09/11/2014 502971685

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3018284

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CARLOS A. FERNANDEZ	09/09/2014
DAVID J. HELDEBRANT	09/09/2014
ALAIN H. R. BONNEVILLE	09/09/2014
HUN BOK JUNG	09/11/2014
KENNETH C. CARROLL	09/10/2014

RECEIVING PARTY DATA

Name:	BATTELLE MEMORIAL INSTITUTE
Street Address:	P.O. BOX 999, K1-53
City:	RICHLAND
State/Country:	WASHINGTON
Postal Code:	99352

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	61873646
Application Number:	14477700

CORRESPONDENCE DATA

Fax Number: (509)375-4487

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Address Line 4: RICHLAND, WASHINGTON 99352

ATTORNEY DOCKET NUMBER:	30392-E
NAME OF SUBMITTER:	JAMES D. MATHESON
SIGNATURE:	/ James D. Matheson /
DATE SIGNED:	09/11/2014

Total Attachments: 8

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PATENT REEL: 033719 FRAME: 0637

ASSIGNMENT OF PATENT RIGHTS

Carlos A. Fernandez
David J. Heldebrant
Alain H. R. Bonneville
Hun Bok Jung
Kenneth C. Carroll

To Battelle Memorial Institute

WHEREAS, we, Carlos A. Fernandez of Kennewick, County of Benton, State of Washington; David J. Heldebrant of Richland, County of Benton, State of Washington; Alain H. R. Bonneville of Richland, County of Benton, State of Washington; Hun Bok Jung of Richland, County of Benton, State of Washington; and Kenneth C. Carroll of Las Cruces, County of Dona Ana, State of New Mexico; hereinafter INVENTORS, have made certain inventions related to, ELECTROPHILIC ACID GAS-REACTIVE FLUID, PROPPANT, AND PROCESS FOR ENHANCED FRACTURING AND RECOVERY OF ENERGY PRODUCING MATERIALS including those, described and claimed in various disclosures including:

Provisional U.S. Application No. 61/873,646, filed September 4, 2013, Entitled: CO2 Sensitive Fracturing Fluid and Process for Enhanced Hydraulic Fracturing Applications

U.S. Patent Application No. 14/477,700, filed September 4, 2014, Entitled: Electrophilic Acid Gas-Reactive Fluid, Proppant, and Process for Enhanced Fracturing and Recovery of Energy Producing Materials

For which we are about to make application for Letters Patent of the United States; collectively referred to hereinafter as INVENTIONS;

WHEREAS Battelle Memorial Institute, a corporation of Ohio, organized and existing under the laws of the State of Ohio, and having a place of business in the City of Richland,

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Washington, is desirous of acquiring all right, title, and interest in the said INVENTIONS and in all patents or patent applications sought or obtained therefor;

NOW, THEREFORE, be it known to all those who may be concerned, that for and in consideration of the sum of One Dollar (\$1.00) each, and other good and valuable considerations, the receipt of which is hereby acknowledged, We the INVENTORS have each sold, assigned, and transferred, and by these presents do sell, assign and transfer unto the said Battelle Memorial Institute, the entire right, title, and interest in and to the INVENTIONS shown, described, or claimed herein, and the full and exclusive right, title, and interest to any and all patents and patent applications that show, describe or claim said INVENTIONS including but not limited to those applications referenced herein, and in and to any extensions, continuations, including continuations in part, reissues, divisions, or renewals thereof; and We each do hereby authorize and request the Commissioner of Patents or other proper Officer, to issue such Letters Patent, or any of them to the said Battelle Memorial Institute, as the assignee of my entire right, title, and interest in and to the same for the sole use and benefit of the said Battelle Memorial Institute, and its successors or assigns.

We each further covenant and agree that we each will, at the request and expense of the said Battelle Memorial Institute, execute such other and further assurances of title as may be necessary or proper to fully convey the interest herein sought to be conveyed; and that each of us will, at the request and expense of the said Battelle Memorial Institute, execute such application papers as may be desired by the said Battelle Memorial Institute, for the filing of any division or renewal of the application herein conveyed, or for reissues or extensions (including continuations or continuations in part applications), or any Letters Patent that may be granted upon said application, and will execute such Supplemental Oaths and Preliminary Statements, or other papers as desired by the said Battelle Memorial Institute.

We each further assign unto the said Battelle Memorial Institute, the whole right, title, and interest to the invention disclosed in the application throughout all countries foreign to the United States, and do hereby authorize the said Battelle Memorial Institute to apply for patents therefor in its own name in countries where such procedure is proper and to claim the benefit of

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International Conventions and agree to execute applications of the said invention in the several countries where it is necessary that the same be executed by the inventors, and to execute assignments of such applications and the patents to be obtained therefor to the said Battelle Memorial Institute, the assignee herein, as well as all other necessary papers.

Executed at Richland, State of Washington, this O9 day of September, 2014. Carlos A. Fernandez
STATE OF Washington) ss. COUNTY OF Benton)
This day of September, 2014, before me personally came the above-named Carlos A. Fernandez, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.
Notary Public for the State of Washington My commission expires: 123/16

	•
Executed at Richland, State of Washington, this	9 day of September, 2014.
	David Pollata
	David J. Heldebrant
STATE OF Washington)	
COUNTY OF Benton) ss.	
This	me personally came the above-named David J.
Heldebrant, who executed the foregoing instrumen me that he executed the same of his own free will f	
EADLE IN	Helli Ladie
	Notary Public for the State of Washington My commission expires:
[SEAL]	
What ATE OF WASHES	

Executed at Richland, State of Washington, this			
STATE OF Washington) ss. COUNTY OF Benton This day of September, 2014, before me personally came the above-named Alain H. R. Bonneville, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein. Notary Public for the State of Washington	Executed at Richland, State of Wa	ushington, this _	
COUNTY OF Benton This day of September, 2014, before me personally came the above-named Alain H. R. Bonneville, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein. Notary Public for the State of Washington			Alain H. R. Bonneville
This day of September, 2014, before me personally came the above-named Alain H. R. Bonneville, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein. Notary Public for the State of Washington	STATE OF Washington)	
Bonneville, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein. Notary Public for the State of Washington	COUNTY OF Benton) ss.	
M. OF WILL	Bonneville, who executed the fore me that he executed the same of h	egoing instrumer	nt in my presence, and who acknowledged to for the purposes set forth therein. Notary Public for the State of Washington

Executed at Elmhurst, State of New York, this day of September, 2014.	
Hun Bok Jung	
STATE OF New York) COUNTY OF Queens) ss.	
This // day of September, 2014, before me personally came the above named Hun Bok Jung, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein Notary Public for the State of New York NO. 01PO4693438 Qualified in Queens County My Commission Expires May 31, 2015	1

Executed at Dona Ana, State of New Mexicothis 10 day of September, 2014.
Kenneth C. Carroll
STATE OF NEW MEXICO) COUNTY OF Dona Arg) ss.
This 10 day of September, 2014, before me personally came the above-named Kenneth C. Carroll, who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein. Washing Caster New Meyers
[SEAL]