

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

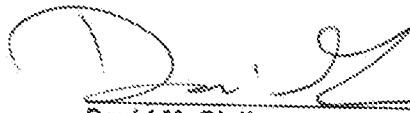
EPAS ID: PAT4690249

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
DAVID M. GIULIANO	05/28/2013
GREGORY SZCZESZYNSKI	03/26/2013
RAYMOND BARRETT JR.	01/15/2012
RECEIVING PARTY DATA	
Name:	ARCTIC SAND TECHNOLOGIES, INC.
Street Address:	25 BURLINGTON MALL ROAD, SUITE 416
City:	BURLINGTON
State/Country:	MASSACHUSETTS
Postal Code:	01803
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15813505
CORRESPONDENCE DATA	
Fax Number:	(617)500-2499
<i>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.</i>	
Phone:	617-500-2500
Email:	INFO@ORPATENT.COM
Correspondent Name:	OCCHIUTI & ROHLICEK LLP
Address Line 1:	321 SUMMER ST.
Address Line 4:	BOSTON, MASSACHUSETTS 02210
ATTORNEY DOCKET NUMBER:	30096-007004
NAME OF SUBMITTER:	CASSIE A. ZALESKI
SIGNATURE:	/Cassie A. Zaleski/
DATE SIGNED:	11/15/2017
Total Attachments: 5	
source=AS_Assignment#page1.tif	
source=AS_Assignment#page2.tif	
source=AS_Assignment#page3.tif	
source=AS_Assignment#page4.tif	

ASSIGNMENT

For valuable consideration, we, **David M. Giuliano** of 12 Parkway Road, Brookline, MA 02445, **Gregory Szczeszynski** of 77 Pepperell Rd., Hollis, NH 03049, and **Raymond Barrett Jr.** of 80 Front St., Merrimack, NH 03054, hereby assign to **Arctic Sand Technologies, Inc.**, a corporation of Massachusetts, having a place of business at 150 CambridgePark Drive, Suite 705, Cambridge, MA 02140, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are subject of an application for United States Patent signed by us, entitled **EFFICIENT GATE DRIVERS FOR SWITCHED CAPACITOR CONVERTERS**, filed 3/15/2013, and assigned U.S. Serial Number 13/837,796, and we authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting above the filing date and serial number of said application when known; this assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

Date: 05/28/2013

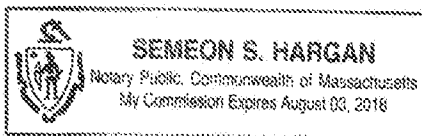


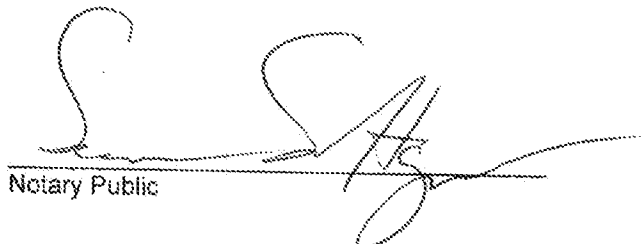
David M. Giuliano

STATE OF Massachusetts)
) SS.
COUNTY OF Middlesex)

On May 28, 2013, before me, the undersigned, a notary public for the State of Massachusetts, there personally appeared **David M. Giuliano** personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this Assignment, who acknowledged having executed the same in his authorized capacity and that by his signature on this Assignment, the person or the entity upon behalf of which he acted, executed this Assignment.

WITNESS my hand and official seal.





Notary Public

CONSULTING AGREEMENT

This CONSULTING AGREEMENT (the "Agreement"), made this **15 January, 2012**, is entered into by Arctic Sand Technologies, Inc., a Delaware corporation with its principal place of business at 109 Fayerweather Street, Cambridge, MA 02138 (the "Company"), and **Raymond Barrett, Jr.**, representing **American Research and Development, LLC**, registered at **1031 SW 28 Street, Fort Lauderdale, FL 33315**, (the "Consultant").

INTRODUCTION The Company desires to retain the services of the Consultant and the Consultant desires to perform certain services for the Company. In consideration of the mutual covenants and promises contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the parties agree as follows:

1. **Services.** The Consultant agrees to perform such consulting, advisory and related services to and for the Company as may be reasonably requested from time to time by the Company, including, but not limited to, the services specified on Schedule A to this Agreement. The Consultant agrees to devote such time to the performance of such services as shall be necessary to meet the schedule for completion of the deliverable contemplated by Schedule A. During the Consultation Period (as defined below), the Consultant shall not engage in any activity that has a conflict of interest with the Company, including any competitive employment, business, or other activity, and he shall not assist any other person or organization that competes, or intends to compete, with the Company.

2. **Term.** This Agreement shall commence on the date hereof and shall continue until **June 30, 2012** (such period, as it may be extended, being referred to as the "Consultation Period"), unless sooner terminated in accordance with the provisions of Section 4.

3. **Compensation.**

3.1 **Consulting Fees.** Upon request of company, the Consultant shall submit to Company monthly statements, in a form satisfactory to the Company, of services performed for the Company in the previous month. The Company shall pay to the Consultant consulting fees in the amount and according to schedule provided in Schedule A.

3.2 **Reimbursement of Expenses.** The Company shall reimburse the Consultant for all reasonable and necessary expenses incurred or paid by the Consultant in connection with, or related to, the performance of his services under this Agreement, provided that the Consultant received prior written approval to incur such expenses from the President of the Company, or from such person as the President may designate. The Consultant shall submit to the Company itemized monthly statements, in a form satisfactory to the Company, of such expenses incurred in the previous month. The Company shall pay to the Consultant amounts

shown on each such statement within 30 days after receipt thereof.

3.3 **Benefits.** The Consultant shall not be entitled to any benefits, coverages or privileges, including, without limitation, social security, unemployment, medical or pension payments, made available to employees of the Company.

4. **Termination.** The Company may, without prejudice to any right or remedy it may have due to any failure of the Consultant to perform his obligations under this Agreement, terminate the Consultation Period upon 10 days' prior written notice to the Consultant. In the event of such termination, the Consultant shall be entitled to payment for services performed and expenses paid or incurred prior to the effective date of termination, subject to the limitation on reimbursement of expenses set forth in Section 3.2. Such payments shall constitute full settlement of any and all claims of the Consultant of every description against the Company. Notwithstanding the foregoing, the Company may terminate the Consultation Period, effective immediately upon receipt of written notice, if the Consultant breaches or threatens to breach any provision of Section 6.

5. **Cooperation.** The Consultant shall use his best efforts in the performance of his obligations under this Agreement. The Company shall provide such access to its information and property as may be reasonably required in order to permit the Consultant to perform his obligations hereunder. The Consultant shall cooperate with the Company's personnel, shall not interfere with the conduct of the Company's business and shall observe all rules, regulations and security requirements of the Company concerning the safety of persons and property.

6. **Inventions and Proprietary Information.**

6.1 **Inventions.**

(a) All inventions, discoveries, computer programs, data, technology, designs, innovations and improvements (whether or not patentable and whether or not copyrightable) ("Inventions") related to the business of the Company which are made, conceived, reduced to practice, created, written, designed or developed by the Consultant, solely or jointly with others and whether during normal business hours or otherwise, during the Consultation Period or thereafter if resulting or directly derived from Proprietary Information (as defined below), shall be the sole property of the Company. The Consultant hereby assigns to the Company all Inventions and any and all related patents, copyrights, trademarks, trade names, and other industrial and intellectual property rights and applications therefor, in the United States and elsewhere and appoints any officer of the Company as his duly authorized attorney to execute, file, prosecute and protect the same before any government agency, court or authority. Upon the request of the Company and at the Company's expense, the Consultant shall execute

such further assignments, documents and other instruments as may be necessary or desirable to fully and completely assign all Inventions to the Company and to assist the Company in applying for, obtaining and enforcing patents or copyrights or other rights in the United States and in any foreign country with respect to any Invention. The Consultant also hereby waives all claims to moral rights in any Inventions. Should the Company file patents based on Inventions developed by Consultant, Consultant will be offered to appear as author or co-authorship of such patents, as dictated by US Patent Law.

(b) The Consultant shall promptly disclose to the Company all Inventions and will maintain adequate and current written records (in the form of notes, sketches, drawings and as may be specified by the Company) to document the conception and/or first actual reduction to practice of any Invention. Such written records shall be available to and remain the sole property of the Company at all times.

6.2 Proprietary Information.

(a) The Consultant acknowledges that his relationship with the Company is one of high trust and confidence and that in the course of his service to the Company he will have access to and contact with Proprietary Information. The Consultant agrees that he will not, during the Consultation Period or at any time thereafter, disclose to others, or use for his benefit or the benefit of others, any Proprietary Information or Invention.

(b) For purposes of this Agreement, Proprietary Information shall mean, by way of illustration and not limitation, all information (whether or not patentable and whether or not copyrightable) owned, possessed or used by the Company, including, without limitation, any Invention, formula, vendor information, customer information, apparatus, equipment, trade secret, process, research, report, technical data, know-how, computer program, software, software documentation, hardware design, technology, marketing or business plan, forecast, unpublished financial statement, budget, license, price, cost and employee list that is communicated to, learned of, developed or otherwise acquired by the Consultant in the course of his service as a consultant to the Company.

(c) The Consultant's obligations under this Section 6.2 shall not apply to any information that (i) is or becomes known to the general public under circumstances involving no breach by the Consultant or others of the terms of this Section 6.2, (ii) is generally disclosed to third parties by the Company without restriction on such third parties, or (iii) is approved for release by written authorization of the Board of Directors of the Company.

(d) Upon termination of this Agreement or at any other time upon request by the Company, the Consultant shall promptly deliver to the Company all records, files, memoranda, notes, designs, data, reports, price lists, customer lists, drawings, plans, computer programs, software, software documentation, sketches, laboratory and research notebooks

and other documents (and all copies or reproductions of such materials) relating to the business of the Company.

(e) The Consultant represents that his retention as a consultant with the Company and his performance under this Agreement does not, and shall not, breach any agreement that obligates him to keep in confidence any trade secrets or confidential or proprietary information of his or of any other party or to refrain from competing, directly or indirectly, with the business of any other party. The Consultant shall not disclose to the Company any trade secrets or confidential or proprietary information of any other party.

(f) The Consultant acknowledges that the Company from time to time may have agreements with other persons or with the United States Government, or agencies thereof, that impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. The Consultant agrees to be bound by all such obligations and restrictions that are known to him and to take all action necessary to discharge the obligations of the Company under such agreements.

6.3 Remedies. The Consultant acknowledges that any breach of the provisions of this Section 6 shall result in serious and irreparable injury to the Company for which the Company cannot be adequately compensated by monetary damages alone. The Consultant agrees, therefore, that, in addition to any other remedy it may have, the Company shall be entitled to enforce the specific performance of this Agreement by the Consultant and to seek both temporary and permanent injunctive relief (to the extent permitted by law) without the necessity of proving actual damages.

7. **Independent Contractor Status.** The Consultant shall perform all services under this Agreement as an "independent contractor" and not as an employee or agent of the Company. The Consultant is not authorized to assume or create any obligation or responsibility, express or implied, on behalf of, or in the name of, the Company or to bind the Company in any manner.

8. **Notices.** All notices required or permitted under this Agreement shall be in writing and shall be deemed effective upon personal delivery or upon deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party at the address shown above, or at such other address or addresses as either party shall designate to the other in accordance with this Section 8.

9. **Pronouns.** Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular forms of nouns and pronouns shall include the plural, and vice versa.

10. **Entire Agreement.** This Agreement constitutes the entire agreement between the parties and supersedes all prior

ArcticSand

tel 617-460-2028 • contact@arcticsand.com • fax 617-945-7615

agreements and understandings, whether written or oral, relating to the subject matter of this Agreement.

11. **Amendment.** This Agreement may be amended or modified only by a written instrument executed by both the Company and the Consultant.

12. **Governing Law.** This Agreement shall be construed, interpreted and enforced in accordance with the laws of the Commonwealth of Massachusetts.

13. **Successors and Assigns.** This Agreement shall be binding upon, and inure to the benefit of, both parties and their respective successors and assigns, including any corporation with which, or into which, the Company may be merged or which may succeed to its assets or business, provided, however, that the obligations of the Consultant are personal and shall not be assigned by him.

14. **Miscellaneous.**

14.1 No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar or waiver of any right on any other occasion.

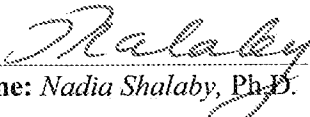
14.2 The captions of the sections of this Agreement are for convenience of reference only and in no

way define, limit or affect the scope or substance of any section of this Agreement.

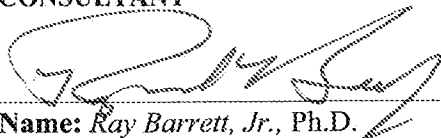
14.3 In the event that any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year set forth above.

ARCTIC SAND TECHNOLOGIES, INC.

By: 
Name: *Nadia Shalaby, Ph.D.* Title: *CEO*

CONSULTANT


Name: *Ray Barrett, Jr., Ph.D.*