

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SAUDI ARAMCO UPSTREAM TECHNOLOGY COMPANY	03/24/2022

RECEIVING PARTY DATA

Name:	SAUDI ARABIAN OIL COMPANY
Street Address:	1 EASTERN AVENUE
City:	DHAHRAN
State/Country:	SAUDI ARABIA
Postal Code:	31311

PROPERTY NUMBERS Total: 45

Property Type	Number
Application Number:	17369149
Application Number:	17466192
Application Number:	17494387
Application Number:	17522437
Application Number:	17522445
Application Number:	17454176
Application Number:	17454181
Application Number:	17394813
Application Number:	17496608
Application Number:	63277022
Application Number:	17522145
Application Number:	17453285
Application Number:	17453290
Application Number:	17550267
Application Number:	17550631
Application Number:	17540013
Application Number:	17539900
Application Number:	17457215
Application Number:	17517195
Application Number:	63239014

PATENT

Property Type	Number
Application Number:	17513510
Application Number:	17547627
Application Number:	17549743
Application Number:	17551959
Application Number:	17547112
Application Number:	17643989
Application Number:	17548752
Application Number:	17550069
Application Number:	17549267
Application Number:	17551051
Application Number:	17550653
Application Number:	17550638
Application Number:	17643252
Application Number:	17643931
Application Number:	17548837
Application Number:	17548858
Application Number:	17549062
Application Number:	17543348
Application Number:	17551031
Application Number:	17551913
Application Number:	17553229
Application Number:	17643983
Application Number:	17644641
Application Number:	63289308
Application Number:	17550302

CORRESPONDENCE DATA

Fax Number: (877)769-7945
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ATTORNEY DOCKET NUMBER:	38136-0001001
NAME OF SUBMITTER:	KIMBERLEY LARSON-HERMAN
SIGNATURE:	/Kimberley Larson-Herman/

DATE SIGNED:

06/01/2022

Total Attachments: 9

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ASSIGNMENT

This PATENT ASSIGNMENT (“ASSIGNMENT”), dated as of March 24, 2022 (“Effective Date”), is made and entered into by and between **SAUDI ARAMCO UPSTREAM TECHNOLOGY COMPANY (“SAUTC” or “ASSIGNOR”)**, a Corporation organized and existing under the laws of Saudi Arabia and having a place of business at 1 Eastern Avenue Dhahran Saudi Arabia 31311, and **SAUDI ARABIAN OIL COMPANY (“SAO” or “ASSIGNEE”)**, a Corporation organized and existing under the laws of Saudi Arabia and having a place of business at 1 Eastern Avenue Dhahran Saudi Arabia 31311.

WHEREAS, SAUTC is the sole owner of certain patent applications mentioned in Appendix A (“the Patent Applications”); and

WHEREAS, SAUTC is willing and able to sell, convey, assign, and transfer, to SAO on the Effective Date of this ASSIGNMENT, all right, title, and interest, worldwide, in the Patent Applications; and

WHEREAS, SAO is desirous of acquiring the Patent Applications, including all right, title, and interest in the Patent Applications in exchange for mutually agreed upon consideration.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the sufficiency of which is hereby acknowledged, the parties agree as follows:

I. CONVEYANCE OF THE PATENT APPLICATIONS

a. SAUTC does hereby sell, assign and transfer to SAO, its successors, assigns and other legal representatives, and SAO does hereby accept, the entire right, title and interest, worldwide, in and to the Patent Applications, including, without limitation, the rights to: (i) file and prosecute, in its own name wherever so permitted by law or in the name of SAO wherever necessary, patent applications, including corresponding and continuing applications, reissues, re-examinations, certificates of invention, and the like, based on any of the Patent Applications; (ii) to claim priority to any of the Patent Applications pursuant to the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and (iii) to protect and enforce any of the foregoing, including, without limitation, all rights to income, royalties, damages and payments now due or hereafter due or payable in respect thereto, and all rights of recovery and of legal action for past or future infringements and of interference proceedings and reexaminations involving any of the foregoing. SAUTC acknowledges receipt of fair and adequate consideration for this Assignment.

b. SAUTC shall, when requested by SAO and at no cost to SAUTC, (i) execute or cause to be executed all rightful oaths, assignments, and powers of attorney to SAO or to agents and legal representatives of SAO, and all other papers necessary and proper to carry out the intent and purpose of this Assignment, (ii) execute all papers necessary in connection with the Patent Applications, and any continuing, divisional, reissue, reexamination or other

corresponding application thereof or post-grant proceeding relating thereto and to execute any separate assignment in connection with any such application as SAO may deem necessary or expedient; and (iii) perform all affirmative acts that may be necessary to obtain a grant of a valid patent to SAO on any of the inventions claimed or disclosed in the Patent Applications.

c. SAUTC agrees that SAO may, at its discretion, record this Assignment with the United States Patent Office or a Patent Office in any other jurisdiction.

2. **REPRESENTATIONS AND WARRANTIES**

a. SAUTC represents that it is the owner of the Patent Applications, and of all foreign and domestic patents, patent applications, including continuation-in-part applications, reissues, re-examinations, certificates of invention, and the like that derive priority from, or claim the benefit of the filing date of, the Patent Applications and of all new and useful inventions and improvements that are disclosed in the Patent Applications.

3. **PARAGRAPH HEADINGS**

The paragraph headings are inserted only for purpose of reference. Such captions shall not affect the scope, meaning or intent of the provisions of this Assignment nor shall such headings otherwise be given any legal effect.

4. **ASSIGNMENT BINDING**

This Assignment shall bind the heirs, releases, personal representatives, successors and assigns of the Parties to this Assignment and inure to the benefit of their agents, directors, officers, employees, attorneys, successors and assigns, except as specifically excluded herein.

5. **ENTIRE AGREEMENT**

This Assignment contains the entire agreement between the Parties hereto and constitutes the complete, final and exclusive embodiment of their agreement with respect to the subject matters covered in this Assignment. All prior or contemporaneous agreements, understandings, representations, duties, obligations, and statements, oral or written, are merged into, terminated and/or superseded by this Assignment.

6. **COUNTERPARTS**

This Assignment may be executed in two or more counterparts. Facsimile signatures and electronic signatures shall be acceptable as original signatures.

7. **SEVERABILITY**

In the event that for any reason, one or more of the provisions of this Assignment or their application to any person or company, is held to be invalid, illegal, or unenforceable in any respect or to any extent, such provisions will, nevertheless remain valid, legal, and enforceable in all other respects and to such extent as may be permissible. In addition, any such invalidity, illegality, or unenforceability will not affect any other provision herein, but this Assignment will be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

8. **AUTHORITY TO ENTER INTO ASSIGNMENT**

The persons signing this Assignment each warrant and represent that they are duly authorized, with full authority to bind the Parties, and that no signature of any other person or entity is necessary to bind the Parties.

[ASSIGNMENT CONTINUES ON SIGNATURE PAGE]

SAUTC hereby executes this Assignment.

Assignor: Saudi Aramco Upstream Technology Company

Signature: 

Date: 3/24/2022

Name: ABHRADEV OLTAHINI

Title: CEO SAUTC

SAO hereby acknowledges and accepts the foregoing assignment.

Assignee: Saudi Arabian Oil Company

Signature:  _____

Date: 4/28/2022 _____

Name: Kwadjo S. Agyei-Poku _____

Title: Chief IP Counsel, Saudi Aramco _____

APPENDIX A

Country	Application No.	Filing Date	Title	Attorney Docket No.	Client Reference No.
United States	17/369,149	7/7/2021	DIVERTING AGENTS FOR WELL STIMULATION	38136-1193001	SA71409/ASC0520-US01-P
United States	17/466,192	9/3/2021	INJECTING MULTIPLE TRACER TAG FLUIDS INTO A WELLBORE	38136-1205001	SA71423/ASC0493-US01-P
United States	17/494,387	10/5/2021	HYDRAULIC FRACTURING IN HYDROCARBON-BEARING RESERVOIRS	38136-1385001	SA71645/ASC0291-US03-P
United States	17/522,437	11/9/2021	MULTIFUNCTIONAL FLUORESCENT TAGS FOR SUBTERRANEAN APPLICATIONS	38136-1498001	SA71649/ASC0578
United States	17/522,445	11/9/2021	MULTIFUNCTIONAL POLYSACCHARIDE-BASED MUD LOGGING BARCODE TRACERS	38136-1499001	SA71650/ASC0579
United States	17/454,176	11/9/2021	MULTIFUNCTIONAL MAGNETIC TAGS FOR MUD LOGGING	38136-1500001	SA71651/ASC0580
United States	17/454,181	11/9/2021	MULTIFUNCTIONAL FLUORESCENT POLYMER-CLAY COMPOSITE TRACERS	38136-1501001	SA71652/ASC0581
United States	17/394,813	8/5/2021	SEMI-PERMANENT DOWNHOLE SENSOR TOOL	38136-1521001	SA71792/ASC0568
United States	17/496,608	10/7/2021	WATER-SOLUBLE GRAPHENE OXIDE NANOSHEET ASSISTED HIGH TEMPERATURE FRACTURING FLUID	38136-1537001	SA71809/ASC0618-US01-NP
United States	63/277,022	11/8/2021	DETERMINING MULTIPHASE FLUID FLOW PROPERTIES	38136-1539P01	SA71811/ASC0613-US01-P
United States	17/522,145	11/9/2021	INTEGRATION OF UPHOLES WITH INVERSION-BASED VELOCITY MODELING	38136-1543001	SA71817
United States	17/453,285	11/2/2021	MICRO-ELECTROMECHANICAL SYSTEM (MEMS) INTERFEROMETER FOR FT-MIR SPECTROSCOPY	38136-1578001	SA71859/ASC0608-US01-P
United States	17/453,290	11/2/2021	MINIATURE FT-MIR USING A MEMS INTERFEROMETER WITH A METASURFACE EMITTER AND DETECTOR	38136-1579001	SA71860/ASC0620-US01-P
United States	17/550,267	12/14/2021	MINIATURE FT-MIR USING A MEMS INTERFEROMETER WITH A METASURFACE EMITTER AND DETECTOR	38136-1579002	SA72095/ASC0620-US01-P
United States	17/550,631	12/14/2021	3D-PRINTED POLYROTAXANE ADDITIVES AND COMPOSITIONS	38136-1587001	SA71812/ASC0610-US01-P

Attorney Docket No. 38136-0001001
Assignment from Saudi Aramco Upstream Technology Company to Saudi Arabian Oil Company
Q1-2022

Country	Application No.	Filing Date	Title	Attorney Docket No.	Client Reference No.
United States	17/540,013	12/1/2021	DETERMINING ROCK PROPERTIES	38136-1588001	SA71870/ASC0640-US01
United States	17/539,900	12/1/2021	ENRICHMENT AND PURIFICATION OF SPECIFIC COMPOUNDS FROM HYDROCARBON RESERVOIR PRODUCED WATER USING MIXED-MODE SOLID PHASE EXTRACTION	38136-1589001	SA71871/ASC0634-US01-NP
United States	17/457,215	12/1/2021	HYDROCARBON PHASE BEHAVIOR MODELING FOR COMPOSITIONAL RESERVOIR SIMULATION	38136-1590001	SA71872/ASC0631-US01-NP
United States	17/517,195	11/2/2021	REAL TIME MAXIMUM HORIZONTAL STRESS CALIBRATION BASED ON PREDICTED CALIPER LOG WHILE DRILLING	38136-1625001	SA71910
United States	63/239,014	8/31/2021	QUANTITATIVE HYDRAULIC FRACTURING SURVEILLANCE FROM FIBER OPTIC SENSING USING MACHINE LEARNING	38136-1628P01	SA71914-ASC0648
United States	17/513,510	10/28/2021	MEMBRANES OF GLASSY POLYMER BLENDS WITH PEG-CROSSLINKED INTRINSIC MICROPOROUS POLYMERS FOR GAS SEPARATIONS	38136-1643001	SA71930-ASC0574
United States	17/547,627	12/10/2021	SELECTIVELY PREDICTING BREAKDOWN PRESSURES AND FRACTURING SUBTERRANEAN FORMATIONS	38136-1685001	ASC0652
United States	17/549,743	12/13/2021	MULTI-MODAL AND MULTI-DIMENSIONAL GEOLOGICAL CORE PROPERTY PREDICTION USING UNIFIED MACHINE LEARNING MODELING	38136-1686001	ASC0658
United States	17/551,959	12/15/2021	MACHINE-LEARNING BASED RIG-SITE ON-DEMAND DRILLING MUD CHARACTERIZATION, PROPERTY PREDICTION, AND OPTIMIZATION	38136-1688001	SA71976/ASC0679
United States	17/547,112	12/9/2021	MANAGING TRAINING WELLS FOR TARGET WELLS IN MACHINE LEARNING	38136-1689001	SA71979/ASC0686
United States	17/643,989	12/13/2021	SIMULATING SPATIAL CONTEXT OF A DATASET	38136-1691001	ASC660

Attorney Docket No. 38136-0001001
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Q1-2022

Country	Application No.	Filing Date	Title	Attorney Docket No.	Client Reference No.
United States	17/548,752	12/13/2021	ATTENUATED ACID FORMULATIONS FOR ACID STIMULATION	38136-1692001	ASC0653
United States	17/550,069	12/14/2021	MEMBRANES CONTAINING CROWN ETHER-CONTAINING POLYMERS	38136-1693001	ASC0656
United States	17/549,267	12/13/2021	SOURCE PRODUCTIVITY ASSAY INTEGRATING PYROLYSIS DATA AND X-RAY DIFFRACTION DATA	38136-1694001	ASC0657
United States	17/551,051	12/14/2021	CEMENTING A WELLBORE USING A DIRECT INK PRINTING	38136-1695001	ASC0668
United States	17/550,653	12/14/2021	SHAPE MEMORY BEHAVIOR OF EPOXY/SLIDING-RING POLYMER COMPOSITES	38136-1697001	SA71972/ASC0669
United States	17/550,638	12/14/2021	EPOXY COMPOSITIONS CONTAINING POLYROTAXANE ADDITIVES HAVING IMPROVED IMPACT STRENGTH	38136-1698001	SA71973/ASC0670
United States	17/643,252	12/8/2021	FLUID LOSS CONTROL ADDITIVE	38136-1700001	SA71980/ASC0687
United States	17/643,931	12/13/2021	MANIPULATING HYDROPHILICITY AND HYDROPHOBICITY OF CONVENTIONAL DYE MOLECULES FOR TRACER APPLICATIONS	38136-1701001	SA71981/ASC0693
United States	17/548,837	12/13/2021	MANIPULATING HYDROPHILICITY OF CONVENTIONAL DYE MOLECULES FOR WATER TRACER APPLICATIONS	38136-1702001	SA71982/ASC0694
United States	17/548,858	12/13/2021	METHOD OF MANIPULATING HYDROPHILICITY AND HYDROPHOBICITY OF CONVENTIONAL DYE MOLECULES FOR PARTITION TRACER APPLICATIONS	38136-1703001	SA71983/ASC0695
United States	17/549,062	12/13/2021	METHOD AND MATERIALS FOR EXTRACTION OF OIL-SOLUBLE ORGANIC MOLECULAR TRACERS FROM OIL PHASES	38136-1704001	SA71984/ASC0700
United States	17/543,348	12/6/2021	AN INDENTATION METHOD TO MEASURE MULTIPLE ROCK PROPERTIES	38136-1706001	ASC0661

Attorney Docket No. 38136-0001001
Assignment from Saudi Aramco Upstream Technology Company to Saudi Arabian Oil Company
Q1-2022

Country	Application No.	Filing Date	Title	Attorney Docket No.	Client Reference No.
United States	17/551,031	12/14/2021	FLUID FLOW SENSOR USING DRIVER AND REFERENCE ELECTROMECHANICAL RESONATORS	38136-1707001	ASC0662
United States	17/551,913	12/15/2021	REGISTERING FIBER POSITION TO WELL DEPTH IN A WELLBORE	38136-1708001	ASC0664
United States	17/553,229	12/16/2021	DETERMINING FLUID PROPERTIES	38136-1709001	ASC0665
United States	17/643,983	12/13/2021	DETERMINING PARTITION COEFFICIENTS OF TRACER ANALYTES	38136-1710001	ASC0667
United States	17/644,641	12/16/2021	DETERMINING OIL AND WATER PRODUCTION RATES IN MULTIPLE PRODUCTION ZONES FROM A SINGLE PRODUCTION WELL	38136-1711001	SA71975/ASC0675
United States	63/289,308	12/14/2021	A NEGATIVE CARBON CITY GRID FOR CAPTURE AND SEQUESTRATION OF CARBON DIOXIDE IN SUBTERRANEAN FORMATIONS	38136-1712P01	SA71985/ASC0697
United States	17/550,302	12/14/2021	SEQUESTRATION OF CARBON DIOXIDE IN ORGANIC-RICH GEOLOGICAL FORMATIONS	38136-1713001	SA71986/ASC0698

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