## 504076641 11/01/2016 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4123308

BUBMISSION TYPE:		NEW ASSIGNMENT	
ATURE OF CONVEYAN	ICE:	ASSIGNMENT	
CONVEYING PARTY DA	ATA		
		Name	Execution Date
JOHN L. LIENHARD			05/05/2015
RONAN K. MCGOVERN			04/27/2015
LIGE SUN			05/13/2015
ADAM M. WEINER			05/05/2015
SYED M. ZUBAIR			04/26/2015
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Postal Code: PROPERTY NUMBERS Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2:	Total: 1 15 ATA (6' e sent to the provided; i 61 kw D( 12 SL B(	17)443-0004 <b>he e-mail address first; if that is unsuccessful</b> <b>if that is unsuccessful, it will be sent via US M</b> 74439292 whitehouse@sunsteinlaw.com OROTHY WU CHIANG 25 SUMMER STREET JNSTEIN KANN MURPHY & TIMBERS LLP	
Postal Code: PROPERTY NUMBERS Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4:	Total: 1 15 ATA (6' e sent to the provided; i 61 kw D( 12 SL B(	17)443-0004 <b>he e-mail address first; if that is unsuccessful</b> <b>if that is unsuccessful, it will be sent via US M</b> 74439292 whitehouse@sunsteinlaw.com OROTHY WU CHIANG 25 SUMMER STREET JNSTEIN KANN MURPHY & TIMBERS LLP OSTON, MASSACHUSETTS 02110-1618	
Postal Code: PROPERTY NUMBERS Property Type Application Number: CORRESPONDENCE DA Fax Number: Correspondence will be using a fax number, if p Phone: Email: Correspondent Name: Address Line 1: Address Line 2: Address Line 4: ATTORNEY DOCKET NU	Total: 1 15 ATA (6' e sent to the provided; i 61 kw D( 12 SL B(	17)443-0004 he e-mail address first; if that is unsuccessful, if that is unsuccessful, it will be sent via US M 74439292 whitehouse@sunsteinlaw.com OROTHY WU CHIANG 25 SUMMER STREET JNSTEIN KANN MURPHY & TIMBERS LLP OSTON, MASSACHUSETTS 02110-1618 1118/A42	

**Total Attachments: 14** 

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#### **ASSIGNMENT**

ASSIGNORS:	John H. Lienhard
	Ronan K. McGovern
	Lige Sun
	Adam M. Weiner
	Syed M. Zubair
ASSIGNEE:	Massachusetts Institute of Technology
	77 Massachusetts Avenue
	Cambridge, MA 02139
INVENTION:	Method and Apparatus for Partially Desalinating Produced Water to Form Extraction Fluid Used for Fossil Fuel Extraction
ATTORNEY DOCKET:	1118/A42WO
INT'L APPLICATION NO:	PCT/US2015/027258
INT'L FILING DATE:	April 23, 2015

Assignor is a joint inventor of a certain new and useful invention (the "Invention") described in a patent application (the "Application") filed under the Patent Cooperation Treaty bearing the above attorney docket number and the above international application number and having as a title the above name for the Invention.

For valuable consideration, receipt of which is acknowledged, each Assignor hereby assigns to Assignee (which term shall include Assignee's successors and assigns), all of Assignor's right, title and interest in the Invention, all improvements therein, the Application and all priority rights arising therefrom, and any patents, and any reissues and extensions thereof, which issue in any country upon any patent applications which correspond with any of the following: the Application, any divisional, continuation-in-whole, or substitute United States application which is based on the Application; or any continuation-in-part United States application (including divisions, continuations-in-whole or -in-part, and substitutions thereof or therefor) based in-part on any of the above described applications.

Each Assignor further agrees that such Assignor and Assignor's heirs and legal representatives will, without further consideration, cooperate with Assignee in the prosecution of all of the above applications, execute, verify, acknowledge and deliver all such further papers, including applications for patents and for reissues and extensions therefor, and instruments of assignment and transfer thereof, and will communicate any facts known to Assignor relating to the Invention, to obtain or maintain or enforce patents for the Invention and improvements therein in any and all countries and to vest title thereto in Assignee. Each Assignor further agrees that such Assignor will, without further compensation to Assignor during the term of such Assignee, perform such other acts as may be reasonably required when requested by Assignee, including attending depositions, preparing and executing declarations and affidavits and testifying as a witness, to obtain or maintain or enforce patents for the Invention and improvements therein in any and all countries and to vest title thereto in Assignee.

I hereby authorize and request Sunstein Kann Murphy & Timbers LLP to supply any missing patent/application identification information or correct any errors in the patent/application identification information provided above, whether discovered prior to or after recordation.

IN WITNESS WHEREOF, each Assignor hereby executes this instrument on the date set forth below.

A second s
Date: SMay 2015
John H. Dienhard, Assignor
Witness Signature: <u>Hureso With</u>
Print Witness Name: Theresa Werth
Address: 119 Lakeview Ave Wattham, MA 00457
Witness Signature: <u>Christine Gervais</u>
Print Witness Name: <u>christing Gervais</u>
Address: 1243 Bracon St Brookline MA 0)446

Page 2 of 4

#### PATENT REEL: 040189 FRAME: 0007

Date:	
	Ronan K. McGovern, Assignor
Witness Signature:	
Witness Signature:	
Date:	Lige Sun, Assignor
Witness Signature:	
Witness Signature:	
Address:	

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Date:	
	Adam M. Weiner, Assignor
Print Witness Name:	
Witness Signature:	
Date:	
	Syed M. Zubair, Assignor
Witness Signature:	
Print Witness Name:	
Witness Signature:	
Address:	

01118/A42WO 2296847.1

#### ASSIGNMENT

<u>ASSIGNORS</u> :	John H. Lienhard Ronan K. McGovern Lige Sun Adam M. Weiner Syed M. Zubair
ASSIGNEE:	Massachusetts Institute of Technology 77 Massachusetts Avenue Cambridge, MA 02139
INVENTION:	Method and Apparatus for Partially Desalinating Produced Water to Form Extraction Fluid Used for Fossil Fuel Extraction
ATTORNEY DOCKET:	1118/A42WO
INT'L APPLICATION NO:	PCT/US2015/027258
INT'L FILING DATE:	April 23, 2015

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For valuable consideration, receipt of which is acknowledged, each Assignor hereby assigns to Assignee (which term shall include Assignee's successors and assigns), all of Assignor's right, title and interest in the Invention, all improvements therein, the Application and all priority rights arising therefrom, and any patents, and any reissues and extensions thereof, which issue in any country upon any patent applications which correspond with any of the following: the Application, any divisional, continuation-in-whole, or substitute United States application which is based on the Application; or any continuation-in-part United States application (including divisions, continuations-in-whole or -in-part, and substitutions thereof or therefor) based in-part on any of the above described applications.

Each Assignor further agrees that such Assignor and Assignor's heirs and legal representatives will, without further consideration, cooperate with Assignee in the prosecution of all of the above applications, execute, verify, acknowledge and deliver all such further papers, including applications for patents and for reissues and extensions therefor, and instruments of assignment and transfer thereof, and will communicate any facts known to Assignor relating to the Invention, to obtain or maintain or enforce patents for the Invention and improvements therein in any and all countries and to vest title thereto in Assignee. Each Assignor further agrees that such Assignor will, without further compensation to Assignor during the term of such Assignee, perform such other acts as may be reasonably required when requested by Assignee, including attending depositions, preparing and executing declarations and affidavits and testifying as a witness, to obtain or maintain or enforce patents for the Invention and improvements therein in any and all countries and to vest title thereto in Assignee.

I hereby authorize and request Sunstein Kann Murphy & Timbers LLP to supply any missing patent/application identification information or correct any errors in the patent/application identification information provided above, whether discovered prior to or after recordation.

IN WITNESS WHEREOF, each Assignor hereby executes this instrument on the date set forth below.

Date:			
	John H. Lienhard, Assignor		
Witness Signature:			
Print Witness Name:			
Address:			
Witness Signature:			
Print Witness Name:			
Address:			

Page 2 of 4

PATENT REEL: 040189 FRAME: 0011

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Date: <u>toril 27<sup>th</sup> 2015</u> <u>Roman K. McGovern, Assignor</u>
Witness Signature: <u>Witness Signature</u>
Print Witness Name: Emily W. Tess
Address: 32 & Burnside AVE. Somewile MA 02144
Witness Signature: <u>Juni Unionym</u> Print Witness Name: <u>David Watsinger</u> Address: <u>23 Speridatis Terrare</u> Combridge MA 02-139
Date: <u>4/27/</u> Lige Sun, Assignor
Witness Signature:
Print Witness Name:
Address:
Witness Signature:

Adam M. Weiner, Assignor
Syed M. Zubair, Assignor

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	John H. Liendard Konan K. McGovern Lige Sun Adam M. Weiner Synd M. Zuhan
<u>ASSIGNEE</u>	Massachusetts Institute of Technology 77 Massachusetts Avenue Cambridge, MA 02139
NYLNTION	Method and Apparatus for Particity Descenting Produced Name to Form Extraction Frust Dash for Forse Ford Extraction
ALTORNEY DOCKET	118 A42WO
<b>ETLAPPLICATIONNO</b>	PCT/US2015/027258
STLENO DATE	April 23, 2015

Assignar is a joint inventor of a certain new and aceful sciencies (i.e. "Isocies") described in a patent application (the "Application") filed under the Patent Cooperation Transbearing the above attorney docket number and the above international application moder and having as a title the above name for the Invention.

For valuable consideration, receipt of which is accordinged, call Assigned and the assigned to Assigned (which term shall include Assigned's successory and assigned all of Assigned's right title and merest to the Interation, all improvements there. The Assigned are as providy tights arising thereform, and any patents, and any rescues and excession are shall used in any country apon any patent applications which correspond with any of assigned in Application, any dominant continuation in whose, or substation terms the state application shall be based on the Application, or any continuation-in-part. Instead States application (according the application, or any continuation-in-part, and satisfactory dama to any to based on the Application in which or in-part, and satisfactory dama in the application and any of the store described applications.

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Each Assignor further agrees that such Assignor and Assignor's here and legal representatives will, without further consideration, cooperate with Assignce in the prosecution of all of the above applications, execute, verify, acknowledge and deliver all such further papers, including applications for patents and for reassues and extensions therefor, and instruments of assignment and transfer thereof, and will communicate any facts known to Assigner relating to the lowention, to obtain or maintain or enforce patents for the Invention and Improvements therein in any and all countries and to vest title thereto in Assigner. Each Assigner further agrees that such Assigner will without further compensation to Assigner during the term of such Assigner, perform such other acts as may be reasonable compensation as determined by Assignee, perform such other acts as may be reasonably required when requested by Assignee, metuding attending depositions, preparing and executing declarations and affidewise and testifying as a witness, to obtain or maintain or enforce patents for the Invention and affidewise and testifying as a witness, to obtain or maintain or enforce patents and the requested as any testifying as a witness, to obtain or maintain or enforce patents as of the Invention and affidewise and testifying as a witness, to obtain or maintain or enforce patents for the Invention and affidewise and testifying as a witness, to obtain or maintain or enforce patents in the Invention and improvements therein an any and all countries and to vest title thereto a Assigner.

I hereby authorize and request Substore Kann Murphy & Tenbers LLP to supply and missing patent application identification information or correct any errors in the patent/application identification mormation provided above, whether discovered process of all recordinion

IN WITNESS WHEREOF, each Assignor hereby executes this instrument on the date set forth below

John H. Laeshard, Assignur

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REEL: 040189 FRAME: 0015

Des:	Ronan K. McGovern, Assignor
Witness Signature:	
Print Witness Name:	
Address	
Witness Signature	
Print Witness Name	

Dase: <u>(57/3/2015</u>

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Date: 5/5/2015	Adam M. Weiner, Assignor
and the second	Adaxn M. Weiner, Assignor
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Witness Signature:	Uwaya Warsinger Terrace, Combilize, MA 02.133
Print Witness Name: Davià	Maràné re
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Date:	Syed M. Zubair, Assignor
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Witness Signature:	
Print Witness Name:	
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Date:	
Adam M. Weiner, Assignor	
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Page 4 of 4

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