

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4576798

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
LIDU HUANG	08/21/2017
MAC D. APODACA	08/21/2017
TOSHIKI HIRANO	08/24/2017
AILIAN ZHAO	08/30/2017
GUY WICKER	08/24/2017
FEDERICO NARDI	08/18/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	SANDISK TECHNOLOGIES LLC
<b>Street Address:</b>	6900 DALLAS PARKWAY, SUITE 325
<b>Internal Address:</b>	LEGACY TOWN CENTER
<b>City:</b>	PLANO
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	75024
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15693376
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(415)489-4150
<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>	
<b>Phone:</b>	415-489-4100
<b>Email:</b>	gbaron@vierramagen.com
<b>Correspondent Name:</b>	TYLER THORP
<b>Address Line 1:</b>	575 MARKET STREET, SUITE 3750
<b>Address Line 4:</b>	SAN FRANCISCO, CALIFORNIA 94105
<b>ATTORNEY DOCKET NUMBER:</b>	SAND-02130US0
<b>NAME OF SUBMITTER:</b>	TYLER THORP
<b>SIGNATURE:</b>	/Tyler Thorp/
<b>DATE SIGNED:</b>	09/01/2017

**Total Attachments: 7**

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**JOINT TO CORPORATE ASSIGNMENT**

WHEREAS, the undersigned Inventors:

- (1) Lidu Huang,  
a resident of Danville, California;
- (2) Mac D. Apodaca,  
a resident of San Jose, California;
- (3) Toshiki Hirano,  
a resident of San Jose, California;
- (4) Ailian Zhao,  
a resident of Slingerlands, New York;
- (5) Guy Charles Wicker,  
a resident of Southfield, Michigan; and
- (6) Federico Nardi,  
a resident of San Jose, California;

have invented certain new and useful improvements in:

PHASE CHANGE MEMORY ELECTRODE WITH MULTIPLE THERMAL INTERFACES

and have executed a declaration for an application for a United States Patent disclosing and identifying the invention, the declaration being executed on 8/21/17; 8/24/17; 8/30/17.

WHEREAS SanDisk Technologies LLC (hereinafter termed "Assignee"), a limited liability company of the State of Texas, having a place of business at 6900 Dallas Parkway, Suite 325, Legacy Town Center, Plano, State of Texas, wishes to acquire the entire right, title and interest in and to said application and the invention disclosed therein, and in and to all embodiments of the invention, heretofore conceived, made or discovered jointly or severally by said Inventors (all collectively hereinafter termed "said invention"), and in and to any and all patents, certificates of invention and other forms of protection thereon (hereinafter termed "patents") applied for or granted in the United States and/or other countries.

NOW THEREFORE, for good and valuable consideration acknowledged by each of said Inventors to have been received in full from said Assignee:

1. Said Inventors do hereby sell, assign, transfer and convey to said Assignee, the entire right, title and interest (a) in and to said application and said invention; (b) in and to all


rights to apply in any or all countries of the world for patents, certificates of inventions or other governmental grants on said invention, including the right to apply for patents pursuant to the International Convention for the Protection of Industrial Property or pursuant to any other convention, treaty, agreement or understanding; (c) in and to any and all applications filed and any and all patents, certificates of inventions or other governmental grants granted on said invention in the United States or any other country, including each and every application filed and each and every patent granted on any application which is a division, substitution, or continuation of any of said applications; (d) in and to each and every reissue or extension of any of said patents; and (e) in and to each and every patent claim resulting from a reexamination certificate for any and all of said patents.

2. Said Inventors hereby jointly and severally covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest herein conveyed in the United States and other countries. Such cooperation by said Inventors shall include prompt production of pertinent facts and documents, giving of testimony, executing of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for complying with any duty of disclosure; (c) for prosecuting any of said applications; (d) for filing and prosecuting substitute, divisional, continuing or additional applications covering said invention; (e) for filing and prosecuting applications for reissue of any of said patents; (f) for interference or other priority proceedings involving said invention; and (g) for legal proceedings involving said invention and any applications therefor and any patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, reexamination proceedings, compulsory licensing proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Inventors in providing such cooperation shall be paid for by said Assignee.

3. The terms and covenants of this Assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Inventors, their respective heirs, legal representatives and assigns.

4. Said Inventors hereby jointly and severally warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

Date: 8/21/2017

(1)   
Lidu Huang

Date: \_\_\_\_\_

(2) \_\_\_\_\_  
Mac Apodaca

rights to apply in any or all countries of the world for patents, certificates of inventions or other governmental grants on said invention, including the right to apply for patents pursuant to the International Convention for the Protection of Industrial Property or pursuant to any other convention, treaty, agreement or understanding; (c) in and to any and all applications filed and any and all patents, certificates of inventions or other governmental grants granted on said invention in the United States or any other country, including each and every application filed and each and every patent granted on any application which is a division, substitution, or continuation of any of said applications; (d) in and to each and every reissue or extension of any of said patents; and (e) in and to each and every patent claim resulting from a reexamination certificate for any and all of said patents.

2. Said Inventors hereby jointly and severally covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest herein conveyed in the United States and other countries. Such cooperation by said Inventors shall include prompt production of pertinent facts and documents, giving of testimony, executing of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for complying with any duty of disclosure; (c) for prosecuting any of said applications; (d) for filing and prosecuting substitute, divisional, continuing or additional applications covering said invention; (e) for filing and prosecuting applications for reissue of any of said patents; (f) for interference or other priority proceedings involving said invention; and (g) for legal proceedings involving said invention and any applications therefor and any patents granted thereon, including without limitation opposition proceedings, cancellation proceedings, priority contests, public use proceedings, reexamination proceedings, compulsory licensing proceedings, infringement actions and court actions; provided, however, that the expense incurred by said Inventors in providing such cooperation shall be paid for by said Assignee.

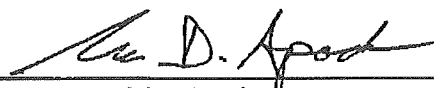
3. The terms and covenants of this Assignment shall inure to the benefit of said Assignee, its successors, assigns and other legal representatives, and shall be binding upon said Inventors, their respective heirs, legal representatives and assigns.

4. Said Inventors hereby jointly and severally warrant and represent that they have not entered and will not enter into any assignment, contract, or understanding in conflict herewith.

Date: \_\_\_\_\_

(1) \_\_\_\_\_  
Lidu Huang

Date: 21 August 2017

(2)  \_\_\_\_\_  
Mac Apodaca

Date: 8/24/2017

(3) *Toshiki Hirano*  
Toshiki Hirano

Date: \_\_\_\_\_

(4) \_\_\_\_\_  
Ailian Zhao

Date: \_\_\_\_\_

(5) \_\_\_\_\_  
Guy Wicker

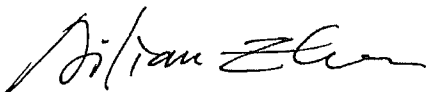
Date: \_\_\_\_\_

(6) \_\_\_\_\_  
Federico Nardi

Date: \_\_\_\_\_

(3) \_\_\_\_\_  
Toshiki Hirano

Date: Aug. 30, 2017

(4)   
Ailian Zhao

Date: \_\_\_\_\_

(5) \_\_\_\_\_  
Guy Wicker

Date: \_\_\_\_\_

(6) \_\_\_\_\_  
Federico Nardi


Date: \_\_\_\_\_

(3) \_\_\_\_\_  
Toshiki Hirano

Date: \_\_\_\_\_

(4) \_\_\_\_\_  
Ailian Zhao

Date: AUGUST 24, 2017

(5)   
Guy Wicker

Date: \_\_\_\_\_

(6) \_\_\_\_\_  
Federico Nardi



Date: \_\_\_\_\_

(3) \_\_\_\_\_  
Toshiki Hirano


Date: \_\_\_\_\_

(4) \_\_\_\_\_  
Ailian Zhao

Date: \_\_\_\_\_

(5) \_\_\_\_\_  
Guy Wicker

Date: 08/18/2017

(6)   
Federico Nardi