do generally everything necessary to a obtain patent protection for said improvements in all countries, if and paid by said assignee.	es of America and all other countries in and to said original, divisional, continuation, substitute or reissue United States of America and all other countries, for patents for said invention claiming priority or benefit of nd including all claims for damages by reason of past is own use and the use of its successors, assigns and ority or benefit and the Commissioner of Patents and atents on said improvements or resulting therefrom to herein; and the undersigned for me and my legal int without further remuneration, to execute and deliver ions for Letters Patent on said improvements and all inclute to said assignee or its representatives all facts ever requested, to testify in any interferences or other may become involved, to sign all lawful papers, make aid assignee, its successors, assigns and nominees to
And I do hereby authorize my attorneys to insert on this deed the when known.	e filing date and application number of said application
<u>December 9,2014</u>	<u>humn haure</u>
Date	Stanislaw Plecha
Manten Moode	
<u>Matthew WoodS</u> Typed Name of Witness	
B	
X *Total of 4 forms are submitted.	
LE-315	

	former PTO/SB/15 (8-00) Modified LOLK&M
ASSIGNMENT OF UTU TV APPLICATION	Docket Number (Optional)
ASSIGNMENT OF UTILITY APPLICATION	GRACE 3.3-016 (E)
	•
Whereas, I, Meenakshi S. Krishnamoorthy	of
7218 Solar Walk, Columbia, Maryland 21046	VI
hereafter referred to as assignor, have with others invented certa	ain now and us of it improvements in
IMPROVED RESID HYDROTREATING CATALYST (	
x for which an application for a United States Letters Pate	ent was filed on
Application Number	
for which an application for a United States Letters Pater	nt was executed by me on ,
X for which an International Application was filed on	June 20, 2013 , as
PCT/US2013/046753 , designating the United	States.
And	
Whereas, Advanced Refining Technologies LLC	
a corporation of <u>Delaware</u> herein referred to as "assignee" whos	se mailing address is
7500 Grace Drive, Columbia, Maryland 21044	
is desirous of acquiring the entire right, title and interest in the sa	ame;
is acknowledged, and other good and valuable consideration, l assignee my entire right, title and interest for the United Stat invention and the aforesaid utility patent application and all of applications and patents applied for or granted therefor in the said invention, including without limitation all applications and patents the aforesaid utility application pursuant to any law or treaty, and infringement with the right to sue for and collect the same for it legal representatives, and including the right to claim such prior Trademarks is hereby authorized and requested to issue all said assignee herein, as assignee of the entire interest the representatives, heirs and assigns do hereby agree and covena all original, divisional, continuation, reissue and other application assignments thereof to said assignee or its assigns, to commu- known to the undersigned respecting said improvements, when legal proceedings in which any of said applications or patents and all rightful oaths, and to do generally everything necessary to a obtain patent protection for said improvements in all countries, and paid by said assignee.	es of America and all other countries in and to said original, divisional, continuation, substitute or reissue United States of America and all other countries, for patents for said invention claiming priority or benefit of nd including all claims for damages by reason of past is own use and the use of its successors, assigns and ority or benefit and the Commissioner of Patents and atents on said improvements or resulting therefrom to herein; and the undersigned for me and my legal int without further remuneration, to execute and deliver ions for Letters Patent on said improvements and all inicate to said assignee or its representatives all facts rever requested, to testify in any interferences or other may become involved, to sign all lawful papers, make aid assignee, its successors, assigns and nominees to the expenses incident to said applications to be borne
And I do hereby authorize my attorneys to insert on this deed th when known.	e filing date and application number of said application
12/15/2014	) ""www.
Date	Meenakshi S. Krishnamoorthy
A	
Witness	
CRISTIAN LIBANATI	
Typed Name of Witness	
x *Total of 4 forms are submitted.	

LD-515\

	former PTO/SB/16 (B-00) Modil Docket Number (Optional)
ASSIGNMENT OF UTILITY APPLICATION	GRACE 3.3-016 (E)
Whereas, I, Bharat M. Patel	
404 Shade Tree Place, Apt. E. Catonsville, Maryland 21	228
hereafter referred to as assignor, have with others invented certa	ain new and useful improvements in
IMPROVED RESID HYDROTREATING CATALYST C	ONTAINING TITANIA
x for which an application for a United States Letters Pate	ent was filed on
Application Number	
for which an application for a United States Letters Pater	
x for which an International Application was filed on	hipe 20, 2013 as
PCT/US2013/046753 , designating the United	States.
And	
Whereas, Advanced Refining Technologies LLC	an ann Martan a Martan a' A
a corporation of <u>Delaware</u> herein referred to as "assignee" whos 7500 Grace Drive, Columbia, Maryland 21044	e mailing address is
is desirous of acquiring the entire right, title and interest in the sa	ime '
the aforesaid utility application pursuant to any law or treaty, ar infringement with the right to sue for and collect the same for its legal representatives, and including the right to claim such pric Trademarks is hereby authorized and requested to issue all pa said assignee herein, as assignee of the entire interest the representatives, heirs and assigns do hereby agree and covenal all original, divisional, continuation, reissue and other applicati assignments thereof to said assignee or its assigns, to communi known to the undersigned respecting said improvements, when legal proceedings in which any of said applications or patents r all rightful oaths, and to do generally everything necessary to a obtain patent protection for said improvements in all countries, t	s own use and the use of its successors, assign ority or benefit and the Commissioner of Pate tents on said improvements or resulting there herein; and the undersigned for me and m nt without further remuneration, to execute and ons for Letters Patent on said improvements nicate to said assignee or its representatives ever requested, to testify in any interferences may become involved, to sign all lawful papers
and paid by said assignee.	
and paid by said assignee. And I do hereby authorize my attorneys to insert on this deed the when known. $\frac{12}{2} \sqrt{2} \sqrt{14}$	he expenses incident to said applications to b e filing date and application number of said app Shanal M Patter
And I do hereby authorize my attorneys to insert on this deed the	he expenses incident to said applications to b
And I do hereby authorize my attorneys to insert on this deed the	he expenses incident to said applications to b e filing date and application number of said app Shanal M Patter
And I do hereby authorize my attorneys to insert on this deed the when known. <u>12/?/14</u> Date Markul Morek	he expenses incident to said applications to b e filing date and application number of said app Shanal M Patter
And I do hereby authorize my attorneys to insert on this deed the when known. <u>12/2/14</u> Date <u>Markw</u> <u>Morek</u> Witness <u>Matthew</u> <u>Woods</u>	he expenses incident to said applications to b e filing date and application number of said app Shanal M Patter