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U.S. DEPARTMENT OF COMMERCE
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To the Director of the U.S. Patent

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d documents or the new address(es) below.

1. Name of conveying party(ies)

Dong-ho Ahn
Hideki Horii
Soon-oh Park
Young-hyun Kim
Hee-ju Shin

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

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

Execution Date(s) January 12, 2010 and January 14, 2010

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Joint Research Agreement
☐ Government Interest Assignment
☐ Executive Order 9424, Confirmatory License
☐ Other _____

2. Name and address of receiving party(ies)

Name: Samsung Electronics Co., Ltd.

Internal Address: _____

Street Address: 416, Maetan-dong, Yeongtong-gu

City: Suwon-si, Gyeonggi-do

State: _____

Country: Republic of Korea Zip: _____

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

4. Application or patent number(s):

A. Patent Application No.(s)

☒ This document is being filed together with a new application.

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

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

Name: Anthony P. Onello, Jr.

Internal Address: Mills & Onello, LLP

Street Address: 11 Beacon Street, Suite 605

City: Boston

State: MA Zip: 02108

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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 501798

Authorized User Name Mills & Onello, LLP

9. Signature:

Signature

January 26, 2010
Date

Anthony P. Onello, JR.; Reg No.: 38,572

Name of Person Signing

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

4

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PATENT
REEL: 023947 FRAME: 0725

We, Dong-ho Ahn, of 5-203, Samil Villa, 517-9, Mangpo-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea; Hideki Horii, of 105-1204, Hanarcum Apt., Susoo-dong, Gangnam-gu, Seoul, Republic of Korea; Soon-oh Park, of 303-1302, Cheongmyeong Maoul Daewoo Apt., Yeongtong-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea; Young-hyun Kim, of 1006-314, Kkachi Maoul Apt., Susoo-dong, Gangnam-gu, Seoul, Republic of Korea; Hee-ju Shin, of Samsung Electronics Co., Giheung office, Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea; and Jin-ho Oh, of 105-302, Samjeong Green View, Sujin 2-dong, Sujeong-gu, Seongnam-si, Gyeonggi-do, Republic of Korea; having invented improvements in NON-VOLATILE MEMORY DEVICE INCLUDING PHASE-CHANGE MATERIAL identified as Attorney Docket No. SAM-1448, described in an application for Letters Patent of the United States, which application was filed on _____ and assigned Serial No. _____ (in the event that the execution date, filing date and/or Serial No. _____)

and assigned Serial No. _____ (in the event that the execution date, filing date and/or Serial No. are not entered above at the time we execute this document, and if such information is deemed necessary, we hereby authorize and request our attorneys at Mills & Onello, LLP, Eleven Beacon Street, Suite 605, Boston, Massachusetts 02108, USA, to insert above the execution date, filing date and/or Serial No. of said application, when known), for good and valuable consideration, receipt of which is hereby acknowledged from Samsung Electronics Co., Ltd., a Korean corporation having a place of business at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea (and hereinafter called the Assignee, which term shall include its successors and assigns), do hereby sell, assign and transfer unto the Assignee our entire right, title, and interest in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto, in and to and under said application (which term shall include hereinafter where the context so admits all divisional, continuing, reissue and other patent applications based thereon) and the inventions (which term shall include each and every such invention, or part thereof) therein described, and any and all patents and like rights of exclusion (including extensions thereof) of any country which may be granted on or for said inventions or on said application;

And for the same consideration We do also hereby sell, assign, and transfer unto the Assignee, all our rights under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, and all other treaties of like purpose in respect of said inventions and said application, and We do hereby authorize the Assignee to apply in our name or its own name or its designee for patents and like rights of exclusion on or for said inventions in all countries, claiming (if the Assignee so desires) the priority of the filing date of said application under the provisions of said Convention, Treaty or any such other Convention or Treaty;

And for the same consideration, We do hereby agree for ourselves and for our heirs, executors, and administrators, promptly upon request of the Assignee to execute and deliver without further compensation any power of attorney, assignment, original, divisional, continuing, reissue or other application or applications for patent or patents or like rights of exclusion of any country, or other lawful documents and any further assurances that may be deemed necessary or desirable by the Assignee, fully to secure to it said right, title, and interest as aforesaid in and to said inventions, applications, and said several patents and like rights of exclusion (including extensions thereof) or any of them, all, however, at the expense of the Assignee, its successors, or assigns;

And We do hereby authorize and request the Commissioner of Patents and Trademarks of the United States of America and the corresponding Official of each country foreign thereto to issue to the Assignee, any and all patents and like rights of exclusion which may be granted in any country upon said United States application on or for said inventions;

Attorney Reference No.: SAM-1448

And We do hereby covenant for ourselves and our legal representatives and agree with the Assignee, that We have granted no right or license to make, use, or sell said inventions to anyone except the Assignee, that prior to the execution of this deed our right, title, and interest in and to said inventions has not been otherwise encumbered by us, and that We have not executed and will not execute any instruments in conflict herewith.

First or Sole Inventor:

Signature:

Dong-ho Ahn
Dong-ho Ahn

Date:

2010. Jan. 12

Second Joint Inventor:

Signature:

Hideki Horii
Hideki Horii

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2010, Jan. 12

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Page 2 of 3

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Date: Jan. 14, 2010

ATTORNEY REFERENCE NO.: SAM-1448
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