

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT7392591

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
ZHIMING GAO	04/25/2022
AYYOUB MEHDIZADEH MOMEN	04/25/2022
JOSH A. PIHL	04/25/2022
TIMOTHY J. LACLAIR	04/25/2022
BO SHEN	04/25/2022
XIAOBING LIU	04/25/2022
KYLE R. GLUESENKAMP	04/25/2022
JAMES E. PARKS, II	06/20/2022
KASHIF NAWAZ	05/15/2022

**RECEIVING PARTY DATA**

<b>Name:</b>	UT-Battelle, LLC
<b>Street Address:</b>	One Bethel Valley Road
<b>Internal Address:</b>	4500N, MS-6258
<b>City:</b>	Oak Ridge
<b>State/Country:</b>	TENNESSEE
<b>Postal Code:</b>	37831-6258

**PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	17232274

**CORRESPONDENCE DATA**

Fax Number: (865)574-0381

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

Phone: (865) 574-0393

Email: vanceke@ornl.gov

Correspondent Name: EDNA I. GERGEL

Address Line 1: ONE BETHEL VALLEY ROAD

Address Line 2: 4500N, MS-6258

Address Line 4: OAK RIDGE, TENNESSEE 37831-6258

ATTORNEY DOCKET NUMBER: 4153.1 (UTB)

PATENT

<b>NAME OF SUBMITTER:</b>	KAREN E. VANCE
<b>SIGNATURE:</b>	/KE Vance/
<b>DATE SIGNED:</b>	06/21/2022
<b>Total Attachments: 9</b> source=4153.1 UTB Assignment for EPAS#page1.tif source=4153.1 UTB Assignment for EPAS#page2.tif source=4153.1 UTB Assignment for EPAS#page3.tif source=4153.1 UTB Assignment for EPAS#page4.tif source=4153.1 UTB Assignment for EPAS#page5.tif source=4153.1 UTB Assignment for EPAS#page6.tif source=4153.1 UTB Assignment for EPAS#page7.tif source=4153.1 UTB Assignment for EPAS#page8.tif source=4153.1 UTB Assignment for EPAS#page9.tif	

### RECORDATION FORM COVER SHEET PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

**1. Name of conveying party(ies)**

Zhiming Gao  
Ayyoub Mehdizadeh Momen  
Josh A. Pihl  
Timothy J. Laclair  
Bo Shen  
Xiaobing Liu

Kyle R. Gluesenkamp  
James E. Parks, II  
Kashif Nawaz

Additional name(s) of conveying party(ies) attached?  Yes  No

**2. Name and address of receiving party(ies)**

Name: UT-Battelle, LLC

Internal Address: 4500N, MS-6258

Street Address: One Bethel Valley Road

City: Oak Ridge

State: Tennessee

Country: USA Zip: 37831-6258

Additional name(s) & address(es) attached?  Yes  No

**3. Nature of conveyance/Execution Date(s):**

Execution Date(s) 06/20/2022

- Assignment  Merger
- Security Agreement  Change of Name
- Joint Research Agreement
- Government Interest Assignment
- Executive Order 9424, Confirmatory License
- Other \_\_\_\_\_

**4. Application or patent number(s):**

This document serves as an Oath/Declaration (37 CFR 1.63).

A. Patent Application No.(s)

17/232,274

B. Patent No.(s)

Additional numbers attached?  Yes  No

**5. Name and address to whom correspondence concerning document should be mailed:**

Name: Edna I. Gergel

Internal Address: UT-Battelle, LLC

Street Address: One Bethel Valley Road

4500N, MS-6258

City: Oak Ridge

State: Tennessee Zip: 37831-6258

Phone Number: (865) 574-0393

Docket Number: 4153.1

Email Address: gergelei@ornl.gov

**6. Total number of applications and patents involved:** 1

**7. Total fee (37 CFR 1.21(h) & 3.41)** \$ 40.00

- Authorized to be charged to deposit account
- Enclosed
- None required (government interest not affecting title)

**8. Payment Information**

Deposit Account Number 13-1958

Authorized UserName Karen E. Vance

**9. Signature:**

/Edna I. Gergel/

Signature

06/21/2022

Date

Edna I. Gergel, Reg. No. 50819

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents:

9

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:  
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

**ASSIGNMENT**

WHEREAS, we the below-named inventors whose residences are as stated below, have an interest in an invention entitled:

**Monolithic Gas Trap Adsorbers for High Efficiency, Cost Effective, Low-Emission Condensing Furnace**

(hereinafter referred to as "Subject Invention") for which are described in United States Patent Application No. 17/232,274 filed on April 16, 2021, and

WHEREAS, UT-BATTELLE, LLC, a limited liability company of the State of Tennessee, having an office at One Bethel Valley Road, P. O. Box 2008, Oak Ridge, Tennessee 37831-6258, hereinafter referred to as "ASSIGNEE," is desirous of acquiring our entire right, title and interest of the undersigned in the same;


NOW, THEREFORE, in accordance with the terms of our employment agreement with ASSIGNEE and for good and valuable consideration, the receipt of which is hereby acknowledged, we hereby assign and transfer to ASSIGNEE and its successors in interest our entire right, title and interest in the Subject Invention to all rights of priority thereto pursuant to the International Convention for the Protection of Industrial Property, and in any Letters Patent on the Subject Invention that may be granted in the United States of America and in any and all foreign countries, including any and all Letters Patent that are divisions, reissues, continuations, substitutions or extensions of any Letters Patent or patent applications therefor on the Subject Invention.

We hereby authorize and request the Commissioner of the United States Patent and Trademark Office and the officials of all foreign countries to issue any and all of said Letters Patent, when granted, to the ASSIGNEE.

Further, we hereby agree to communicate to said ASSIGNEE or its representatives any facts known to us respecting said Subject Invention, to testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, substitution, renewal and reissue applications, to execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, and to make all rightful oaths and generally do everything possible to aid said ASSIGNEE and its representatives to obtain and enforce proper protection for said Subject Invention in the United States of America and in any and all foreign countries.

We further agree that the terms, covenants and conditions of this assignment shall inure to the benefit of ASSIGNEE, its successors, assigns, and legal representatives, and shall be binding on us, our heirs, legal representatives, and assigns.

Name of Inventor: **Zhiming Gao**

Signature:  /  / Date: April 25, 2022

Residence: 9535 Clingmans Dom Drive, Knoxville, Tennessee 37922

Name of Inventor: **Ayyoub Mehdizadeh Momen**

Signature:  / \_\_\_\_\_ / Date: \_\_\_\_\_

Residence: 12649 Bayview Drive, Knoxville, Tennessee 37922

Name of Inventor: **Josh A. Pihl**

Signature:  / \_\_\_\_\_ / Date: \_\_\_\_\_


Residence: 1231 Willowood Rd., Knoxville, Tennessee 37922

Name of Inventor: **Timothy J. Laclair**

Signature:  / \_\_\_\_\_ / Date: \_\_\_\_\_

Residence: 107 Winston Lane, Oak Ridge, Tennessee 37830

Name of Inventor: **Bo Shen**

Signature:  /  / Date: 04/25/2022

Residence: 56 Rolling Links Blvd., Oak Ridge, Tennessee 379830

Name of Inventor: **Xiaobing Liu**

Signature:  / \_\_\_\_\_ / Date: \_\_\_\_\_

Name of Inventor: **Zhiming Gao**

Signature:  / / Date: \_\_\_\_\_

Residence: 9535 Clingmans Dom Drive, Knoxville, Tennessee 37922

Name of Inventor: **Ayyoub Mehdizadeh Momen**

Signature:  / *A. Mehdizadeh Momen* / Date: 4/25/2022

Residence: 12649 Bayview Drive, Knoxville, Tennessee 37922

Name of Inventor: **Josh A. Pihl**

Signature:  / / Date: \_\_\_\_\_

Residence: 1231 Willowood Rd., Knoxville, Tennessee 37922

Name of Inventor: **Timothy J. Laclair**

Signature:  / / Date: \_\_\_\_\_

Residence: 107 Winston Lane, Oak Ridge, Tennessee 37830

Name of Inventor: **Bo Shen**

Signature:  / / Date: \_\_\_\_\_

Residence: 56 Rolling Links Blvd., Oak Ridge, Tennessee 379830

Name of Inventor: **Xiaobing Liu**

Signature:  / / Date: \_\_\_\_\_

Name of Inventor: **Zhiming Gao**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

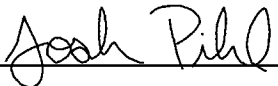
Residence: 9535 Clingmans Dom Drive, Knoxville, Tennessee 37922

Name of Inventor: **Ayyoub Mehdizadeh Momen**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

Residence: 12649 Bayview Drive, Knoxville, Tennessee 37922

Name of Inventor: **Josh A. Pihl**

Signature: \_\_\_\_\_ /  / \_\_\_\_\_ Date: 4/25/2022

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Name of Inventor: **Timothy J. Laclair**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

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Name of Inventor: **Bo Shen**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

Residence: 56 Rolling Links Blvd., Oak Ridge, Tennessee 379830

Name of Inventor: **Xiaobing Liu**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

Name of Inventor: **Zhiming Gao**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

Residence: 9535 Clingmans Dom Drive, Knoxville, Tennessee 37922

Name of Inventor: **Ayyoub Mehdizadeh Momen**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

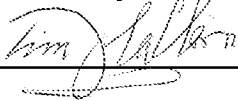
Residence: 12649 Bayview Drive, Knoxville, Tennessee 37922

Name of Inventor: **Josh A. Pihl**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

Residence: 1231 Willowood Rd., Knoxville, Tennessee 37922

Name of Inventor: **Timothy J. Laclair**

Signature: \_\_\_\_\_ /  / \_\_\_\_\_ Date: \_\_\_\_\_ April 25, 2022

Residence: 107 Winston Lane, Oak Ridge, Tennessee 37830

Name of Inventor: **Bo Shen**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_

Residence: 56 Rolling Links Blvd., Oak Ridge, Tennessee 379830

Name of Inventor: **Xiaobing Liu**

Signature: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_



Name of Inventor: **Zhiming Gao**

Signature:  / \_\_\_\_\_ /  Date: \_\_\_\_\_

Residence: 9535 Clingmans Dom Drive, Knoxville, Tennessee 37922

Name of Inventor: **Ayyoub Mehdizadeh Momen**

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Residence: 12649 Bayview Drive, Knoxville, Tennessee 37922

Name of Inventor: **Josh A. Pihl**

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Residence: 1231 Willowood Rd., Knoxville, Tennessee 37922

Name of Inventor: **Timothy J. Laclair**

Signature:  / \_\_\_\_\_ /  Date: \_\_\_\_\_

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Name of Inventor: **Bo Shen**

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Name of Inventor: **Xiaobing Liu**

Signature:  / Xiaobing Liu *Xiaobing Liu* /  Date:  4/25/2022

Residence: 12131 Aspenwood Drive, Knoxville, Tennessee 37934

Name of Inventor: **Kyle R. Gluesenkamp**

Signature:  Date: 4/25/22

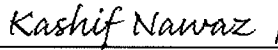
Residence: ~~1465 Snyder Ridge Lane, Knoxville, Tennessee 37932~~  
9109 Carlton Cir, Knoxville TN 37922

Name of Inventor: **James E. Parks, II**

Signature: / Date: \_\_\_\_\_

Residence: 1912 Breezy Ridge Trail, Knoxville, Tennessee 37922

Name of Inventor: **Kashif Nawaz**

Signature: /Kashif Nawaz  Date: 05-15-2022

Residence: 2426 Blackberry Ridge Blvd, Knoxville Tennessee 37932

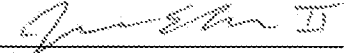
Residence: 12131 Aspenwood Drive, Knoxville, Tennessee 37934

Name of Inventor: **Kyle R. Gluesenkamp**

Signature:  / \_\_\_\_\_ / Date: \_\_\_\_\_

Residence: 1165 Snyder Ridge Lane, Knoxville, Tennessee 37932

Name of Inventor: **James E. Parks, II**

Signature:  /  / Date: 6-20-2022

Residence: 1912 Breezy Ridge Trail, Knoxville, Tennessee 37922

Name of Inventor: **Kashif Nawaz**

Signature:  / \_\_\_\_\_ / Date: \_\_\_\_\_

Residence: 2426 Blackberry Ridge Blvd, Knoxville Tennessee 37932