505779189 11/18/2019

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
SAMEEH ISSA BATARSEH	11/17/2019
WISAM JAMAL ASSIRI	11/17/2019
ABDULLAH M. AL-HARITH	11/17/2019

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: 1

Property Type	Number
Application Number:	16439405

CORRESPONDENCE DATA

Fax Number: (617)502-5002

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using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Email: PatentDocket@choate.com

CHOATE HALL & STEWART LLP-PATENT DOCKET **Correspondent Name:**

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Address Line 4: BOSTON, MASSACHUSETTS 02110

ATTORNEY DOCKET NUMBER:	2012738-0130
NAME OF SUBMITTER:	ALEXANDER D. AUGST
SIGNATURE:	/Alexander D. Augst/
DATE SIGNED:	11/18/2019

Total Attachments: 8

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PATENT REEL: 051039 FRAME: 0193 505779189

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> PATENT REEL: 051039 FRAME: 0194

Docket Number: 2012738-0130 (\$A2130/P2525US1)

COMBINED JOINT ASSIGNMENT & DECLARATION

A. ASSIGNMENT

WHEREAS, each of the below-named inventors whose name and residence is set forth in the following Table 1:

Inventor Name	City, State
1. Sameeh Issa Batarsch	Dhahran, Saudi Arabia
2. Wisam Jamal Assiri	Dhahran, Saudi Arabia
3. Abdullah M. Al-Harith	Dhahran, Saudi Arabia

Table 1

hereby declares and agrees, on behalf of himself/herself and all of his/her successors and assigns that each is aware of the patent application(s) entitled:

HYBRID PHOTONIC-PULSED FRACTURING TOOL AND RELATED METHODS; and

x identified by Unite	d States Application No.	16/439405	
filed in the United States Pate		June 12, 2019	; and
identified by Intern	national Patent Application No.		
and is also aware of	of the following priority applica	tions:	
Application	No.	Filed	

WHEREAS, Saudi Arabian Oil Company (hereinafter "ASSIGNEE"), having a usual place of business at 1 Eastern Avenue, Dhahran 31311, SAUDI ARABIA, desires to acquire or confirm an interest therein:

NOW, THEREFORE, to all whom it may concern be it known that, in consideration of agreements previously and duly entered into between the parties, and/or for other good and valuable consideration, the receipt of which is hereby acknowledged, each of us has sold, assigned, and transferred and/or do hereby sell, assign, and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, my entire right, title, and interest in and throughout

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the United States of America, its territories and all foreign countries, in and to any and all inventions described in the patent application, and/or any priority applications noted above, including any right of priority thereto; and hereby confirm that my sale, assignment and transfer is and was effective at least as of the filing date of the patent application and/or priority application. Our sale, assignment and transfer applies to the above-referenced patent application, and to any application that is based in whole or in part on the patent application, including any divisional, continuing, substitute, renewal, reissue, reexamination and other applications, for example that claim priority to the patent application. Also, this sale, assignment and transfer pertains to any and all other rights arising under or pursuant to any and all international agreements, treaties, or laws relating to the protection of industrial property, including all rights of priority under the International Convention for the Protection of Industrial Property, and in and to any such patent(s) as may issue thereon including any and all original and reissued patents which have been or shall be issued in the United States and foreign countries; said inventions, applications, and patent(s) to be held and enjoyed by ASSIGNEE for its own use and for its successors, assigns and legal representatives, to the full end of the term for which said patent(s) may be granted as fully and entirely as the same would have been held by each of us had this sale, assignment and transfer not been made;

AND, each of us hereby acknowledges that this Assignment, being of our entire right, title, and interest in and to the inventions, carries with it the right in ASSIGNEE, by attorneys and agents of ASSIGNEE selection, to apply for and receive any and all patent(s) for said inventions in its own name;

AND, each of us hereby further agrees for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the patent(s) to ASSIGNEE, its successors, assignees, and legal representatives, but at its expense and charges, including the execution of application for patents in foreign countries, the execution of substitution, reissue, divisional or continuation applications, and the giving of testimony, preliminary statements, or other statements in any interference or other proceeding in which the inventions or any applications or patents directed to the inventions may be involved by communicating to the ASSIGNEE all facts we know relating to the inventions and their history, and generally by doing everything possible which ASSIGNEE shall consider desirable for aiding in securing and maintaining proper patent protection for the inventions and for vesting title in the inventions and all applications for patent and all patents on the inventions in ASSIGNEE;

AND, each of us further hereby authorizes ASSIGNEE or its attorneys or agents to insert the correct application number(s) and/or filing date(s) into this assignment document, if appropriate:

AND, each of us hereby appoints ASSIGNEE as our common agent for purposes of prosecuting international patent applications and any national patent applications for which such common agency is recognized;

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AND, each of us hereby requests the Commissioner for Patents of the United States Patent and Trademark Office to issue any and all patent(s) as shall be granted upon said application or applications based thereon to ASSIGNEE, its successors, assigns, and legal representatives;

AND, each of us covenants with said ASSIGNEE that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by us, and that full right to convey the same as herein expressed is possessed by us.

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B. DECLARATION (37 CFR 1.63)

As below named inventors, we hereby declare that:

This declaration is directed to the patent application entitled:

HYBRID PHOTONIC-PULSED FRACTURING TOOL AND RELATED METHODS; and

Office; or	attached hereto or prepared for filing in the United	States Patent and Trad	emark
X	identified by United States Application No.	16/439405	
filed in th	e United States Patent and Trademark Office on	June 12, 2019	; or
filed on The	above-identified application was made or authorized	•	stand the stan
application	believe that we are each an original joint invento	r of a claimed inven	non in the
	hereby acknowledge that any willful false statem under 18 U.S.C. 1001 by fine or imprisonment of		

We have reviewed and understand the contents of the application, including the claims and are aware of the duty to disclose to the United States Patent and Trademark Office all information known to be material to patentability as defined in 37 CFR 1.56.

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Signature:		Date:	11/17/2019
***************************************	i Issa Batarsch		· · · · · · · · · · · · · · · · · · ·
Witness Signature:			
Witness Name (prin	ited): Wisam Assiri		

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Signature: Wisam Jamal Assiri	Date: <u>11/17/19</u>
Witness Signature:	
Witness Name (printed): James L. Batusel	

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Signature: Abdullah M.	Al-Harith		Date:	11/17/2019
Witness Signature: Witness Name (printed):	Janesh	Rusursch		

Docket No.	2012738-0130	
and the second second second second	(SA 2130)

POWER OF ATTORNEY AND ACCEPTANCE BY ASSIGNEE

I hereby appoint the attorneys associated with United States Patent & Trademark Office Customer Number 148219 (as that term is used in 37 C.F.R. 1.32(a)(5)) as my/our attorneys for the purpose of accepting assignments in any jurisdiction in which acceptance by Saudi Arabian

Oil Company as ASSIGNEE is necessary or desir associated with Customer Number 148219 to inser	t any inform	ation necessary or desirable to
identify the subject matter of the assignment into the not limited to, docket number, SA reference and/or of perjury under the laws of the United States of A	r application merica, and	number). I declare under penalty under penalty of the laws of any
other jurisdiction before which this document may x 1 am an officer of the above-identified	.•	
x I have signed this document on behall board of directors	f of ASSIGN	SEE with the full authority of its
and that all of the foregoing is true and cor	rect.	
SIGNATURE: C35CC	DATE:	November 1, 2018
NAME: Aaron K. Adkins TITLE: Assistant Corporate Secretary COMPANY: Saudi Arabian Oil Company		
I declare under penalty of perjury under the under penalty of the laws of any other jurisdiction that I am an attorney associated with Customer No	before whic	h this document may be presented,
Power of Attorney, I hereby accept this assignment as ASSIGNEE.	nt on behalf o	of Saudi Arabian Oil Company
SIGNATURE: /Charles E. Lyon/	DATE:	November 18, 2019
NAME: Charles E. Lyon, DPhil, JD USPTO REG. NO.: 56,630		
879529}√}		

RECORDED: 11/18/2019

PATENT REEL: 051039 FRAME: 0202