

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT																												
NATURE OF CONVEYANCE:	ASSIGNMENT																												
CONVEYING PARTY DATA																													
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Walter David Vann</td> <td>12/12/2012</td> </tr> <tr> <td>Daniel Paul Leta</td> <td>12/12/2012</td> </tr> <tr> <td>Jonathan Martin McConnachie</td> <td>12/10/2012</td> </tr> <tr> <td>Richard Alan Demmin</td> <td>12/20/2012</td> </tr> <tr> <td>Douglas Wayne Hissong</td> <td>12/17/2012</td> </tr> <tr> <td>William C. Baird Jr.</td> <td>02/04/2013</td> </tr> <tr> <td>Roby Bearden Jr.</td> <td>01/14/2013</td> </tr> <tr> <td>James Ronald Bielenberg</td> <td>12/17/2012</td> </tr> <tr> <td>Howard Freund</td> <td>12/19/2012</td> </tr> <tr> <td>Chris Aaron Wright</td> <td>12/17/2012</td> </tr> <tr> <td>Michael Francis Raterman</td> <td>01/21/2013</td> </tr> <tr> <td>James Ronald Rigby</td> <td>01/06/2013</td> </tr> <tr> <td>Brandon Thomas Stone</td> <td>01/06/2013</td> </tr> </tbody> </table>		Name	Execution Date	Walter David Vann	12/12/2012	Daniel Paul Leta	12/12/2012	Jonathan Martin McConnachie	12/10/2012	Richard Alan Demmin	12/20/2012	Douglas Wayne Hissong	12/17/2012	William C. Baird Jr.	02/04/2013	Roby Bearden Jr.	01/14/2013	James Ronald Bielenberg	12/17/2012	Howard Freund	12/19/2012	Chris Aaron Wright	12/17/2012	Michael Francis Raterman	01/21/2013	James Ronald Rigby	01/06/2013	Brandon Thomas Stone	01/06/2013
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<table border="1"> <tr> <td>Name:</td> <td>ExxonMobil Research and Engineering Company</td> </tr> <tr> <td>Street Address:</td> <td>1545 Route 22 East</td> </tr> <tr> <td>Internal Address:</td> <td>P.O. Box 900</td> </tr> <tr> <td>City:</td> <td>Annandale</td> </tr> <tr> <td>State/Country:</td> <td>NEW JERSEY</td> </tr> <tr> <td>Postal Code:</td> <td>08801-0900</td> </tr> </table>		Name:	ExxonMobil Research and Engineering Company	Street Address:	1545 Route 22 East	Internal Address:	P.O. Box 900	City:	Annandale	State/Country:	NEW JERSEY	Postal Code:	08801-0900																
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PROPERTY NUMBERS Total: 1																													
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Property Type	Number																												
Application Number:	13693222																												
CORRESPONDENCE DATA																													
Fax Number:	9087303649																												

CH \$40.00 13693222

*Correspondence will be sent via US Mail when the fax attempt is unsuccessful.*

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Email: kimberly.m.shapiro@exxonmobil.com  
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Address Line 4: Annandale, NEW JERSEY 08801-0900

ATTORNEY DOCKET NUMBER:

2011EM385-US2

NAME OF SUBMITTER:

Bruce M. Bordelon

Total Attachments: 10

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source=2011EM385\_Executed\_NonProvisional\_Assignment#page10.tif

ASSIGNMENT  
INVENTOR or INVENTORS:

Walter David Vann  
Douglas Wayne Hissong  
Howard Freund  
Brandon Thomas Stone

Daniel Paul Leta  
William C. Baird, Jr.  
Chris Aaron Wright

Jonathan Martin McConnachie  
Roby Bearden, Jr.  
Michael Francis Raterman

Richard Alan Demmin  
James Ronald Bielenberg  
James Ronald Rigby

For good and valuable consideration, the undersigned person(s) named above, herein referred to as UNDERSIGNED, hereby agree(s) as follows:

1) UNDERSIGNED hereby assign(s) to ExxonMobil Research and Engineering Company (formerly Exxon Research and Engineering Company), a corporation of Delaware, its successors, legal representatives and assigns, herein referred to collectively as ASSIGNEE, the entire right, title and interest, for the United States and all foreign countries, in and to UNDERSIGNED's invention or improvement and to all patent applications and patents covering same which is described in a patent application entitled

**ALKALI METAL HYDROPROCESSING OF HEAVY OILS WITH ENHANCED REMOVAL OF COKE  
PRODUCTS**

said application having been executed on the 10, 12, 17, 19, 20 day(s) of December 2012  
6, 14, 21 January 2013  
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IN WITNESS WHEREOF, this assignment has been executed by UNDERSIGNED on the date opposite UNDERSIGNED's NAME.

Date 12/12/12

Inventor Walter David Vann (LS)  
Walter David Vann

Witness [Signature]

Date \_\_\_\_\_

Inventor \_\_\_\_\_ (LS)  
Daniel Paul Leta

Witness \_\_\_\_\_

Date \_\_\_\_\_

Inventor \_\_\_\_\_ (LS)  
Jonathan Martin McConnachie

Witness \_\_\_\_\_

Date \_\_\_\_\_

Inventor \_\_\_\_\_ (LS)  
Richard Alan Demmin

Witness \_\_\_\_\_

Date \_\_\_\_\_

Inventor \_\_\_\_\_ (LS)  
Douglas Wayne Hissong

Witness \_\_\_\_\_

Date \_\_\_\_\_

Inventor \_\_\_\_\_ (LS)  
William C. Baird, Jr.

Witness **PATENT**

ASSIGNMENT  
INVENTOR or INVENTORS:

Walter David Vann  
Douglas Wayne Hissong  
Howard Freund  
Brandon Thomas Stone

Daniel Paul Leta  
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Date _____	Inventor _____ (LS) Walter David Vann	Witness _____
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Date <u>12/10/12</u>	Inventor _____ (LS) Jonathan Martin McConnachie	Witness <u>Jade M. Marshall</u>
Date <u>12/20/12</u>	Inventor _____ (LS) Richard Alan Demmin	Witness <u>Jade M. Marshall</u>
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Date _____	Inventor _____ (LS) William C. Baird, Jr.	Witness _____

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Date \_\_\_\_\_ Inventor Jonathan Martin McConnachie (LS) Witness \_\_\_\_\_

Date \_\_\_\_\_ Inventor Richard Alan Demmin (LS) Witness \_\_\_\_\_

Date DEC. 17, 2012 Inventor Douglas Wayne Hisson (LS) Witness Stephanie Freeman

Date \_\_\_\_\_ Inventor William C. Baird, Jr. (LS) Witness \_\_\_\_\_

ASSIGNMENT  
INVENTOR or INVENTORS:

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Date \_\_\_\_\_ Inventor Richard Alan Demmin (LS) Witness \_\_\_\_\_

Date \_\_\_\_\_ Inventor Douglas Wayne Hissong (LS) Witness \_\_\_\_\_

Date 02/04/13 Inventor William C. Baird, Jr. (LS) Witness Chris A. Wright (LS)

**ASSIGNMENT**  
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**Howard Freund**  
**Brandon Thomas Stone**

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**PRODUCTS**

10, 12, 17, 19, 20  
6, 14, 21

December 2012  
January 2013  
February 2013

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Date January 14, 2013 Inventor Roby Bearden, Jr. (LS) Witness Patricia D. Pinse  
Roby Bearden, JR.

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
James Ronald Bielenberg

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Howard Freund

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Chris Aaron Wright

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Michael Francis. Raterman

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
James Ronald Rigby

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Roby Bearden, JR.

Date 12/17/2012 Inventor James Ronald Bielenberg (LS) Witness Richard Alan Demmin

James Ronald Bielenberg

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Howard Freund

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Chris Aaron Wright

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Michael Francis. Raterman

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

James Ronald Rigby

**PATENT**

**REEL: 029914 FRAME: 0586**

**ASSIGNMENT**  
**INVENTOR or INVENTORS:**

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Douglas Wayne Hissong  
Howard Freund  
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Roby Bearden, JR.

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
James Ronald Bielenberg

Date Dec 19, 2012 Inventor Howard Freund (LS) Witness James M Marshall  
Howard Freund

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
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1) UNDERSIGNED hereby assign(s) to ExxonMobil Research and Engineering Company (formerly Exxon Research and Engineering Company), a corporation of Delaware, its successors, legal representatives and assigns, herein referred to collectively as ASSIGNEE, the entire right, title and interest, for the United States and all foreign countries, in and to UNDERSIGNED's invention or improvement and to all patent applications and patents covering same which is described in a patent application entitled

**ALKALI METAL HYDROPROCESSING OF HEAVY OILS WITH ENHANCED REMOVAL OF COKE**

PRODUCTS  
10, 12, 17, 19, 20  
6, 14, 21  
A

said application having been executed on the \_\_\_\_\_ day(s) of December 2012, and being further identified as Case Number \_\_\_\_\_; and all rights of priority created by said application under provisions of international conventions or treaties.

2) UNDERSIGNED agree(s) upon the request of ASSIGNEE to execute any and all applications for and documents relating to obtaining patents and the prosecution thereof for said invention or improvement, and any continuations of such applications or substitutes therefore or registrations thereof, and any specific separate assignments of any of the above required for recording in the United States Patent and Trademark Office and any foreign patent office that ASSIGNEE may deem necessary or expedient.

3) UNDERSIGNED agree(s) that in the event of any application based on said assigned invention or improvement, or patent issued thereon, or any reissue or application for the reissue thereof, becoming involved in priority of invention proceedings, UNDERSIGNED will cooperate with ASSIGNEE to the best of the ability of UNDERSIGNED in the matter of preparing and executing all documents and giving and producing evidence in support thereof.

4) UNDERSIGNED agree(s) to perform upon ASSIGNEE's request any and all affirmative acts to obtain United States and foreign patents covering said invention or improvement and to vest all rights therein hereby conveyed to ASSIGNEE, as fully and as entirely as the same would have been held and enjoyed by UNDERSIGNED if this assignment and sale had not been made.

5) UNDERSIGNED hereby authorize(s) ASSIGNEE to insert in this instrument the date(s) on which UNDERSIGNED executed the Declaration for the above-referenced patent application.

IN WITNESS WHEREOF, this assignment has been executed by UNDERSIGNED on the date opposite UNDERSIGNED's NAME.

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Roby Bearden, JR.

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
James Ronald Bielenberg

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Howard Freund

Date 12/17/12 Inventor Chris Aaron Wright (LS) Witness Brandon Thomas Stone

Date 1/21/2013 Inventor Michael Francis Raterman (LS) Witness John M. Marshall

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
James Ronald Rigby

ASSIGNMENT  
INVENTOR or INVENTORS:

Walter David Vann  
Douglas Wayne Hissong  
Howard Freund  
Brandon Thomas Stone

Daniel Paul Leta  
William C. Baird, Jr.  
Chris Aaron Wright

Jonathan Martin McConnachie  
Roby Bearden, Jr.  
Michael Francis Raterman

Richard Alan Demmin  
James Ronald Bielenberg  
James Ronald Rigby

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**PRODUCTS**

10, 12, 17, 19, 20  
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4

December 2012  
January 2013  
February 2013

said application having been executed on the 4 day(s) of February 2013, and being further identified as Case Number \_\_\_\_\_; and all rights of priority created by said application under provisions of international conventions or treaties.

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Roby Bearden, JR.

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
James Ronald Bielenberg

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Howard Freund

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Chris Aaron Wright

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_  
Michael Francis Raterman

Date Jan. 6, 2013 Inventor James Ronald Rigby (LS) Witness Howard Freund

Family Number: 2011EM385-US2

**ASSIGNMENT**  
**INVENTOR or INVENTORS:**

Walter David Vann  
Douglas Wayne Hisson  
Howard Freund  
Brandon Thomas Stone

Daniel Paul Leta  
William C. Baird, Jr.  
Chris Aaron Wright

Jonathan Martin McConnachie  
Roby Bearden, Jr.  
Michael Francis Raterman

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James Ronald Bielenberg  
James Ronald Rigby

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PRODUCTS  
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said application having been executed on the December 2012 day(s) of January 2013, and being further identified as Case Number February 2013; and all rights of priority created by said application under provisions of international conventions or treaties.

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IN WITNESS WHEREOF, this assignment has been executed by UNDERSIGNED on the date opposite UNDERSIGNED's NAME.

Date 6-Jan-2013 Inventor Brandon T. Stone (LS) Witness [Signature]  
Brandon Thomas Stone

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_

Date \_\_\_\_\_ Inventor \_\_\_\_\_ (LS) Witness \_\_\_\_\_