#### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT7674933

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
YANG TANG	12/02/2022
PENG ZHAO	12/02/2022
GUORONG WANG	12/02/2022
JINHAI ZHAO	12/02/2022
QINGYOU LIU	12/02/2022
JINZHONG WANG	12/02/2022
GUANGJIE YUAN	12/02/2022
YUFA HE	12/02/2022
QINGPING LI	12/02/2022
XIAOYU FANG	12/02/2022
XUSHEN LI	12/02/2022
ZELIANG LI	12/02/2022
XIN JING	12/02/2022

#### **RECEIVING PARTY DATA**

Name:	SOUTHWEST PETROLEUM UNIVERSITY	
Street Address:	NO. 8 XINDU AVENUE, XINDU DISTRICT	
City:	CHENGDU	
State/Country:	CHINA	
Name:	SOUTHERN MARINE SCIENCE AND ENGINEERING GUANGDONG LABORATORY(ZHANJIANG)	
Street Address:	LIBRARY AT NO.1 WENTI ROAD, XIASHAN DISTRICT	
City:	ZHANJIANG	
State/Country:	CHINA	

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	17537447

#### **CORRESPONDENCE DATA**

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

PATENT REEL: 061962 FRAME: 0794

507628037

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

**Phone:** 16175801293

**Email:** qianqianwu2016@gmail.com

**Correspondent Name:** QIANQIAN WU **Address Line 1:** 64 BANK ST

Address Line 4: ABINGTON, MASSACHUSETTS 02351

ATTORNEY DOCKET NUMBER:	D-BAXW-00901-NUS
NAME OF SUBMITTER:	QIANQIAN WU
SIGNATURE:	/Qianqian Wu/
DATE SIGNED:	12/02/2022

**Total Attachments: 13** 

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PATENT REEL: 061962 FRAME: 0795

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Attorney Docket Number	D-BAXW-00	901-NUS		
Title of Invention	A CAVITY CREATION TOOL BY CRUSHING WITH MULTI-STAGE CONTROLLABLE WATER JET FOR NATURAL GAS HYDRATE DEVELOPMENT			
		m the original inventor or an original lentified by the title above.	al joint inventor (referred to as ASSIGNOR below) of a claimed	
WHEREAS	;,	1st Assignee: Southwest Petroleu 2nd Assignee: Southern Marine S	um University Science and Engineering Guangdong Laboratory(Zhanjiang)	
having a po	stal address of		łu Avenue, Xindu District, Chengdu, Sichuan 610599, China : No.1 Wenti Road, Xiashan District, Zhanjiang, Guangdong	
(referred to	as ASSIGNEE be	elow) desires to acquire the entire r	ight, title, and interest in and to the same in the United States;	
ASSIGNOF said inven division, co	R, by these prese tion and applicat	ents does sell, assign and transfe tion throughout the United States uation-in-part, reexamination, and re	on, the receipt and adequacy of which is hereby acknowledged, er unto ASSIGNEE, the entire right, title, and interest in and to s of America, including any and all patents granted on any eissue of said application, whether granted in an initial or	
prosecution additional of further conscious communical ASSIGNOF be required encompass	ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent applications in the United States for said invention, includir additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention and application, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the invention that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.			
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			Customer Number 167,068 to insert or complete any information and Trademark Office and to record the same.	
LEGAL N.	AME OF ASSIGN	OR		
Assignor:	Yang TANG		Date: 11/26/2021	
Signature	/Yang TANG	3/		

PAGE 1 OF 13

Attorney Docket Number	D-BAXW-00901-NUS			
Title of Invention		EATION TOOL BY CRUSHING WITH N L GAS HYDRATE DEVELOPMENT	IULTI-STAGE CONTROLLABLE WATER JET	
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WHEREAS	;,	1st Assignee: Southwest Petroleum Univer 2nd Assignee: Southern Marine Science a	rsity nd Engineering Guangdong Laboratory(Žhanjiang)	
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(referred to	as ASSIGNEE be	elow) desires to acquire the entire right, title,	and interest in and to the same in the United States;	
ASSIGNOF said invent division, co	R, by these prese tion and applicat	ents does sell, assign and transfer unto A tion throughout the United States of Ame uation-in-part, reexamination, and reissue of	ceipt and adequacy of which is hereby acknowledged, SSIGNEE, the entire right, title, and interest in and to rica, including any and all patents granted on any said application, whether granted in an initial or	
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		es Practitioners associated with the Customorfect its recordal in the U.S. Patent and Trac	er Number 167,068 to insert or complete any information demark Office and to record the same.	
LEGAL N	AME OF ASSIGN	OR		
Assignor:	Peng ZHAO		Date: 11/26/2021	
Signature	/Peng ZHAC	<b>)</b> /		
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Attorney Docket Number	D-BAXW-00901-NUS				
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WHEREAS	,	1st Assignee: Southwest Pe 2nd Assignee: Southern Mar		ngineering Guangdong La	aboratory (Żhanjiang)
having a po	stal address of	1st Assignee Address: No. 8 2nd Assignee Address: Libra 524006, China			
(referred to	as ASSIGNEE b	elow) desires to acquire the er	ntire right, title, and	interest in and to the san	ne in the United States;
ASSIGNOF said invendivision, co	NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, ASSIGNOR, by these presents does sell, assign and transfer unto ASSIGNEE, the entire right, title, and interest in and to said invention and application throughout the United States of America, including any and all patents granted on any division, continuation, continuation-in-part, reexamination, and reissue of said application, whether granted in an initial or supplemental examination thereof.				tle, and interest in and to ents granted on any
ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent applications in the United States for said invention, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said invention and application, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the invention that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.					
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ASSIGNOR authorizes Practitioners associated with the Customer Number 167,068 to insert or complete any information in this document needed to effect its recordal in the U.S. Patent and Trademark Office and to record the same.					
LEGAL N.	AME OF ASSIGN	OR			
Assignor:	Guorong WA	NG		Date: 11/26/2021	
Signature	/Guorong W	/ANG/			

PAGE **3** OF 13

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Attorney Docket Number	D-BAXW-00	901-NUS		
Title of Invention	A CAVITY CREATION TOOL BY CRUSHING WITH MULTI-STAGE CONTROLLABLE WATER JET FOR NATURAL GAS HYDRATE DEVELOPMENT			TER JET
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WHEREAS	,	1st Assignee: Southwest Petroleu 2nd Assignee: Southern Marine S	ım University Science and Engineering Guangdong Laboratory	(Żhanjiang)
having a po	stal address of		lu Avenue, Xindu District, Chengdu, Sichuan 6105 No.1 Wenti Road, Xiashan District, Zhanjiang, Gu	
(referred to	as ASSIGNEE be	slow) desires to acquire the entire ri	ight, title, and interest in and to the same in the U	nited States;
ASSIGNOF said invendivision, co	R, by these prese tion and applicat	nts does sell, assign and transfe ion throughout the United States ation-in-part, reexamination, and re	on, the receipt and adequacy of which is hereby a er unto ASSIGNEE, the entire right, title, and in s of America, including any and all patents grante eissue of said application, whether granted in an i	terest in and to ed on any
prosecution additional of further conscious communical ASSIGNOF be required encompass	and maintenance ocuments that massideration. ASSIG te to ASSIGNEE to possession or of ASSIGNOR in ed within the term	e of said application or any other pa by be required to affirm the rights of NOR also agrees, without further or at ASSIGNEE's request documents control, and to provide further assur respect of the prosecution, mainter	nat legally may be required in connection with the latent applications in the United States for said inverse f ASSIGNEE in and to said invention and applicationsideration and at ASSIGNEE's expense, to ider and information concerning the invention that are rances and testimony on behalf of ASSIGNEE that nance and defense of any patent application or particular to the said of t	ention, including ion, all without ntify and e within at lawfully may atent
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			Customer Number 167,068 to insert or complete and Trademark Office and to record the same.	any information
LEGAL N.	AME OF ASSIGN	OR .		
Assignor:	Jinhai ZHAO		Date: 11/26/2021	aaanaaaaaaaaaaaaaaaa
	/Jinhai ZHA	O/		
Signature		***************************************		

PAGE **4** OF 13

Attorney Docket Number	D-BAXW-00	901-NUS		
Title of Invention		EATION TOOL BY CRUSHING WITH MULTI-STAGE CONTROLLABLE WATER JET L GAS HYDRATE DEVELOPMENT		
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WHEREAS	;	1st Assignee: Southwest Petroleum University 2nd Assignee: Southern Marine Science and Engineering Guangdong Laboratory (Zhanjiang)		
having a po	stal address of	1st Assignee Address: No. 8 Xindu Avenue, Xindu District, Chengdu, Sichuan 610599, China 2nd Assignee Address: Library at No.1 Wenti Road, Xiashan District, Zhanjiang, Guangdong 524006, China		
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LEGAL N	AME OF ASSIGN	DR		
Assignor:	Qingyou LIU	Date: 11/26/2021		
Signature	/Qingyou LI	J/		

PAGE **5** OF 13

Attorney Docket Number	D-BAXW-00901-NUS		
Title of Invention	A CAVITY CREATION TOOL BY CRUSHING WITH MULTI-STAGE CONTROLLABLE WATER JET FOR NATURAL GAS HYDRATE DEVELOPMENT		
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LEGAL N.	AME OF ASSIGN	IOR	
Assignor:	Jinzhong WA	\NG	
Signature	/Jinzhong W	VANG/	
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LEGAL N	AME OF ASSIGN	OR	
Assignor:	Guangjie YU	AN	
Signature:	/Guangjie Y	UAN/	

PAGE **7** OF 13

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Attorney Docket Number	D-BAXW-00	901-NUS		
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LEGAL N	AME OF ASSIGN	OR .		
Assignor:	Yufa HE		Date: 11/26/2021	
0:	/Yufa HE/			
Signature:		***************************************		

PAGE **8** OF 13

Attorney Docket Number	D-BAXW-00	901-NUS		
Title of Invention	A CAVITY CREATION TOOL BY CRUSHING WITH MULTI-STAGE CONTROLLABLE WATER OF NATURAL GAS HYDRATE DEVELOPMENT			
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LEGAL N	AME OF ASSIGN	OR		
Assignor:	Qingping LI		Date: 11/26/2021	
Signature	/Qingping LI	1		

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having a postal address of		1st Assignee Address: No. 8 Xindu Avenue, Xindu District, Chengdu, Sichuan 610599, China 2nd Assignee Address: Library at No.1 Wenti Road, Xiashan District, Zhanjiang, Guangdong 524006, China		
(referred to	as ASSIGNEE be	elow) desires to acquire the entire righ	t, title, and interest in and to the same in the Unite	d States;
ASSIGNOF said invent division, co	R, by these prese tion and applicat	nts does sell, assign and transfer union throughout the United States of uation-in-part, reexamination, and reis	the receipt and adequacy of which is hereby ackninto ASSIGNEE, the entire right, title, and interfaments including any and all patents granted case of said application, whether granted in an initial	est in and to on any
prosecution additional d further conscommunica ASSIGNOF be required encompass	and maintenance locuments that massideration. ASSIG te to ASSIGNEE to ASSIGNOR in of ASSIGNOR in the term	e of said application or any other pater by be required to affirm the rights of At NOR also agrees, without further cons at ASSIGNEE's request documents a control, and to provide further assurar respect of the prosecution, maintenal	legally may be required in connection with the filir applications in the United States for said invention SSIGNEE in and to said invention and application, sideration and at ASSIGNEE's expense, to identify and information concerning the invention that are was and testimony on behalf of ASSIGNEE that lance and defense of any patent application or pater ligations under this instrument shall extend to ASSIGNEE.	on, including , all without / and ithin awfully may nt
referred to a use and be which such	above to ASSIGN hoof; and for the u	EE, as the ASSIGNEE of the entire riguse and behoof of ASSIGNEE's legal i	oner of Patents and Trademarks to issue any and ght, title and interest in and to the same, for ASSIC representatives and successors, to the full end of le would have been held by ASSIGNOR had this a	NEE's sole the term for
			ustomer Number 167,068 to insert or complete an d Trademark Office and to record the same.	y information
LEGAL N	AME OF ASSIGN	OR		
Assignor:	Zeliang Ll		Date: 11/26/2021	***************
Signature	/Zeliang Ll/			

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Attorney Docket Number	D-BAXW-00	)901-NUS			
Title of Invention		REATION TOOL BY CRU FOR NATURAL GAS HY			ROLLABLE
		rm the original inventor or an origin dentified by the title above.	al joint inventor (referred to	o as ASSIGNOR below)	of a claimed
	ostal address of	1st Assignee: Southwest 2nd Assignee: Southern 1st Assignee Address: N Sichuan 610599, China 2nd Assignee Address: I elow) desires to acquire the entire	Marine Science and lo. 8 Xindu Avenue, _ibrary at No.1 Wen	d Engineering Guar Xindu District, Che ti Road, Xiashan D	engdu, District,
ASSIGNOR said inven division, co	R, by these prese tion and applica	f, for good and valuable considerations does sell, assign and transfition throughout the United State uation-in-part, reexamination, and hereof.	er unto ASSIGNEE, the e is of America, including a	e <mark>ntire right, title, and int</mark> ny and all patents grante	t <mark>erest in and to</mark> d on any
prosecution additional of further con- communica ASSIGNOF be required encompass	n and maintenance documents that mestion. ASSIGNEE ate to ASSIGNEE as possession or a for ASSIGNOR in the terresed within the	agrees to execute any documents to e of said application or any other pay be required to affirm the rights of the salso agrees, without further of at ASSIGNEE's request document control, and to provide further assument of this instrument. ASSIGNOR's ors and other legal representatives	patent applications in the Upper ASSIGNEE in and to sail consideration and at ASSIGNES and information concernurances and testimony on enance and defense of any sobligations under this institutions.	nited States for said inve d invention and application SNEE's expense, to iden ing the invention that are behalf of ASSIGNEE that patent application or pa	ention, including on, all without utify and e within it lawfully may utent
referred to use and be which such	above to ASSIGN hoof; and for the	authorizes and requests the Comm NEE, as the ASSIGNEE of the entir use and behoof of ASSIGNEE's le ranted, as fully and entirely as the	e right, title and interest in gal representatives and su	and to the same, for ASS coessors, to the full end	SIGNEE's sole of the term for
		es Practitioners associated with the effect its recordal in the U.S. Paten			any information
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Assignor:	Xin JING		Date:11/2	6/2021	<b>1000000000000000000</b>
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**PATENT REEL: 061962 FRAME: 0808** 

Signature: /Xin JING/

**RECORDED: 12/02/2022**