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PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------------------|----------------|
| LAURA OLIVIA ALEMÁN VÁZQUEZ | 01/12/2018 |
| JOSÉ LUIS CANO DOMÍNGUEZ | 01/12/2018 |
| FEDERICO JIMÉNEZ CRUZ | 01/12/2018 |
| JOSÉ LUIS GARCÍA GUTIÉRREZ | 01/12/2018 |
| FIDENCIO HERNÁNDEZ PÉREZ | 01/12/2018 |
| MARÍA TERESA MARES GALLARDO | 01/12/2018 |

RECEIVING PARTY DATA

| Name: | INSTITUTO MEXICANO DEL PETRÓLEO | |
|-------------------|---|--|
| Street Address: | AV. EJE CENTRAL LÁZARO CÁRDENAS NORTE NO. 152 | |
| Internal Address: | SAN BARTOLO ATEPEHUACÁN, | |
| City: | MEXICO CITY | |
| State/Country: | MEXICO | |
| Postal Code: | 07730 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15225618 |

CORRESPONDENCE DATA

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| ATTORNEY DOCKET NUMBER: | 209949-9008-US00 | |
|-------------------------|------------------|--|
| NAME OF SUBMITTER: | LISA L. MUELLER | |
| SIGNATURE: | /lisa I mueller/ | |
| DATE SIGNED: | 01/19/2018 | |

PATENT REEL: 044672 FRAME: 0049

Total Attachments: 2

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> PATENT REEL: 044672 FRAME: 0050

ASSIGNMENT

WHEREAS, Laura Olivia ALEMÁN VÁZQUEZ, José Luis CANO DOMÍNGUEZ, Federico JIMÉNEZ CRUZ, José Luis GARCÍA GUTIÉRREZ, Fidencio HERNÁNDEZ PÉREZ, and María Teresa MARES GALLARDO, hereinafter called the "Assignors" have made the invention described in the United States patent application entitled "USE OF POLYMERS AS HYDROGEN DONORS HETEROGENEOUS IN IMPROVING HEAVY CRUDES AND EXTRA-HEAVY CRUDES" that has a U.S. Patent Application Number of 15/225,618, filed on August 1, 2016.

WHEREAS, INSTITUTO MEXICANO DEL PETRÓLEO, a corporation, having a place of business at Av. Eje Central Lázaro Cárdenas Norte No. 152, San Bartolo Atepehuacán, C.P.07730, Mexico City, Mexico, hereinafter called the "Assignee", desires to acquire the entire right, title and interest in and to the invention and to the patent application identified above, and all patents, foreign and domestic, which may be obtained for said invention, as set forth below.

NOW THEREFORE, in exchange for valuable and legally sufficient consideration, the Assignors have sold, assigned and transferred, and by these presents do sell, assign and transfer to the Assignee, the entire right, title and interest for the United States and elsewhere in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States and elsewhere; together with the entire right, title and interest in and to said invention and all patent applications, patents, utility models and designs therefore in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest in and to all continuations, divisions, renewals and extensions of any of the patent applications, patents, utility models and designs defined above; to have and to hold for sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term or terms for all such patents.

The Assignors hereby covenant and agree, for both the Assignors and Assignors' legal representative, that Assignors have the full right to convey the interest assigned by this Assignment; and that the Assignors will assist the Assignee in the prosecution of the patent applications identified above, in the making and prosecution of any other applications that the Assignee may elect to make covering the invention identified above, in vesting in the Assignee like exclusive title in and to all such other patent applications and patents, in the prosecution of any interference which may arise involving said invention, or any such patent application or patent, and in assisting Assignee in enforcement of any rights arising out of the Assignment; and that the Assignors will execute and deliver to the Assignee any and all additional papers which may be requested by the Assignee to carry out the terms of this Agreement.

The Commissioner of Patents and Trademarks is hereby authorized and requested to issue patents to the Assignee in accordance with the terms of this Assignment.

IN TESTIMONY WHEREOF, the Assignor(s) has executed this agreement.

DATED: 12/01/18

DATED: 12/01/18

DATED: 12/01/18

DATED: 12/01/18

DATED: 12/01/18

DATED: 12/01/18

Laura Olivia ALEMÁN VÁZQUEZ

José Luis CANO DOMÍNGUEZ

Federico JINÉNEZ CRUZ

José Luis GARCIA GUTIÉRREZ

Fidencio HERNANDEZ PÉREZ

María Teresa MARES GALLARDO