

Exhibit A

1. U.S. Patent No. 7,435,286, issued October 14, 2008, titled "Sorbents for the Oxidation and Removal of Mercury"
2. U.S. Patent No. 7,615,101, issued November 10, 2009, titled "High Energy Dissociation for Mercury Control Systems"
3. U.S. Patent No. 7,628,969, issued December 8, 2009, titled "Multifunctional Abatement of Air Pollutants in Flue Gas"
4. U.S. Patent No. 8,168,147, issued May 1, 2012, titled "Sorbents for the Oxidation and Removal of Mercury"
5. U.S. Patent No. 8,173,566, issued May 8, 2012, titled "Process for Regenerating a Spent Sorbent"
6. U.S. Patent No. 8,312,822, issued November 20, 2012, titled "Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds"
7. U.S. Patent No. 8,440,585, issued May 14, 2013, titled "Process for Regenerating a Spent Sorbent"
8. U.S. Patent No. 8,512,655, issued August 20, 2013, titled "Sorbents for the Oxidation and Removal of Mercury"
9. U.S. Patent No. 8,652,235, issued February 18, 2014, titled "Sorbents for the Oxidation and Removal of Mercury"
10. U.S. Patent No. 8,807,056, issued August 19, 2014, titled "Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds"
11. U.S. Patent Application Serial No. 13/544,971, filed on July 9, 2012, titled "Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds"
12. U.S. Patent Application Serial No. 13/966,768, filed on August 14, 2013, titled "Sorbents for the Oxidation and Removal of Mercury"
13. U.S. Patent Application Serial No. 14/102,896, filed on December 11, 2013, titled "Sorbents for the Oxidation and Removal of Mercury"
14. U.S. Patent Application Serial No. 14/318,270, filed on June 27, 2014, titled "Sorbents for the Oxidation and Removal of Mercury"
15. U.S. Patent Application Serial No. 14/446,992, filed on July 30, 2014, titled "Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds"

16. U.S. Provisional Patent Application Serial No. 60/605,640, filed on August 30, 2004, titled "Sorbents for the Oxidation and Removal of Mercury"

17. U.S. Provisional Patent Application Serial No. 60/464,868, filed on April 23, 2003, titled "Process for Regenerating a Spent Sorbent"

18. U.S. Provisional Patent Application Serial No. 60/947,543, filed on July 2, 2007, titled "Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds"

ASSIGNMENT

THIS ASSIGNMENT is made and effective as of April 24, 2017 by and between the ENERGY AND ENVIRONMENTAL RESEARCH CENTER FOUNDATION ("EERC Foundation"), a non-profit corporation organized under the laws of the State of North Dakota, having its principal place of business at 15 North 23rd Street, Stop 9018, Grand Forks, North Dakota 58202, and MIDWEST ENERGY EMISSIONS CORP., a Delaware corporation ("ME₂C"), having its principal place of business at 670 D Enterprise Drive, Lewis Center, Ohio 43035.

WHEREAS, EERC Foundation owns by ASSIGNMENT from the named inventors recorded in the United States Patent and Trademark Office, the right, title, and interest in the patents and patent applications listed in **Appendix A** attached hereto; and

WHEREAS, ME₂C desires to own EERC Foundation's entire right, title, and interest in and to the patents and patent applications listed in **Appendix A**.

NOW THEREFORE, be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, the EERC Foundation hereby sells, assigns, transfers and sets over to ME₂C, its lawful successors and assigns, all rights, titles, interests, and accrued causes of action for damages for infringement of, all patents, patent applications, all divisions, substitutions, continuations, continuations-in-part, reissues, reexaminations, and extensions thereof, together with all foreign counterparts thereof and patents issuing thereon derived from or claiming priority of the United States provisional patent application or other provisional patent application filed for an issued patent or patent application as set forth in **Appendix A**;

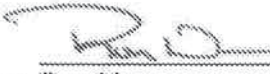
AND, EERC Foundation hereby represents, warrants and agrees that EERC Foundation has the full right to convey the interests assigned by this ASSIGNMENT, and has obtained the approval from the U.S. Department of Energy and from the U.S. Environmental Protection Agency necessary to transfer the interests assigned hereby to ME₂C;

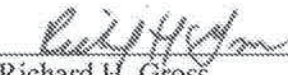
AND, this ASSIGNMENT may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, each party has caused its authorized representative to execute this ASSIGNMENT, effective as of the date indicated above.

Energy and Environmental Research
Center Foundation

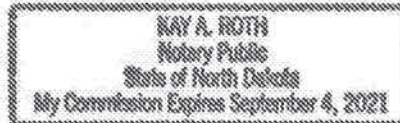
Midwest Energy Emissions Corp.

By: 
Name: Ron Ness
Title: President

By: 
Name: Richard H. Gross
Title: Chief Financial Officer

ACKNOWLEDGMENT

State of North Dakota)
) ss:
County of Burleigh)



On the 21st day of April, 2017, before me, the undersigned, personally appeared Ron Ness, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed this instrument on behalf of Energy and Environmental Research Center Foundation, and acknowledged that he executed it in such representative capacity.

Kay A. Roth
Notary Public

ACKNOWLEDGMENT

State of Ohio)
) ss:
County of Delaware)

On the 19 day of ^{May} April, 2017, before me, the undersigned, personally appeared Richard H. Gross, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed this instrument on behalf of Midwest Energy Emissions Corp., and acknowledged that he executed it in such representative capacity.

Geraldine A. Craig
Notary Public



APPENDIX A

PATENTS AND PATENT APPLICATIONS

Issued Patents

U.S. Patents

- U.S. Patent 7,435,286 – Sorbents for the Oxidation and Removal of Mercury (05-001)
- U.S. Patent 8,173,566 – Process for Regenerating a Spent Sorbent (PAC Regen) (03-023)
- U.S. Patent 8,168,147 – Sorbents for the Oxidation and Removal of Mercury (09-012)
- U.S. Patent 8,312,822 – Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds (06-001)
- U.S. Patent 8,440,585 – Process for Regenerating a Spent Sorbent (03-023US1 CONT)
- U.S. Patent 7,615,101 – High Energy Dissociation for Mercury Control Systems (05-015)
- U.S. Patent 7,628,969 – Multifunctional Abatement of Air Pollutants in Flue Gas (09006CIP of 05-015)
- U.S. Patent 8,807,056 – Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds (06-001CONT)
- U.S. Patent 8,512,655 – Sorbents for the Oxidation and Removal of Mercury (09-012CONT1)
- U.S. Patent 8,652,235 – Sorbents for the Oxidation and Removal of Mercury (09-013CIP)
- U.S. Patent 8,821,819 – Sorbents for the Oxidation and Removal of Mercury (09-012CONT2)
- U.S. Patent 9,011,805 – Carbon Nanocomposite Sorbent and Methods of Using the Same for Separation of One or More Materials from a Gas Stream (12-001)
- U.S. Patent 9,155,997 – Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds (06-001CONT2)
- U.S. Patent 9,468,886 – Sorbents for the Oxidation and Removal of Mercury (09-013CIP CONT1)

Foreign Patents

- Canada Patent 2,523,132 – Process for Regenerating a Spent Sorbent (03-023)
- Canada Patent 2,584,327 – Sorbents for the Oxidation and Removal of Mercury (05-001)
- Canadian Patent 2,757,309 Sorbents for the Oxidation and Removal of Mercury (09-013)
- China Patent ZL200580037037.0 (Certificate No. 635764) – Sorbents and Flue Gas Additives for the Oxidation and Removal of Mercury (05-001)

- Europe Patent 1 796 816 -- Sorbents for the Oxidation and Removal of Mercury (05-001EP)
- Europe Divisional No. 2 431 087 -- Removal of Mercury from Flue Gas (05-001EU Div1)
 - Validating the patent application in Germany for issuance of patent
 - Validating the patent application in the Netherlands for issuance of patent
 - Validating the patent application in the United Kingdom for issuance of patent
- Europe Patent 2 429 685 -- Sorbents for the Oxidation and Removal of Mercury (09013EP)
 - Validating the patent application in Germany for issuance of patent
 - Validating the patent application in the Netherlands for issuance of patent
 - Validating the patent application in the United Kingdom for issuance of patent
- 200480017704.4
- China Patent ZL200680041485.2 -- High-Energy Dissociation for Mercury Control Systems (05-015CN)
- Europe Patent 1 931 449 -- High-Energy Dissociation for Mercury Control Systems (05015EP)
 - Validating the patent application in Germany for issuance of patent
 - Validating the patent application in the Netherlands for issuance of patent
 - Validating the patent application in the United Kingdom for issuance of patent
- China Patent ZL201080017698.8 Process for Regenerating a Spent Sorbent (PAC Regen) (09-013CN)
- China Patent ZL200480017704.4 Process for Regenerating a Spent Sorbent (PAC Regen) (03-023CN)

Pending Patent Applications

U.S. Patents

- Activated Carbon Sorbent Including Nitrogen and Methods of Using the Same -- Application Serial No. 14/195,360 (13-004)
- Sorbents for the Oxidation and Removal of Mercury -- Application Serial No. 14/318,270 (09-012CONT3)
- Sorbents for the Oxidation and Removal of Mercury -- Application Serial No. 15/295,594 (09-013CONT2)
- Carbon Nanocomposite Sorbent and Methods of Using the Same for Separation of One or More Materials from a Gas Stream -- Application Serial No. 14/564,860 (12-001Cont)
- Sorbents for the Oxidation and Removal of Mercury -- Application Serial No. 14/712,558 (09-012CONT4)
- Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds -- Application Serial No. 14/880,463 (06-001CONT3)
- Promoted Ammonium Salt-Protected Activated Carbon Sorbent Particles For Removal of Mercury From Gas Streams-Application Serial No. 15/382,114 (13-004 CIP)

- Sorbent Comprising Carbon and Nitrogen and Methods of Using the Same—Application Serial No. 15/449,112 (13-004 CIP2)
- Carbon Nanocomposite Sorbent and Methods of Using the Same for Separation of One or More Materials from a Gas Stream – Application Serial No. 15/452,527 (12-001Cont2)

Foreign Patents

- Process for Regenerating a Spent Sorbent (PAC Regen) (03-023)
 - Application pending in European Patent Office – Application Serial No. 04750664.7
- Sorbents and Flue Gas Additives for the Oxidation and Removal of Mercury (05-001)
- Note: A different divisional – Application Serial No. 11 189 249.3 – was abandoned as unpatentable over prior art
- Carbon Nanocomposite Sorbent and Methods of Using the Same for Separation of One or More Materials from a Gas Stream (12-001PCT)
 - Application pending in Europe
 - Application pending in China
 - Application pending in Canada
- Activated Carbon Sorbent Including Nitrogen and Methods of Using the Same (13-004PCT)
 - Application pending in Canada
 - Application pending in China
 - Application pending in Europe

Provisional Patent Applications

U.S. Patents

- Sorbents for the Oxidation and Removal of Mercury – U.S. Provisional Patent Application Serial No. 60/605,640 (05-001PRV)
- Process for Regenerating a Spent Sorbent – U.S. Provisional Patent Application Serial No. 60/464,868 (03-023PRV)
- Mercury Control Using Moderate-Temperature Dissociation of Halogen Compounds – U.S. Provisional Patent Application Serial No. 60/947,543 (06-001PRV)
- Activated Carbon Sorbent Including Nitrogen and Methods of Using the Same – Application Serial Number 61/773,549 (13-004PRV)

Appendix A

Application #	SLW File #	Patent #
11/209,163	4820.001US1	7,435,286
10/554,018	4820.002US1	8,173,566
12/419,219	4820.001US3	8,168,147
12/167,054	4820.008US1	8,312,822
13/425,288	4820.002US2	8,440,585
11/220,810	4820.009US1	7,615,101
12/177,771	4820.010US1	7,628,969
13/544,971	4820.008US2	8,807,056
13/427,665	4820.001US4	8,512,655
12/429,058	4820.007US1	8,652,235
13/966,768	4820.001US5	8,821,819
13/453,274	4820.006US1	9,011,805
14/446,992	4820.008US3	9,155,997
14/102,896	4820.007US2	9,468,886
14/195,360	4820.003US1	9,669,355
14/318,270	4820.001US6	
15/295,594	4820.007US3	
14/564,860	4820.006US2	9,662,629
14/712,558	4820.001US7	
14/880,463	4820.008US4	9,675,931
15/382,114	4820.004US1	
15/449,112	4820.005US1	
15/452,527	4820.006US3	
60/605,640	4820.001PRV	
60/464,868	4820.002PRV	
60/947,543	4820.008PRV	
61/773,549	4820.003PRV	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Midwest Energy Emissions Corp.Application No./Patent No.: 15/974,343Filed/Issue Date: May 8, 2018Titled: SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURYMidwest Energy Emissions Corp. a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel ____, Frame ____, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet(s).☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.


Signature

09/27/2019

Date

Nicholas P. Lanzatella

Printed or Typed Name

USPTO Reg. No. 63,803

Title or Registration Number

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4820.001US9
	Application Number	15/974,343
Title of Invention	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
 This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor:				
Legal Name				
Prefix	Given Name	Middle Name	Family Name	Suffix
Residence Information (Select One)				
☐ US Residency ☐ Non US Residency ☐ Active US Military Service				
City		State/Province		Country of Residence
Mailing Address of Inventor:				
Address 1				
Address 2				
City		State/Province		
Postal Code		Country		

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
 For further information see 37 CFR 1.33(a).

☐ An Address is being provided for the correspondence information of this application.

Customer Number	
Email Address	

Application Information:

Title of the Invention			
Attorney Docket Number		Small Entity Status Claimed	☐
Application Type			
Subject Matter			
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4820.001US9
	Application Number	15/974,343
Title of Invention	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country Publication

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	☐ Customer	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number			

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
This Application	continuation of	15/951,970	2018-04-12
Prior Application Status	Pending		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/951,970	continuation of	14/712,558	2015-05-14
Prior Application Status	Pending		

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4820.001US9
	Application Number	15/974,343
Title of Invention	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14/712,558	continuation of	14/318,270	~~2014-06-14~~ 2014-06-27
Prior Application Status		Patented	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
14/318,270	continuation of	13/966,768	2013-08-14
Prior Application Status		Patented	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13/966,768	continuation of	13/427,665	2012-03-22
Prior Application Status		Patented	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13/427,665	continuation of	12/419,219	2009-04-06
Prior Application Status		Patented	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
12/419,219	continuation of	12/201,595	2008-08-29
Prior Application Status		Patented	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
12/201,595	continuation of	11/209,163	2005-08-22
Prior Application Status		Expired	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
11/209,163	Claims benefit of provisional	60/605,640	2004-08-30

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the POX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country	Parent Filing Date (YYYY-MM-DD)	Access Code (if applicable)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4820.001US9
	Application Number	15/974,343
Title of Invention	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
 This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant must opt-out of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is ONLY reviewed and processed with the INITIAL filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby grants the USPTO authority to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

- A. Applicant DOES NOT authorize the USPTO to permit a participating foreign IP office access to the instant**
☐ application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.
- B. Applicant DOES NOT authorize the USPTO to transmit to the EPO any search results from the instant patent**
☐ application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4820.001US9
	Application Number	15/974,343
Title of Invention	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant: ~~Midwest Energy Emissions Corp~~ Midwest Energy Emissions Corp.

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

☒ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor
☐ Person to whom the inventor is obligated to assign	☐ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

☐ Deceased	☐ Legally incapacitated
-----------------------------------	--

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here: ☒

Organization Name: ~~Midwest Energy Emissions Corp~~ Midwest Energy Emissions Corp.

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information:

Address 1	670 D Enterprise Drive		
Address 2			
City	Lewis Center	State/Province	OH
Country	United States of America	Postal Code	43035
Phone Number			
Email Address			

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	4820.001US9
	Application Number	15/974,343
Title of Invention	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

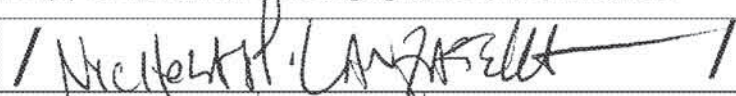
Address 1			
Address 2			
City		State/Province	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature			Date (YYYY-MM-DD)	2019-09-27	
First Name	Nicholas	Last Name	Lanzatella	Registration Number	63,803

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-14**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/974,343	05/08/2018	1776	2620	4820.001US9	16	1

CONFIRMATION NO. 1072

CORRECTED FILING RECEIPT

21186

SCHWEGMAN LUNDBERG & WOESSNER, P.A.

P.O. BOX 2938

MINNEAPOLIS, MN 55402



000000011539710

Date Mailed: 10/02/2019

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Edwin S. Olson, Grand Forks, ND;
Michael J. Holmes, Thompson, ND;
John H. Pavlish, East Grand Forks, MN;

Applicant(s)

Midwest Energy Emissions Corp., Lewis Center, OH;

Power of Attorney: The patent practitioners associated with Customer Number 21186

Domestic Priority data as claimed by applicant

This application is a CON of 15/951,970 04/12/2018
which is a CON of 14/712,558 05/14/2015
which is a CON of 14/318,270 06/27/2014 PAT 9757689
which is a CON of 13/966,768 08/14/2013 PAT 8821819
which is a CON of 13/427,665 03/22/2012 PAT 8512655
which is a CON of 12/419,219 04/06/2009 PAT 8168147
which is a CON of 12/201,595 08/29/2008 ABN
which is a CON of 11/209,163 08/22/2005 PAT 7435286
which claims benefit of 60/605,640 08/30/2004

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 06/05/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/974,343**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

Title

SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY

Preliminary Class

423

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/974,343	05/08/2018	Edwin S. Olson	4820.001US9	1072
21186	7590	10/23/2019		
SCHWEGMAN LUNDBERG & WOESSNER, P.A.			EXAMINER	
P.O. BOX 2938			ORLANDO, AMBER ROSE	
MINNEAPOLIS, MN 55402				
			ART UNIT	PAPER NUMBER
			1776	
			NOTIFICATION DATE	DELIVERY MODE
			10/23/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

SLW@blackhillsip.com
uspto@slwip.com

CORRECTED
Notice of Allowability

Application No.

15/974,343

Applicant(s)

Olson et al.

Examiner

AMBER R ORLANDO

Art Unit

1776

AIA (FITF) Status

No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the IDS filed 09/13/2019.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 27-55. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some *c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☐ Examiner's Amendment/Comment |
| 2. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____. | 6. ☐ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material _____. | 7. ☐ Other _____. |
| 4. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

/AMBER R ORLANDO/
Primary Examiner, Art Unit 1776

Modified form PTO/SB/08A(04-07) OMB 651-0031
US Patent & Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	<i>Complete if Known</i>	
	Application Number	15/974,343
	Filing Date	May 8, 2018
	First Named Inventor	Edwin S. Olson
	Group Art Unit	1776
	Examiner Name	Amber Orlando
Sheet 1 of 1		Attorney Docket No: 4820.001US9

US PATENT DOCUMENTS			
Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document
	US-20190009247A1	1/10/2019	Olson, Edwin S, et al.

FOREIGN PATENT DOCUMENTS				
Examiner Initial *	Foreign Document Number	Publication Date	Name of Patentee or Applicant of cited Document	T 1

OTHER DOCUMENTS – NON PATENT LITERATURE DOCUMENTS		
Examiner Initial *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 1
	"Application Serial No. 14/712,558, Amendment and Response filed 12-03-18 to Non Final Office Action mailed 10-19-18", 28 pgs	
	"Application Serial No. 14/712,558, Final Office Action mailed 01-11-19", 27 pgs	
	"Application Serial No. 15/382,114, Non Final Office Action mailed 12-12-18", 46 pgs	
	"Application Serial No. 15/589,359, Amendment and Response filed 01-17-19 to Non Final Office Action mailed 10-22-18", 14 pgs	
	"Application Serial No. 15/978,760, Amendment and Response filed 12-03-18 to Non Final Office Action mailed 10-10-18", 25 pgs	
	"Application Serial No. 15/978,760, Final Office Action mailed 12-26-18", 21 pgs	
	"Application Serial No. 15/997,091, Final Office Action mailed 01-11-19", 20 pgs	
	"Application Serial No. 15/997,091, Response filed 12-03-18 to Non Final Office Action mailed 11-02-18", 40 pgs.	

EXAMINER

/AMBER R ORLANDO/

DATE CONSIDERED

10/12/2019

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant is to place a check mark here if English language Translation is attached

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.O/

Exhibit 2044

Page 717

Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number	15974343
Filing Date	2018-05-08
First Named Inventor	Edwin S. Olson
Art Unit	1776
Examiner Name	Amber Orlando
Attorney Docket Number	4820.001US9

U.S.PATENTS

Remove

Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5556447		1996-09-17	Srinivasachar, Srivats, et al.	
	2	7361209		2008-04-22	Durham, Michael D, et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020114749	A1	2002-08-22	Cole, Jerald Alan	
	2	20030113239	A1	2003-06-19	Pahlman, John E, et al.	
	3	20030161771	A1	2003-08-28	Oehr, Klaus H	
	4	20040244657	A1	2004-12-09	Srinivasachar, Srivats, et al.	

/AMBER R ORLANDO/

10/12/2019

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number	15974343
Filing Date	2018-05-08
First Named Inventor	Edwin S. Olson
Art Unit	1776
Examiner Name	Amber Orlando
Attorney Docket Number	4820.001US9

5	20070259781	A1	2007-11-08	Sinha, Rabindra K
6	20140099244	A1	2014-04-10	Olson, Edwin S, et al.

If you wish to add additional U.S. Published Application citation information please click the Add button. [Add](#)

FOREIGN PATENT DOCUMENTS

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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button. [Add](#)

NON-PATENT LITERATURE DOCUMENTS

[Remove](#)

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	"Application Serial No. 16/509,071, Non Final Office Action mailed 09-11-19", 21 pgs.	
	2	"Application Serial No. 14/712,558, Non Final Office Action mailed 09-12-19", 15 pgs.	

If you wish to add additional non-patent literature document citation information please click the Add button. [Add](#)

EXAMINER SIGNATURE

Examiner Signature	/AMBER R ORLANDO/	Date Considered	10/12/2019
--------------------	-------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	15974343
Filing Date	2018-05-08
First Named Inventor	Edwin S. Olson
Art Unit	1776
Examiner Name	Amber Orlando
Attorney Docket Number	4820.001US9

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

/AMBER R ORLANDO/

10/12/2019

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number	15974343
Filing Date	2018-05-08
First Named Inventor	Edwin S. Olson
Art Unit	1776
Examiner Name	Amber Orlando
Attorney Docket Number	4820.001US9

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

- ☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Nicholas P. Lanzatella.	Date (YYYY-MM-DD)	2019-09-13
Name/Print	Nicholas P. Lanzatella	Registration Number	63,803

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Petition Request	PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)
Application Number	15974343
Filing Date	08-May-2018
First Named Inventor	Edwin Olson
Art Unit	1776
Examiner Name	AMBER ORLANDO
Attorney Docket Number	4820.001US9
Title	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY

An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary.

APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c).

A grantable petition requires the following items:

- (1) Petition fee; and
- (2) One of the following reasons:
 - (a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable;
 - (b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or
 - (c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).

Petition Fee

☐ Small Entity

☐ Micro Entity

☒ Regular Undiscounted

Reason for withdrawal from issue

- ☐ One or more claims are unpatentable
- ☒ Consideration of a request for continued examination (RCE) (List of Required Documents and Fees)
- ☐ Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).

RCE request, submission, and fee.

- ☒ I certify, in accordance with 37 CFR 1.4(d)(4) that :
The RCE request ,submission, and fee have already been filed in the above-identified application on 2019.07.11
- ☐ Are attached.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

- ☒ An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application.
- ☐ An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity.
- ☐ A sole inventor
- ☐ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application
- ☐ A joint inventor; all of whom are signing this e-petition

Signature	/Nicholas P. Lanzatella/
Name	Nicholas P. Lanzatella
Registration Number	63803

Electronic Patent Application Fee Transmittal

Application Number:	15974343			
Filing Date:	08-May-2018			
Title of Invention:	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY			
First Named Inventor/Applicant Name:	Edwin S. Olson			
Filer:	Janal M. Kalis/Megan Reed			
Attorney Docket Number:	4820.001US9			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
PETITION FEE- 37 CFR 1.17(H) (GROUP III)	1464	1	140	140
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				140



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : November 11, 2019

In re Application of :

Edwin Olson

DECISION ON PETITION

UNDER CFR 1.313(c)(2)

Application No : 15974343

Filed : 08-May-2018

Attorney Docket No : 4820.001US9

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed November 11, 2019, to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED**.

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 1776 for processing of the request for continuing examination under 37 CFR 1.114.

Office of Petitions

Electronic Acknowledgement Receipt

EFS ID:	37715287
Application Number:	15974343
International Application Number:	
Confirmation Number:	1072
Title of Invention:	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY
First Named Inventor/Applicant Name:	Edwin S. Olson
Customer Number:	21186
Filer:	Janal M. Kalis/Megan Reed
Filer Authorized By:	Janal M. Kalis
Attorney Docket Number:	4820.001US9
Receipt Date:	11-NOV-2019
Filing Date:	08-MAY-2018
Time Stamp:	16:16:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$140
RAM confirmation Number	E2019AAG15578067
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition automatically granted by EFS	petition-request.pdf	31716	no	2
			1f26dcf5d16807258bc04080f1b2f613b73eb085		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30601	no	2
			6355ee5599861cbc3ab2a9f273fb577cf1c12c11		
Warnings:					
Information:					
Total Files Size (in bytes):			62317		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

CERTIFICATION AND REQUEST FOR CONSIDERATION OF AN INFORMATION DISCLOSURE STATEMENT FILED AFTER PAYMENT OF THE ISSUE FEE UNDER THE QPIDS PILOT PROGRAM

Non-Provisional Application No. 15/974,343

Filing date: May 8, 2018

First Named Inventor: Edwin S. Olson et al.

Title of Invention: SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY

THE UNDERSIGNED HEREBY CERTIFIES AND REQUESTS THE FOLLOWING FOR THE ABOVEIDENTIFIED APPLICATION.

1. Consideration is requested of the information disclosure statement (IDS) submitted herewith, which is being filed after payment of the issue fee.

2. Check the box next to the appropriate selection:

☐ Each item of information contained in the IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the IDS. See 37 CFR 1.97(e)(1).

OR

☒ No item of information contained in the IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the IDS. See 37 CFR 1.97(e)(2).

OR

☐ See attached certification statement in compliance with 37 CFR 1.97(e).

3. Please charge the IDS fee set forth in 37 CFR 1.17(p) to Deposit Account No. 19-0743.

4. A Petition to Withdraw from Issue After Payment of the Issue Fee (37 CFR 1.313(c)(2)), including the petition fee set forth in 37 CFR 1.17(h), is submitted herewith as a **Web-based ePetition**.

WARNING: Do not submit the petition as a follow-on paper via EFS-Web. Submit the petition as a Webbased ePetition by signing on to EFS-Web as a registered user, selecting the radio button next to "Existing application/patent," and then selecting the radio button next to "ePetition (for automatic processing and immediate grant, if all petitions requirements are met)." Failure to use the Web-based ePetition interface will result in automatic entry of the RCE.

5. A request for continued examination (RCE) under 37 CFR 1.114 and the RCE fee under 37 CFR 1.17(e) are submitted herewith.

6. The RCE will be treated as a "conditional" RCE. In the event the examiner determines that any item of information contained in the IDS necessitates the reopening of prosecution in the application, the undersigned understands that (i) the RCE will be processed and treated as an RCE under 37 CFR 1.114 and therefore (ii) the IDS fee under 37 CFR 1.17(p) will be returned in accordance with 37 CFR 1.97(b)(4). In the event that no item of information in the IDS necessitates reopening prosecution, the undersigned understands that the RCE will not be processed and the RCE fee under 37 CFR 1.17(e) will be returned.

7. This certification and request is being filed as a **Web-based ePetition** and is not accompanied by an amendment to the application. Inclusion of an amendment will result in automatic entry of the RCE.

Signature

Date

November 11, 2019

Name (Print/Typed)

Practitioner Registration Number (If applicable)

Nicholas P. Lanzatella

63,803

Note: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature. If necessary, submit multiple forms for more than one signature, see below.*

☒ *Total of 1 form is submitted.

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL	<i>Application Number</i>	15/974,343
	<i>Filing Date</i>	May 8, 2018
	<i>First Named Inventor</i>	Edwin S. Olson
	<i>Confirmation Number</i>	1072
	<i>Group Art Unit</i>	1776
	<i>Examiner Name</i>	Amber Orlando
	<i>Attorney Docket Number</i>	4820.001US9
	<i>Customer No.</i>	21186

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application entitled

SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY

1. Submission required under 37 C.F.R. § 1.114:

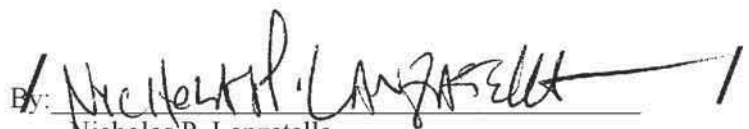
- ☒ Petition to Withdraw from Issue under 37 CFR 1.313(c)(2) submitted as a web-based ePetition via EFS-Web.
- ☒ Certification And Request For Consideration Of An Information Disclosure Statement Filed After Payment Of The Issue Fee Under The QPIDS Pilot Program (1 page), Form 1449 (2 page), and copies of cited documents (15).
- ☒ Certification And Request For Prioritized Examination (Track 1) (1 pg.)

2. Fees

- ☒ Subject to the conditions of the QPIDS Pilot Program as stated above: Authorization to charge deposit account 19-0743 in the amount of \$1900.00 to pay the subsequent RCE filing fee required under 37 C.F.R. § 1.17(e)(2).
- ☒ Authorization to charge deposit account 19-0743 in the amount of \$240.00 to pay the fee for IDS submission required under 37 C.F.R. § 1.17(p).
- ☒ Authorization to charge deposit account 19-0743 in the amount of \$140.00 for the fee under 37 CFR 1.17(h).
- ☒ Authorization to charge deposit account 19-0743 in the amount of \$4000.00 for the Prioritized Examination (Track 1) filing fee as set forth in 37 C.F.R. § 1.17(c); and Authorization to charge Deposit Account 19-0743 for the Processing Fee (Track 1) set forth in 37 C.F.R. § 1.17(i) in the amount of \$140.00.

The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN LUNDBERG & WOESSNER, P.A.

By: 
 Nicholas P. Lanzatella
 Reg. No. 63,803

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	<i>Complete if Known</i>	
	Application Number	15/974,343
	Filing Date	May 8, 2018
	First Named Inventor	Edwin S. Olson
	Group Art Unit	1776
	Examiner Name	Amber Orlando
Sheet 1 of 2		Attorney Docket No: 4820.001US9

US PATENT DOCUMENTS			
Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document
	US-10,471,412	11/12/2019	Olson, Edwin S, et al.
	US-20050274307A1	12/15/2005	Lissianski, Vitali Victor, et al.
	US-20190329179A1	10/31/2019	Olson, Edwin S., et al.
	US-20190329215A1	10/31/2019	Olson, Edwin S, et al.
	US-20190336913A1	11/7/2019	Olson, Edwin S, et al.

FOREIGN PATENT DOCUMENTS			
Examiner Initial *	Foreign Document Number	Publication Date	Name of Patentee or Applicant of cited Document
			T 1

OTHER DOCUMENTS – NON PATENT LITERATURE DOCUMENTS			
Examiner Initial *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T 1
	"Application Serial No. 15/382,114, Response filed 10-3-19 to Final Office Action mailed 06-21-19", 23 pgs		
	"Application Serial No. 15/589,359, Corrected Notice of Allowability mailed 10-11-19", 2 pgs		
	"Application Serial No. 15/974,343, Corrected Notice of Allowability mailed 10-23-19", 2 pgs		
	"Application Serial No. 15/997,091, Corrected Notice of Allowability mailed 10-23-19", 3 pgs		
	"Application Serial No. 16/509,071, Response filed 10-3-2019 to Non Final Office Action mailed 09-11-19", 26 pgs.		
	"Application Serial No. 16/509,102, Non Final Office Action mailed 10-23-19", 26 pgs		
	"Application Serial No. 16/509,146, Non Final Office Action mailed 10-17-19", 24 pgs		
	"Ch. 35: Mercury, Hazardous Air Pollutants and other Multi-Pollutant Control", Tomei, G. L. (Ed.). Steam: its generation and use, Babcock and Wilcox Co., (2015), 24 pgs.		
	"Defendant's Answer and Counterclaim", Midwest Energy Emissions Corp., et al., v. Vistra Energy Corp., et al. - Case 1:19-cv-01334-RGA, 71 pgs.		
	"Original Complaint for Patent Infringement", Midwest Energy Emissions Corp., et al., v. Vistra Energy Corp., et al. - Case 1:19-cv-01334-UNA, 31 pgs.		
	"Plaintiff's Answer to Defendant's Counterclaims", Midwest Energy Emissions Corp., et al., v. Vistra Energy Corp., et al. - Case 1:19-cv-01334-RGA, 37 pgs.		
	OLSON, E.S., et al., "Chemical mechanisms in mercury emission control technologies", J. Phys. IV France 107, Proc. of the XIIth Intl. Conference on Heavy Metals in the Environment Volume II, pp. 979-982, (2003), 6 pgs.		

EXAMINER

DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	<i>Complete if Known</i>	
	Application Number	15/974,343
	Filing Date	May 8, 2018
	First Named Inventor	Edwin S. Olson
	Group Art Unit	1776
	Examiner Name	Amber Orlando
Sheet 2 of 2		Attorney Docket No: 4820.001US9

OTHER DOCUMENTS – NON PATENT LITERATURE DOCUMENTS		
Examiner Initial *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 1
	OLSON, EDWIN S., "Abstract - Multiple Site Model for Flue Gas - Mercury interactions on Activated Carbons: The Basic Site", Abstracts of Papers Part 1, 225th ACS National Meeting, New Orleans, LA, (2003), 3 pgs.	
	OLSON, EDWIN S., et al., "An Improved Model for Flue Gas - Mercury Interactions on Activated Carbons", Proceedings of the Combined Power Plant Air Pollutant Control Mega Symposium, (May 2003), 8 pgs.	
	OLSON, EDWIN, et al., "The Multiple Site Model for Flue Gas - Mercury Interactions on Activated Carbons: The Basic Site", Fuel Chemistry Preprints, 48(1), (2003), 3 pgs.	

EXAMINER

DATE CONSIDERED

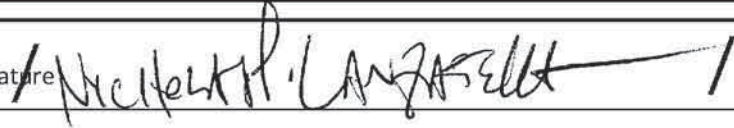
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant is to place a check mark here if English language Translation is attached

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e)
(Page 1 of 1)

First Named Inventor:	Edwin S. Olson	Nonprovisional Application Number (if known):	15/974,343
Title of Invention:	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY	Docket No.:	4820.001US9

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. **Request for Continued Examination – Prioritized Examination under § 1.102(e)(2)**
 - i. A request for continued examination has been filed with, or prior to, this form.
 - ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
 - iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C 371.
 - iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
 - v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature 	Date November 11, 2019
Name (Print/Typed) Nicholas P. Lanzatella	Practitioner Registration Number: 63,803
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.	
*Total of <u>1</u> forms are submitted.	

Electronic Patent Application Fee Transmittal

Application Number:	15974343			
Filing Date:	08-May-2018			
Title of Invention:	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY			
First Named Inventor/Applicant Name:	Edwin S. Olson			
Filer:	Janal M. Kalis/Megan Reed			
Attorney Docket Number:	4820.001US9			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4000	4000
Pages:				
Claims:				
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	1830	1	140	140
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	240	240
RCE- 2ND AND SUBSEQUENT REQUEST	1820	1	1900	1900
Total in USD (\$)				6280

Electronic Acknowledgement Receipt

EFS ID:	37715323
Application Number:	15974343
International Application Number:	
Confirmation Number:	1072
Title of Invention:	SORBENTS FOR THE OXIDATION AND REMOVAL OF MERCURY
First Named Inventor/Applicant Name:	Edwin S. Olson
Customer Number:	21186
Filer:	Janal M. Kalis/Megan Reed
Filer Authorized By:	Janal M. Kalis
Attorney Docket Number:	4820.001US9
Receipt Date:	11-NOV-2019
Filing Date:	08-MAY-2018
Time Stamp:	16:16:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$6280
RAM confirmation Number	E2019AAG17138084
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		_SIGNED_4820_001US9_RCE_QPIDS_Track1.pdf	287285	yes	5
			2f64de740fc2d38d1e79e25cadb6e7aa39a1bedc		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Request for Continued Examination (RCE)		1	1	
	Information Disclosure Statement (IDS) Form (SB08)		2	2	
	Information Disclosure Statement (IDS) Form (SB08)		3	4	
	TrackOne Request		5	5	
Warnings:					
Information:					
2	Non Patent Literature	0001_2_npl_4820001u10_cnoa_10232019_f.pdf	106645	no	3
			40fe9bcb6f3485b76577b5b45e0e496f352e03ed		
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Information:					
3	Non Patent Literature	0002_2_npl_4820001u11_nonfinalofficeactionresponseprioritized_f.pdf	526929	no	26
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4	Non Patent Literature	0003_2_npl_4820001u12_oarnpe_10232019_f.pdf	1143427	no	26
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Warnings:					
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5	Non Patent Literature	0004_2_npl_4820001us9_cnoa_10232019_f.pdf	101253	no	2
			ac49c65c6e93f3d80fe1241a7267bbe4ce6e1eb2		
Warnings:					
Information:					
6	Non Patent Literature	0005_2_npl_4820003us2_cnoa_10112019_f.pdf	101037	no	2
			c000997b186ca7df00d697179b70f9f9c3cc2549		
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Information:					
7	Non Patent Literature	0006_2_npl_4820004us1_amentresponsefinalofficeaction_f.pdf	484739	no	23
			e1293ff944e8cd3c23666bb4b97a2b9158df0bcd		
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Information:					
8	Non Patent Literature	0007_2_npl_4820007us5_oarn_10172019_f.pdf	1057697	no	24
			14423c067c4d4979405cd54d9c930d5c463c5112		
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Information:					
9	Non Patent Literature	0008_2_npl_me2c_aep_answer_counterclaim_10092019_f.pdf	472359	no	71
			a2d354a5a8e9e13d916189c978754ee488f11076		
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Information:					
10	Non Patent Literature	0009_2_npl_me2c_aep_plaintiff_answer_10302019_f.pdf	359806	no	37
			0f825925d9fe977d4795eadac3a3355f698c86e7		
Warnings:					
Information:					
11	Non Patent Literature	0010_2_npl_me2c_vistra_complaint_07172019_f.pdf	233926	no	31
			ce228a657877182c4de71fb90b0079b29321ac78		
Warnings:					
Information:					

12	Non Patent Literature	0011_2_npl_olson_chemicalmechanisms_2003_f.pdf	3555311 bd3960470ae79785829e217ef1c4f46da2973f94	no	6
Warnings:					
Information:					
13	Non Patent Literature	0012_2_npl_olson_improvedmodel_2003_f.pdf	710676 e4583ff2d36eeffb80ae4ca83f48310b3e07004db	no	8
Warnings:					
Information:					
14	Non Patent Literature	0013_2_npl_olson_multiplesite_2003_f.pdf	503809 f844bbb05f103e0c52b30989d81a3c781eec537c	no	3
Warnings:					
The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing					
Information:					
15	Non Patent Literature	0014_2_npl_olson_multiplesite_abstract_2003_f.pdf	1478989 c989216ff7859843db48dd193df0ced38e9f1a2b	no	3
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Information:					
16	Non Patent Literature	0015_2_npl_steam_42_ch_35_2015_f.pdf	4031937 b9d944c4bc03fa307702d1b558af7437dc9ecb94	no	24
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17	Fee Worksheet (SB06)	fee-info.pdf	35561 84fc76f6e05bc206390ca8bdb228d0c0f69b77d9	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			15191386		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/974,343	05/08/2018	Edwin S. Olson	4820.001US9	1072
21186	7590	11/21/2019		
SCHWEGMAN LUNDBERG & WOESSNER, P.A.			EXAMINER	
P.O. BOX 2938			ORLANDO, AMBER ROSE	
MINNEAPOLIS, MN 55402				
			ART UNIT	PAPER NUMBER
			1776	
			NOTIFICATION DATE	DELIVERY MODE
			11/21/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

SLW@blackhillsip.com
uspto@slwip.com

<i>Decision Granting Request for Prioritized Examination (Track I)</i>	Application No. 15/974,343	Applicant(s) Olson et al.	
	Examiner CHERYL P GIBSON BAYLOR	Art Unit OPET	AIA (FITF) Status No
1. THE REQUEST FILED <u>11 November 2019</u> IS GRANTED . The above-identified application has met the requirements for prioritized examination A. ☐ for an original nonprovisional application (Track I). B. ☒ for an application undergoing continued examination (RCE). 2. The above-identified application will undergo prioritized examination. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs: A. filing a <u>petition for extension of time</u> to extend the time period for filing a reply; B. filing an <u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u>, or a multiple dependent claim; C. filing a <u>request for continued examination</u> ; D. filing a notice of appeal; E. filing a request for suspension of action; F. mailing of a notice of allowance; G. mailing of a final Office action; H. completion of examination as defined in 37 CFR 41.102; or I. abandonment of the application. Telephone inquiries with regard to this decision should be directed to CHERYL GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.			
/CHERYL GIBSON BAYLOR/ Paralegal Specialist, OPET			



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/974,343	05/08/2018	Edwin S. Olson	4820.001US9	1072
21186	7590	12/02/2019		
SCHWEGMAN LUNDBERG & WOESSNER, P.A.			EXAMINER	
P.O. BOX 2938			ORLANDO, AMBER ROSE	
MINNEAPOLIS, MN 55402				
			ART UNIT	PAPER NUMBER
			1776	
			NOTIFICATION DATE	DELIVERY MODE
			12/02/2019	ELECTRONIC

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SLW@blackhillsip.com
uspto@slwip.com

Office Action Summary**Application No.**

15/974,343

Applicant(s)

Olson et al.

Examiner

AMBER R ORLANDO

Art Unit

1776

AIA (FITF) Status

No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 08/28/2019.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 27-55 is/are pending in the application.

5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 27-55 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 05/08/2018 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date ____.

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: ____.

Paper No(s)/Mail Date ____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, 365(c), or 386(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of 35 U.S.C. 112(a) or the first paragraph of pre-AIA 35 U.S.C. 112, except for the best mode requirement. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994)

The disclosure of the prior-filed application, Application No. 60/605640, 11/209,163, 12/201,595, 12/419,219, 13/427665, 13/966,768, 14/318,270, 14/712,558, 15/951,970, fails to provide adequate support or enablement in the manner provided by 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph for one or more claims of this application. These applications do not disclose the coal comprising Br₂, HBr, a bromide compound or a combination thereof.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL. — The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 27-54 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. The originally filed disclosure does not disclose the coal comprising added Br₂, HBr, a bromide compound or a combination thereof.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research

agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(I)(1) - 706.02(I)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Claims 27-54 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of copending Application No. 15/951970 ('970) in view of Felsvang et al. US 5,435,980.

'970 discloses the claimed invention except for the coal comprising the additive.

Felsvang et al. discloses this limitation as shown above.

It would have been obvious to one having ordinary skill in the art to have modified the '970 reference to include the coal comprising the additive (Felsvang et al. column 4, lines 39-45) so as to supplement the halogen content of the system so as to increase the mercury sorption capability and because the halogen compounds are recognized equivalents for the removal of Hg.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Claims 27-54 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over 1,9,10,12,16 and 18-42 of copending Application No. 15/997,091 ('091).

Although the claims at issue are not identical, they are not patentably distinct from each other because the subject matter within '091 contains substantially the same subject matter as that of the currently claimed invention.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Claims 27-54 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-29 of copending Application No. 16/509,071('071) in view of Srinivasachar et al. US 2004/0244657.

'071 discloses the claimed invention except for the additive and the additive comprising Br₂, HBr, a bromide compound or a combination thereof.

Srinivasachar et al. disclose this limitation as shown above.

It would have been obvious to one having ordinary skill in the art to have modified the '594 reference to include the additive comprising Br₂, HBr, a bromide compound or a combination thereof (Srinivasachar et al. paragraphs [0036] and [0039]) as Srinivasachar et al. discloses bromide compounds and iodide compounds as function equivalents of Hg sorbents.

Claims 27-54 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-30 of copending Application No. 16/509,146('146).

Although the claims at issue are not identical, they are not patentably distinct from each other because the subject matter within '146 contains substantially the same subject matter as that of the currently claimed invention.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Claims 27-54 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-30 of copending Application No. 16/509,102('102).

Although the claims at issue are not identical, they are not patentably distinct from each other because the subject matter within '146 contains substantially the same subject matter as that of the currently claimed invention.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMBER ROSE ORLANDO whose telephone number is (571)270-3149. The examiner can normally be reached on Monday-Thursday 7:00-5:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571)272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMBER ROSE. ORLANDO

Application/Control Number: 15/974,343
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Primary Examiner
Art Unit 1776

/AMBER R ORLANDO/
Primary Examiner, Art Unit 1776

Notice of References Cited	Application/Control No. 15/974,343		Applicant(s)/Patent Under Reexamination Olson et al.	
	Examiner AMBER R ORLANDO		Art Unit 1776	Page 1 of 4

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8168147-B2	05-2012	Olson; Edwin S.	B01J20/22	423/210
*	B	US-7435286-B2	10-2008	Olson; Edwin S.	B01J20/0262	95/142
*	C	US-6848374-B2	02-2005	Srinivasachar; Srivats	B01D53/10	110/165R
*	D	US-20040003716-A1	01-2004	Nelson, Sidney G. JR.	B01D53/02	95/134
*	E	US-6136749-A	10-2000	Gadkaree; Kishor P.	B01D53/8665	502/180
*	F	US-5569436-A	10-1996	Lerner; Bernard J.	B01D53/64	110/235
*	G	US-20090320678-A1	12-2009	Chang; Ramsay	B01D46/002	95/92
*	H	US-7780765-B2	08-2010	Srinivasachar; Srivats	B01D53/10	110/203
*	I	US-7514052-B2	04-2009	Lissianski; Vitali Victor	B01D53/56	423/210
*	J	US-6818043-B1	11-2004	Chang; Ramsay	B01D53/64	423/213.2
*	K	US-20040086439-A1	05-2004	Vosteen, Bernhard	B01D53/64	423/210
*	L	US-6719828-B1	04-2004	Lovell; John S.	B01D53/02	423/210
*	M	US-6558454-B1	05-2003	Chang; Ramsay	B01D53/10	110/342

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
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	S					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Notice of References Cited</i>	Application/Control No. 15/974,343		Applicant(s)/Patent Under Reexamination Olson et al.	
	Examiner AMBER R ORLANDO		Art Unit 1776	Page 2 of 4

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-6372187-B1	04-2002	Madden; Deborah A.	B01D53/508	110/345
*	B	US-20070180990-A1	08-2007	Downs; William	B01D53/10	95/134
*	C	US-5435980-A	07-1995	Felsvang; Karsten S.	B01D53/10	423/210
*	D	US-20180133646-A1	05-2018	Pavlish; John H.	B01J20/3416	1/1
*	E	US-20170100692-A1	04-2017	Olson; Edwin S.	B01D53/08	1/1
*	F	US-20180229182-A1	08-2018	Olson; Edwin S.	B01D53/10	1/1
*	G	US-20150246315-A1	09-2015	Olson; Edwin S.	B01J20/22	423/215.5
*	H	US-20170239644-A1	08-2017	Olson; Edwin S.	B01J20/3255	1/1
*	I	US-20180257031-A1	09-2018	Olson; Edwin S.	B01J20/3416	1/1
*	J	US-20150098878-A1	04-2015	Olson; Edwin S.	B01J20/12	423/210
*	K	US-9662629-B2	05-2017	Olson; Edwin S.	B01J20/12	1/1
*	L	US-20170173524-A1	06-2017	Olson; Edwin S.	B01J20/12	1/1
*	M	US-20180257030-A1	09-2018	Olson; Edwin S.	B01J20/0262	1/1

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
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	S					
	T					

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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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Notice of References Cited	Application/Control No. 15/974,343		Applicant(s)/Patent Under Reexamination Olson et al.	
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