

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT6519160

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	AGREEMENT FOR THE REASSIGNMENT OF INTELLECTUAL PROPERTY

CONVEYING PARTY DATA

Name	Execution Date
THE BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY	08/04/2020

RECEIVING PARTY DATA

Name:	ZEINAB RAMSHANI
Street Address:	5371 OTTAWA COURT
Internal Address:	APARTMENT 2B
City:	MISHAWAKA
State/Country:	INDIANA
Postal Code:	46545
Name:	MICHAEL J. JOHNSON
Street Address:	801 UNIVERSITY BOULEVARD SE
Internal Address:	SUITE 101
City:	ALBUQUERQUE
State/Country:	NEW MEXICO
Postal Code:	87131
Name:	MASSOOD Z. ATASHBAR
Street Address:	1903 WEST MICHIGAN AVENUE
City:	KALAMAZOO
State/Country:	MICHIGAN
Postal Code:	49008

PROPERTY NUMBERS Total: 2

Property Type	Number
Application Number:	16083971
Application Number:	62319775

CORRESPONDENCE DATA

Fax Number: (312)456-8435

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: 3124568400

Email: chiipmail@gtlaw.com
Correspondent Name: GREENBERG TRAUERIG, LLP
Address Line 1: 77 WEST WACKER DRIVE
Address Line 2: SUITE 3100
Address Line 4: CHICAGO, ILLINOIS 60601-1732

ATTORNEY DOCKET NUMBER:	196119.010100
NAME OF SUBMITTER:	SAMUEL C. MEANS
SIGNATURE:	/Samuel C. Means/
DATE SIGNED:	01/27/2021

Total Attachments: 11

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AGREEMENT FOR THE REASSIGNMENT OF INTELLECTUAL PROPERTY

Notre Dame University Case #16-048

This is an agreement between The Board of Trustees of Western Michigan University ("WMU"), a constitutional corporation of the State of Michigan, and Zeinab Ramshani, Michael J. Johnson and Massod Zandi Atashbar ("Inventor(s)"), and shall become effective on the latest date provided by the signing parties (the "Effective Date").

Inventor(s) acknowledge that they were an employee of WMU and has developed and fully disclosed to WMU certain intellectual property entitled "Piezoelectric Transformer-Driven Electrospray Device" and identified as Notre Dame University technology transfer Case No. 16-048, respectively (the "Inventions"). Inventor(s) further acknowledge that pursuant to WMU's Revised Intellectual Property Policy (the "Policy"), the Invention(s) is at least partially the property of WMU. The Inventor(s) has elected to market, protect, and commercialize the Invention(s) without further WMU involvement and WMU desires to transfer its ownership interest in the Invention(s) to the Inventor(s), subject to certain terms and conditions, in order to allow the Inventor to do so effectively. Furthermore, upon such transfer of ownership, Inventor(s) shall no longer be considered an inventor(s) under the Policy and therefore shall not be eligible to receive royalty income from WMU for the Inventions.

Therefore, the parties agree to the following:

1. In return for the Inventor's obligations as set forth herein, WMU hereby grants to the Inventor its entire right, title and interest in the Invention, subject to WMU's retention of an irrevocable, non-exclusive, royalty-free license to use and practice the Invention internally and further subject to any and all rights or contractual obligations which may exist as the result of government or non-government sponsorship of WMU research contributing to creation or development of the Invention(s).
2. The assignment granted above is made subject to the following terms and conditions:
 - a. Any costs associated with protection, marketing, or licensing of the Invention will not be borne by WMU and the Inventor shall not reimburse WMU for any otherwise unreimbursed patent, marketing, or licensing expenses related to the Invention which WMU may have incurred prior to the date of this Agreement.
 - b. The Inventor shall pay to WMU ten percent (10 %) of any royalties, equity, or other consideration received by the Inventor through subsequent marketing, sales, licensing, sublicensing, and/or other commercialization of the Invention(s). Payments shall be made to WMU on a yearly basis at the address stipulated in Article 15.
 - c. The Inventor shall use due diligence in pursuing appropriate patent, copyright, trademark or other intellectual property protection and in making the benefits of the Invention available to the public on a commercially reasonable basis. Inventor agrees to provide copies of the issued patents, patent applications, trademark or copyright registrations, and/or any license agreements executed for the Invention to WMU.
 - d. The Inventor shall keep complete and accurate records and allow WMU to access those records upon request for the purpose of verifying compliance with the terms of this Agreement.
 - e. If the Invention is patentable and was conceived or first actually reduced to practice in the performance of work under a funding agreement with the U.S. federal government, the Inventor agrees to take over obligations of WMU as set forth in the standard patent rights clause in the funding agreement between WMU and the federal agency which provided the funding. The standard patent rights clause is required by the regulations set forth in 37 CFR Part 401 implementing 35 USC 200 et seq and incorporated by reference herein. Inventor understands and acknowledges that the U.S. Government retains certain rights in the Invention, that the patent application must so state, and that the assignment contained in this agreement is subject to approval by said federal agency.
 - f. If the Invention consists of copyrightable material or technical data, including computer software and documentation, developed under a U.S. Government contract, the Inventor acknowledges that the federal acquisition regulations governing said contract may grant certain rights, including unlimited rights, to the U.S. Government.
 - g. The Inventor agrees that, unless appropriate formal WMU approvals are obtained, continuing development of the Invention will take place without the use of WMU funds, facilities, or funds administered or provided by WMU.

- h. The Inventor shall be responsible at his own expense for the preparation and filing of any documents necessary to perfect this Reassignment, including any assignment filed with the United States Patent and Trademark Office.
3. Nothing herein shall be construed as an assignment or transfer of rights to currently existing patentable inventions or other intellectual properties made or developed by Inventor(s) in which WMU may have an interest, other than the invention(s) as disclosed to WMU and identified by case number(s), title(s), and patent number (if applicable) in paragraph 2, and nothing herein shall be construed as an assignment or transfer of rights to patentable inventions or other intellectual properties which may be created or developed in the future and in which WMU may have an interest.
4. The Inventor shall not use, or allow others to use, the name or trademarks of WMU in connection with marketing or selling the Invention without the prior written permission of WMU, which permission may be withheld at WMU's sole discretion.
5. Inventor warrants and represents that:
 - a. A full and complete disclosure of the Invention has been made to WMU and is attached hereto as part of Appendix A;
 - b. Any outside sponsorship under which the Invention may have been created or developed has been clearly identified as part of such disclosure; and
 - c. All WMU employee or student Inventors (or authors in the case of copyrightable materials) have been named and are included as parties to this Agreement.
6. If there is more than one WMU Inventor, the obligations of the Inventors under this Agreement shall be joint and several.
7. If the Inventor fails to comply with the terms and conditions set forth in this Agreement, this assignment shall remain in effect and WMU shall have all other rights at law or equity to enforce such compliance.
8. WMU makes no warranties whatsoever with respect to the Invention, express or implied, and hereby disclaims any warranties of title, merchantability or fitness for a particular purpose.
9. WMU makes no warranty that the Invention does not or will not infringe any patent or other proprietary right of third parties or that a valid patent will issue on the Invention.
10. In no event shall WMU be liable for any loss, claim, damage, or liability whatsoever, that may arise from or in connection with use of the Invention and Inventor(s) shall defend and indemnify WMU in the event of any such claims.
11. This Agreement shall be binding on and inure to the benefit of the parties hereto and their respective heirs, beneficiaries, and assigns.
12. Inventor shall not assign any right or obligation under this Agreement without the prior written approval of WMU, which approval shall not be unreasonably withheld.
13. Neither party shall be deemed to be an agent of the other in connection with the exercise of any rights hereunder, and neither shall have any right or authority to assume or create any obligation or responsibility on behalf of the other.
14. In the event any term, provision, or covenant of this Agreement shall be determined by a court of competent jurisdiction to be invalid, illegal, or unenforceable, that term will be limited or deleted, but only to the extent necessary to remove such invalidity, illegality, or unenforceability, and the remaining terms, provisions, or covenants shall not in any way be affected or impaired thereby.
15. All notices or payments shall be made by hand delivery or registered or certified mail to the following addresses; or such address as either party shall designate by written notice given to the other party.

If to WMU:

Director, Technology and Commercialization
Western Michigan University
Office of Research and Innovation
210 W Walwood Hall
Kalamazoo, Michigan 49008-5456
ATTN: File No.

If to the Inventor:

Massod Zandi Atashbar
Department of Computer and Electrical Engineering
Western Michigan University
massood.ataashbar@wmich.edu

16. Both parties agree to execute any lawful documents consistent with the intent of this agreement which may be required to protect the proprietary rights in the Invention or to confirm or grant any rights set forth in Section 1 of this agreement.

ACCEPTED AND AGREED TO:

INVENTORS

FOR THE BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY

By 

By 

Name: Massod Zandi Atashbar

Typed Name: Terri G. Kinzy

Title: Professor

Title: Vice President for Research and Innovation

Date: _____

Date: 8/4/2020

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: _____

Title: _____

Date: _____

If to WMU:

Director, Technology and Commercialization
Western Michigan University
Office of Research and Innovation
210 W Walwood Hall
Kalamazoo, Michigan 49008-5456
ATTN: File No.

If to the Inventor:

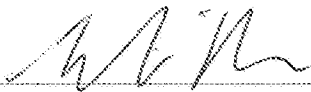
Massod Zandi Atashbar
Department of Computer and Electrical Engineering
Western Michigan University
massood.atashbar@wmich.edu

16. Both parties agree to execute any lawful documents consistent with the intent of this agreement which may be required to protect the proprietary rights in the Invention or to confirm or grant any rights set forth in Section 1 of this agreement.

ACCEPTED AND AGREED TO:

INVENTORS

FOR THE BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY

By 

By _____

Name: Zeinab Ramshani

Typed Name: Terri G. Kinzy

Title _____

Title: Vice President for Research and Innovation

Date 08/03/2020

Date _____

By _____

Name: _____

Title _____

Date _____

By _____

Name: _____

Title _____

Date _____

15. All notices or payments shall be made by hand delivery or registered or certified mail to the following addresses, or such address as either party shall designate by written notice given to the other party.

If to WMT:

Director, Technology and Commercialization
Western Michigan University
Office of Research and Innovation
210 W Walwood Hall
Kalamazoo, Michigan 49008-5456
ATTN: File No.

If to the Inventor:

Masood Zandi Anashbar
Department of Computer and Electrical Engineering
Western Michigan University
masood.anashbar@wmich.edu

16. Both parties agree to execute any lawful documents consistent with the intent of this agreement which may be required to protect the proprietary rights in the invention or to confirm or grant any rights set forth in Section 1 of this agreement.

ACCEPTED AND AGREED TO:

INVENTORS

FOR THE BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY

By: Michael Johnson
Name: Michael Johnson
Title: Post Doc
Date: 8/17/2020

By: _____
Typed Name: Terril G. Kinzy
Title: Vice President for Research and Innovation
Date: _____

By: _____
Name: _____
Title: _____
Date: _____

By: _____
Name: _____
Title: _____
Date: _____

Appendix A

For OTT Use Only

Docket Number: 16-048

Received on: 4/5/2016



Office of Technology Transfer

Invention and Technology Disclosure Form

Researchers at the University of Notre Dame are seeking solutions to some of society's most vexing problems. As they make discoveries or develop tools, technologies, and inventions that may be of benefit to society at large, the University has an obligation to share such discoveries, inventions, or technologies so that all may benefit.

In addition, federal regulations require that all inventions made as a result of federally funded research must be reported to the sponsoring agency, and many industry-sponsored research agreements carry similar obligations. To that end, the University of Notre Dame, through the Office of Technology Transfer and in accordance with the University's Intellectual Property Policy, has established a means for reporting new inventions and technologies that they may be reported, evaluated, protected, and marketed.

This Invention Disclosure Form serves the dual purpose of (i) notifying the University of your new invention or technology in order to meet the University's reporting requirements and (ii) of providing sufficient information for the Office of Technology Transfer to evaluate your technology for its suitability for patenting, marketing, and licensing.

Note: As you may know, the Engineering, Science, and Technology Entrepreneurship Excellence Masters Program (ESTEEM - www.esteem.nd.edu) and the Master of Science in Patent Law (MSPL - www.patentlaw.nd.edu) are one-year master's programs that provide professional training for students interested in technology commercialization and patent law. With your permission, as indicated by checking the YES box(es) below, the information you provide in this form may also be shared with faculty, staff and students of the ESTEEM and MSPL programs for use as thesis projects. Checking the YES box(es) indicates that you are willing to act as a project mentor to a student from one of these programs. If you do not want this information shared with either of these programs, please mark the NO box(es) below:

I/we would like this technology considered as a thesis project for the ESTEEM program: YES NO

I/we would like this technology considered as a thesis project for the MSPL program: YES NO

1. Title: Piezoelectric Transformer-Driven Electrospray Device

(Please use a descriptive but non-disclosing title. For instance, avoid use of formulae or other information that may be proprietary.)

2. Attach a non-confidential abstract describing the invention.

This patent covers a new method to generate a broad area electrospray using a piezoelectric transformer for spray coating, materials synthesis, thermal management, and chemical analysis applications, among others. Electrosprays can be generated by the application of a high voltage, on the order of kilovolts, to a liquid surface, and are typically formed on the liquid exiting a capillary

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orifice. A piezoelectric transformer amplifies an input alternating current (AC) voltage to values several orders of magnitude larger, reaching magnitudes of several kilovolts. That is a large polarization can be generated along the piezoelectric surface by the electromechanical coupling effect in piezoelectric crystals. If properly mounted, this large polarization manifests itself as a very large surface potential. In this invention, liquid is brought to the surface of the piezoelectric crystal via a wicking material, and the large surface voltage induces an electro spray that ejects along the entire width of the crystal. As the electro spray electrokinetically pulls liquid from the wick supply, no external flow source is needed to drive the liquid flow. This electro spray covers a broad area, commensurate with the width of the crystal, and can be generated continuously and uniformly.

3. Describe the invention completely. Include: any relevant background information necessary to understand the invention; a description of the best way of making/using the invention; and any potential real-world uses for the invention. Feel free to attach one or more recently-submitted paper manuscripts or grant proposals to address this request. Please make sure these documents provide all of the above information. If these documents are not available, please provide a similar level of detail in the expandable text box immediately below.

The attached documents describe the science and background for this invention and includes the relevant data that demonstrates the validity of the idea.

4. History and Development of the Invention

EVENTS	DATE	REFERENCES & COMMENTS
A. Initial Idea	7/15/2015	Idea formulated after a group meeting about surface acoustic wave atomization complications and the need for a proper replacement.
B. Idea for the fully-developed invention (if different from A)		
C. First creation of the invention in physical form	7/23/2015	Spray formed using the piezoelectric transformer and some images were recorded.
D. First public disclosure (eg. - papers, abstracts, posters, proceedings, conference talks)	4/2016	To be submitted as a journal article
E. Planned future public disclosure	6/16/2016	Presentation at Annual Meeting of the Electrostatics Society of America, West Lafayette, IN.

5. Related publications by others

a. If you did not provide a paper manuscript or grant proposal in response to question #3, please provide full citations for any relevant publications here.

See the citations on the attached manuscript.

b. Have any of the inventors named in paragraph #6 below, or anyone who works for/with the inventors, searched a patent database to identify patents on closely-related technologies? ("NO" is a perfectly fine answer.) If "YES", please list the patent numbers for any patents you identified.

No Yes

patents were identified.

6. Inventors or Developers:

The information below is required to file a patent application. If there are more than 3 co-inventors, please add enough fields or attach additional pages for all inventors.

Lead Inventor (and primary point of contact): David B. Go

Institution/Department: Department of Aerospace and Mechanical Engineering
University of Notre Dame

Email Address: dgo@nd.edu

Home Address: 53444 Juniper Road, South Bend, IN 46637
United States

Percent Contribution: 30%

Inventor: Zeinab Ramshani

Institution/Department: Department of Computer and Electrical Engineering
Western Michigan University

Email Address: zeinab.ramshani@wmich.edu , zramshan@nd.edu

Home Address: 1070 Claymoor Dr., Apt. 2B, Kalamazoo, MI, 49009
United States

Percent Contribution: 30%

Inventor: Michael J. Johnson

Institution/Department: Department of Aerospace and Mechanical Engineering
University of Notre Dame

Email Address: mjohns47@nd.edu

Home Address: 1516 Marigold Way, Unit 601, South Bend, IN 46617
United States

Percent Contribution: 30%

Inventor: Massod Zandi Atashbar

Institution/Department: Department of Computer and Electrical Engineering
Western Michigan University

Email Address: massood.atashbar@wmich.edu

Home Address: 1070 Claymoor Dr., Apt. 2B, Kalamazoo, MI, 49009
United States

Percent Contribution: 10%

7. Obligations to third parties

a. What funds supported the work leading to this invention? Please list **all** sources of funding for the invention.

Were funds from a corporate sponsor used in the work leading to the invention? YES NO

Were funds from a federal agency used in the work leading to the invention? YES NO

i. If a non-Notre Dame sponsor, indicate below:

Contract/Grant No.:	Sponsor Name/Agency	ND Principal Investigator

ii. List any additional federal, non-federal, foundation and industry funding, gifts, Notre Dame funds, etc.

b. Provide information about **any other agreement(s)** pertaining to the invention (e.g. material transfer, collaboration, or patent agreement with another entity (academic, corporate, or other)).

Name of Entity: _____ Type of Agreement: _____

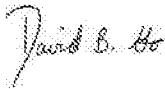
Name of Entity: _____ Type of Agreement: _____

Name of Entity: _____ Type of Agreement: _____


8. List any companies you think might be interested in using this invention. Provide names and contact information for any personal contacts you have at these companies.

9. ASSIGNMENT OF INVENTION

I understand that I have certain rights and obligations as set forth in the University's Intellectual Property Policy. I have read and understand the Intellectual Property Policy, and I agree to fulfill the obligations that I have under the Policy. Accordingly, I hereby assign all right, title, and interest in the disclosed invention or technology, whether patentable or not, to the University of Notre Dame du Lac and agree to execute all documents necessary for the University to perfect its rights in the invention. (Note: please expand signature field below or add additional signature pages if more than 3 co-inventors.)

David B. Go _____  _____ 04/05/2016
Inventor's Name Inventor's Signature Date

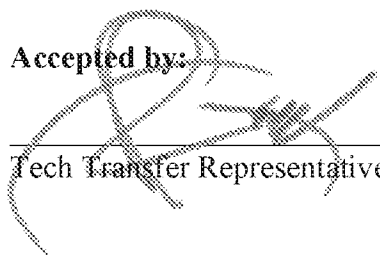
Zeinab Ramshani _____
Inventor's Name Inventor's Signature Date

Michael J. Johnson _____  _____ 04/05/2016
Inventor's Name Inventor's Signature Date

Massod Zandi Atashbar _____
Inventor's Name Inventor's Signature Date

10. INVENTION ACKNOWLEDGED BY:

PI's Signature (if PI is not a named inventor) Date

Accepted by:  _____
Tech Transfer Representative R Page Heller 4/5/2016
Date

Please submit completed disclosure
to: University of Notre Dame
Office of Technology
Transfer 940 Grace Hall
Notre Dame, IN 46556

Phone: (574) 631-4551
Fax: (574) 631-1819
Email: ott@nd.edu
Web: ott.nd.edu

Rev5/06