PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT | |
|-----------------------|----------------|--|
| NATURE OF CONVEYANCE: | ASSIGNMENT | |

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| April D. Ross | 04/29/2012 |
| William J. Novak | 05/08/2012 |
| Thomas R. Halbert | 04/17/2012 |
| John P. Greeley | 04/10/2012 |

RECEIVING PARTY DATA

| 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 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13424683 |

CORRESPONDENCE DATA

Fax Number: 9087303649

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

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Correspondent Name: ExxonMobil Research & Engineering Co.

Address Line 1: 1545 Route 22 East Address Line 2: P.O. Box 900

Address Line 4: Annandale, NEW JERSEY 08801-0900

| ATTORNEY DOCKET NUMBER: | 2011EM083 US2 |
|-------------------------|-------------------|
| NAME OF SUBMITTER: | Bruce M. Bordelon |
| | PATENT |

502501946 REEL: 031241 FRAME: 0273

13/17/683

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|---|---------------------|--|
| Signature: | /Bruce M. Bordelon/ | |
| Date: | 09/19/2013 | |
| Total Attachments: 3 source=2011EM083 US2 USSN 13-424683 ASSIGNMENT#page1.tif source=2011EM083 US2 USSN 13-424683 ASSIGNMENT#page2.tif source=2011EM083 US2 USSN 13-424683 ASSIGNMENT#page3.tif | | |

PATENT REEL: 031241 FRAME: 0274

| USSN | 13/424,683 |
|--------|------------|
| Filed: | 3/20/12 |

ASSIGNMENT INVENTOR or INVENTORS:

April D. Ross

Thomas R. Halbert

William J. Novak

John P. Greeley

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 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.

| HYDROPROCESSING METHODS UTILIZING CARBON | OXIDE-TOLERANT CA | TALYSTS |
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| 840 | May | 2012 |

said application having been executed on the 10⁷⁶ 17⁷⁶ 24 day(s) of April 2012, and being further identified as Case Number 2011EM0 83-US2; 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 therefor 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.

| 0000 4/29/12 | Inventor (44) D. Ross April D. Ross | (l.S) | Wilmess Wesly Sones 4/28/12 |
|--------------|-------------------------------------|-------|-----------------------------|
| Date | InventorThômas R. Halbert | (1.5) | Witness |
| Date 5/8/2 | Insentor William I. Novak | (LS) | Women Sura Dence |
| Dais | John P. Greeley | (LS) | Witness |
| Date | Inventor | (LS) | Witness |

| USSN | 13/424,683 |
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| Filed: | 3/20/12 |

ASSIGNMENT INVENTOR or INVENTORS:

April D. Ross

Date

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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 HYDROPROCESSING METHODS UTILIZING CARBON OXIDE-TOLERANT CATALYSTS said application having been executed on the 10 17 29 day(s) of A 20 20 20 and being further identified as Case Number 2011EMO 83-US2; and all rights of priority dreated 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 therefor 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. April D. Ross Inventor William J. Novak Date John P. Greeley

Inventor_____(LS)

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ASSIGNMENT INVENTOR or INVENTORS:

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Thomas R. Halbert

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| said application having been exe further identified as Case Numb provisions of international conve | | day(s) of A and all rights of priority | and being and being created by said application under | | |
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| N WITNESS WHEREOF, this NAME. | s assignment has been execut | ed by UNDERSIGNE | D on the date opposite UNDERSIGNED's | | |
| Sure | InventorApril D. Ross | (1.5) | Witness | | |
| Sate | Inventor Thomas R, Halbert | (2.5) | Witness | | |
|)ate | InveniorWilliam J. Novak | | Witness | | |
| nus April 10, 3012 | Inventor 1 & 157 / Sohn P. Greeley | ulez 1189 | Warness Carrier Carrie | | |
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PATENT REEL: 031241 FRAME: 0277

RECORDED: 09/19/2013