PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4958174

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

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------------|----------------|
| AVRAM M. BUCHBINDER | 08/16/2017 |
| STANLEY J. FREY | 08/31/2017 |
| HAYIM ABREVAYA | 08/28/2017 |
| FALAAH FALIH | 08/16/2017 |

RECEIVING PARTY DATA

| Name: | UOP LLC |
|-------------------|------------------------|
| Street Address: | 25 EAST ALGONQUIN ROAD |
| Internal Address: | PATENT DEPARTMENT |
| City: | DES PLAINES |
| State/Country: | ILLINOIS |
| Postal Code: | 60017 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15783777 |

CORRESPONDENCE DATA

Fax Number: (847)391-2387

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: (847) 391-2051

Email: ip.docketclerk@honeywell.com

Correspondent Name: HONEYWELL INTERNATIONAL INC.

Address Line 1: 115 TABOR RD

Address Line 2: PO BOX 377 MAIL STOP 4D3

Address Line 4: MORRIS PLAINS, NEW JERSEY 07950

| ATTORNEY DOCKET NUMBER: | H0053873-01-8251 |
|-------------------------|-----------------------|
| NAME OF SUBMITTER: | GERALYN M. MCFADDEN |
| SIGNATURE: | /Geralyn M. McFadden/ |
| DATE SIGNED: | 05/11/2018 |
| | |

Total Attachments: 8

PATENT REEL: 045782 FRAME: 0346

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| source=2017-10-13-USA-H0053873-01-Assignment-SIGNED-copy-of-parents#page8.tif | |

PATENT REEL: 045782 FRAME: 0347

WHEREAS, the undersigned inventor(s) (hereinafter individually and collectively referred to as "ASSIGNOR") has invented new and useful improvements in:

ALIPHATIC CRACKING AND DEALKYLATION WITH HYDROGEN DILUENT

| for which application for patent in the United States: |
|--|
| has been executed on even date herewith; |
| was executed on; |
| _X_ was filed on <u>12/27/2016_</u> and assigned U.S. Appl. No. <u>62/439,337_</u> ; _X_ was filed on <u>10/13/2017_</u> and assigned U.S. Appl. No. <u>15/783,777_</u> ; |
| AND WHEREAS, the "Assigned Property" shall mean (i) the above-identified United States application for patent (the "Application"), (ii) all inventions disclosed in the Application, (iii) any and all applications for patent throughout the world directed to the subject matter of the Application, (iv) the right of priority arising from the Application or from such other applications, under the Paris Convention for the Protection of Industrial Property or under relevant laws, treaties, conventions or bilateral and multilateral |
| agreements, in any jurisdiction, (v) any and all patents throughout the world resulting from the Application or such other application(s) for patents, and (vi) any and all claims against third parties in connection with any of the rights assigned by this Agreement; |
| AND WHEREAS, UOP LLC, a Delaware Limited Liability Company having a place of business at 25 East Algonquin Road, Des Plaines, IL 60017-5017, its successors and assigns (hereinafter individually and collectively referred to as "ASSIGNEE"), is desirous of acquiring ASSIGNOR's entire right, title, and interest in and to and resulting from said Assigned Property and in general all property rights included therein; |
| NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR does hereby irrevocably and unconditionally assign and transfer unto ASSIGNEE ASSIGNOR's entire right, title and interest in and to and resulting from the Assigned Property, and hereby authorizes and requests the Commissioner of Patents to issue said patent to ASSIGNEE for the sole use and benefit of ASSIGNEE; ASSIGNEE hereby accepts such transfer and assignment; |
| AND ASSIGNOR FURTHERMORE authorizes ASSIGNEE, or anyone it may properly designate, to insert on each page of this instrument (where indicated) the filing date and application number of said Application when known; |
| AND ASSIGNOR AGREES, FURTHERMORE, upon request of ASSIGNEE, and without further remuneration, but at no expense to ASSIGNOR, that ASSIGNOR or ASSIGNOR'S heirs, executors, or administrators will provide all reasonable assistance to obtain, maintain, and assert the fullest measure of legal protection that ASSIGNEE desires to obtain or assert for the Assigned Property, including executing any and all papers desired by ASSIGNEE for the filing and granting of patent rights in the Assigned Property, the perfecting of title in ASSIGNEE, and in enforcing any rights in the Assigned Property. This instrument is executed by, and shall be binding upon ASSIGNOR, and ASSIGNOR's heirs, executors and administrators, for the uses and purposes above set forth and referred to and shall inure to the benefit of ASSIGNEE or anyone it may properly designate. |
| If any provision of this assignment is held by any court to be unenforceable, such provision shall be interpreted to accomplish the objectives of the original provision to the fullest extent allowed by law and the remainder of this assignment shall remain in full force and effect. |
| This assignment shall be construed, governed, interpreted and applied in accordance with the laws of the State of Delaware, United States of America. |
| PCT Application No. filed |

PATENT REEL: 045782 FRAME: 0348

Maryann Maas

Assistant Secretary - Patent

EXECUTED on behalf of ASSIGNEE and effective as of the latest date of the ASSIGNOR signature(s) below:

| UOP LLC | | |
|--|------------------|---------|
| EXECUTED as of the date(s) set forth below on behalf | of the ASSIGNOR: | 8/16/17 |
| ₩vram M. Buchbinder | Date: | l |
| Stanley J. Frey | - Date: | |
| Hayim Abrevaya | - | |
| Falaah Falih | _ Date: | |

| PCT Application No. | filed | |
|---------------------|-------|--|
| | | |

for which application for patent in the United States:

WHEREAS, the undersigned inventor(s) (hereinafter individually and collectively referred to as "ASSIGNOR") has invented new and useful improvements in:

ALIPHATIC CRACKING AND DEALKYLATION WITH HYDROGEN DILUENT

| has been executed on even date herewith; |
|--|
| was executed on; |
| X was filed on 12/27/2016 and assigned U.S. Appl. No. 62/439,337; |
| X was filed on 10/13/2017 and assigned U.S. Appl. No. 15/783,777; |
| AND WHEREAS, the "Assigned Property" shall mean (i) the above-identified United States application for patent (the "Application"), (ii) all inventions disclosed in the Application, (iii) any and all applications for patent throughout the world directed to the subject matter of the Application, (iv) the right of priority arising from the Application or from such other applications, under the Paris Convention for the Protection of Industrial Property or under relevant laws, treaties, conventions or bilateral and multilateral agreements, in any jurisdiction, (v) any and all patents throughout the world resulting from the Application or such other application(s) for patents, and (vi) any and all claims against third parties in connection with any of the rights assigned by this Agreement; |
| AND WHEREAS, UOP LLC, a Delaware Limited Liability Company having a place of business at 25 East Algonquin Road, Des Plaines, IL 60017-5017, its successors and assigns (hereinafter individually and collectively referred to as "ASSIGNEE"), is desirous of acquiring ASSIGNOR's entire right, title, and interest in and to and resulting from said Assigned Property and in general all property rights included therein; |
| NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR does hereby irrevocably and unconditionally assign and transfer unto ASSIGNEE ASSIGNOR's entire right, title and interest in and to and resulting from the Assigned Property, and hereby authorizes and requests the Commissioner of Patents to issue said patent to ASSIGNEE for the sole use and benefit of ASSIGNEE; ASSIGNEE hereby accepts such transfer and assignment; |
| AND ASSIGNOR FURTHERMORE authorizes ASSIGNEE, or anyone it may properly designate, to insert on each page of this instrument (where indicated) the filing date and application number of said Application when known; |
| AND ASSIGNOR AGREES, FURTHERMORE, upon request of ASSIGNEE, and without further remuneration, but at no expense to ASSIGNOR, that ASSIGNOR or ASSIGNOR'S heirs, executors, or administrators will provide all reasonable assistance to obtain, maintain, and assert the fullest measure of legal protection that ASSIGNEE desires to obtain or assert for the Assigned Property, including executing any and all papers desired by ASSIGNEE for the filing and granting of patent rights in the Assigned Property, the perfecting of title in ASSIGNEE, and in enforcing any rights in the Assigned Property. This instrument is executed by, and shall be binding upon ASSIGNOR, and ASSIGNOR's heirs, executors and administrators, for the uses and purposes above set forth and referred to and shall inure to the benefit of ASSIGNEE or anyone it may properly designate. |
| If any provision of this assignment is held by any court to be unenforceable, such provision shall be interpreted to accomplish the objectives of the original provision to the fullest extent allowed by law and the remainder of this assignment shall remain in full force and effect. |
| This assignment shall be construed, governed, interpreted and applied in accordance with the laws of the State of Delaware, United States of America. |
| PCT Application No. |

PATENT REEL: 045782 FRAME: 0350

EXECUTED on behalf of ASSIGNEE and effective as of the latest date of the ASSIGNOR signature(s) below:

| Manjon Moso | | |
|---|---------------|--|
| Maryann Maas Assistant Secretary – Patent UOP LLC | | |
| EXECUTED as of the date(s) set forth below on behalf of the | ASSIGNOR: | |
| Avram M. Buchbinder | Date: | |
| Stanley J. Frey | Date: 6-31-17 | |
| Hayim Abrevaya | Date: | |
| Falaah Falih | Date: | |

| PCT Application No. | | filed | |
|---------------------|--|-------|--|
|---------------------|--|-------|--|

for which application for patent in the United States:

WHEREAS, the undersigned inventor(s) (hereinafter individually and collectively referred to as "ASSIGNOR") has invented new and useful improvements in:

ALIPHATIC CRACKING AND DEALKYLATION WITH HYDROGEN DILUENT

| has been executed on even date herewith; |
|--|
| was executed on; _X_ was filed on12/27/2016 and assigned U.S. Appl. No62/439,337_; |
| X was filed on 10/13/2017 and assigned U.S. Appl. No. 15/783,777; |
| |
| AND WHEREAS, the "Assigned Property" shall mean (i) the above-identified United States application for patent (the "Application"), (ii) all inventions disclosed in the Application, (iii) any and all applications for patent throughout the world directed to the subject matter of the Application, (iv) the right of priority arising from the Application or from such other applications, under the Paris Convention for the Protection of Industrial Property or under relevant laws, treaties, conventions or bilateral and multilateral agreements, in any jurisdiction, (v) any and all patents throughout the world resulting from the Application or such other application(s) for patents, and (vi) any and all claims against third parties in connection with any of the rights assigned by this Agreement; |
| AND WHEREAS, UOP LLC, a Delaware Limited Liability Company having a place of business at 25 |
| East Algonquin Road, Des Plaines, IL 60017-5017, its successors and assigns (hereinafter individually and collectively referred to as "ASSIGNEE"), is desirous of acquiring ASSIGNOR's entire right, title, and interest in and to and resulting from said Assigned Property and in general all property rights included therein; |
| NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are |
| hereby acknowledged, ASSIGNOR does hereby irrevocably and unconditionally assign and transfer unto ASSIGNEE ASSIGNOR's entire right, title and interest in and to and resulting from the Assigned Property, and hereby authorizes and requests the Commissioner of Patents to issue said patent to ASSIGNEE for the sole use and benefit of ASSIGNEE; ASSIGNEE hereby accepts such transfer and assignment; |
| AND ASSIGNOR FURTHERMORE authorizes ASSIGNEE, or anyone it may properly designate, to insert on each page of this instrument (where indicated) the filing date and application number of said Application when known; |
| AND ASSIGNOR AGREES, FURTHERMORE, upon request of ASSIGNEE, and without further remuneration, but at no expense to ASSIGNOR, that ASSIGNOR or ASSIGNOR'S heirs, executors, or administrators will provide all reasonable assistance to obtain, maintain, and assert the fullest measure of legal protection that ASSIGNEE desires to obtain or assert for the Assigned Property, including executing any and all papers desired by ASSIGNEE for the filing and granting of patent rights in the Assigned Property, the perfecting of title in ASSIGNEE, and in enforcing any rights in the Assigned Property. |
| This instrument is executed by, and shall be binding upon ASSIGNOR, and ASSIGNOR's heirs, executors and administrators, for the uses and purposes above set forth and referred to and shall inure to the benefit of ASSIGNEE or anyone it may properly designate. |
| If any provision of this assignment is held by any court to be unenforceable, such provision shall be interpreted to accomplish the objectives of the original provision to the fullest extent allowed by law and the remainder of this assignment shall remain in full force and effect. |
| This assignment shall be construed, governed, interpreted and applied in accordance with the laws of the State of Delaware, United States of America. |
| |
| PCT Application No. |

PATENT REEL: 045782 FRAME: 0352

ASSIGNMENT

Page 2 of 2

Honeywell Docket No. H0053873-8251 H0053873-01-8251

EXECUTED on behalf of ASSIGNEE and effective as of the latest date of the ASSIGNOR signature(s) below:

| Maryon Moor | |
|---|-----------------------|
| Maryann Maas Assistant Secretary – Patent UOP LLC | |
| EXECUTED as of the date(s) set forth below on behalf | of the ASSIGNOR: |
| Avram M. Buchbinder | Date: |
| Stanley J. Frey | Date: |
| Haylm Abrevaya | Date: August 28, 2017 |
| Falaah Falih | Date: |

WHEREAS, the undersigned inventor(s) (hereinafter individually and collectively referred to as "ASSIGNOR") has invented new and useful improvements in:

ALIPHATIC CRACKING AND DEALKYLATION WITH HYDROGEN DILUENT

| has been executed on even date herewith; |
|--|
| nas som skedata sk et all adde here man, |
| was executed on; |
| X was filed on 12/27/2016 and assigned U.S. Appl. No. 62/439,337; |
| X was filed on 10/13/2017 and assigned U.S. Appl. No. 15/783,777; |
| AND WHEREAS, the "Assigned Property" shall mean (i) the above-identified United States application for patent (the "Application"), (ii) all inventions disclosed in the Application, (iii) any and all applications for patent throughout the world directed to the subject matter of the Application, (iv) the right of priority arising from the Application or from such other applications, under the Paris Convention for the Protection of Industrial Property or under relevant laws, treaties, conventions or bilateral and multilateral agreements, in any jurisdiction, (v) any and all patents throughout the world resulting from the Application or such other application(s) for patents, and (vi) any and all claims against third parties in connection with any of the rights assigned by this Agreement; |
| AND WHEREAS, UOP LLC, a Delaware Limited Liability Company having a place of business at 25 East Algonquin Road, Des Plaines, IL 60017-5017, its successors and assigns (hereinafter individually and collectively referred to as "ASSIGNEE"), is desirous of acquiring ASSIGNOR's entire right, title, and interest in and to and resulting from said Assigned Property and in general all property rights included therein; |
| NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR does hereby irrevocably and unconditionally assign and transfer unto ASSIGNEE ASSIGNOR's entire right, title and interest in and to and resulting from the Assigned Property, and hereby authorizes and requests the Commissioner of Patents to issue said patent to ASSIGNEE for the sole use and benefit of ASSIGNEE; ASSIGNEE hereby accepts such transfer and assignment; |
| AND ASSIGNOR FURTHERMORE authorizes ASSIGNEE, or anyone it may properly designate, to insert on each page of this instrument (where indicated) the filing date and application number of said Application when known; |
| AND ASSIGNOR AGREES, FURTHERMORE, upon request of ASSIGNEE, and without further remuneration, but at no expense to ASSIGNOR, that ASSIGNOR or ASSIGNOR'S heirs, executors, or administrators will provide all reasonable assistance to obtain, maintain, and assert the fullest measure of legal protection that ASSIGNEE desires to obtain or assert for the Assigned Property, including executing any and all papers desired by ASSIGNEE for the filing and granting of patent rights in the Assigned Property, the perfecting of title in ASSIGNEE, and in enforcing any rights in the Assigned Property. This instrument is executed by, and shall be binding upon ASSIGNOR, and ASSIGNOR's heirs, executors and administrators, for the uses and purposes above set forth and referred to and shall inure to |
| the benefit of ASSIGNEE or anyone it may properly designate. If any provision of this assignment is held by any court to be unenforceable, such provision shall be |
| interpreted to accomplish the objectives of the original provision to the fullest extent allowed by law and the remainder of this assignment shall remain in full force and effect. |
| This assignment shall be construed, governed, interpreted and applied in accordance with the laws of the State of Delaware, United States of America. |
| PCT Application No filed |

(Rev.03/20/2012)
PATENT
REEL: 045782 FRAME: 0354

ASSIGNMENT

Page 2 of 2

Honeywell Docket No. H0053873-8251 H0053873-01-8251

EXECUTED on behalf of ASSIGNEE and effective as of the latest date of the ASSIGNOR signature(s) below:

| Maryon Mood | | |
|---|------------------|-----------|
| Maryann Maas Assistant Secretary – Patent UOP LLC | | |
| EXECUTED as of the date(s) set forth below on behalf | of the ASSIGNOR: | |
| Avram M. Buchbinder | Date: | |
| Stanley J. Frey | Date: | |
| Hayim Abrevaya | Date: | |
| July Jelih Falah Falih | Date: | 8/16/2017 |

| PCT Application No. | | filed | |
|---------------------|--|-------|--|
|---------------------|--|-------|--|

(Rev.03/20/2012)

PATENT REEL: 045782 FRAME: 0355