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Trademarks:
copy thereof.

1. Name of conveying party(ies):

Young-bae KIM

Additional name(s) of conveying party(ies) attached?

YES NO

3. Nature of conveyance:

Assignment Merger Security Agreement

Change of Name Other:

Execution Date: February 10, 2010

2. Name and address of receiving party(ies)

Name: Samsung Electronics Co., Ltd.

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

City: Suwon-si

State: Gyeonggi-do

Country: Republic of Korea

Additional name(s) & address(es) attached? YES NO

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

If this document is being filed together with a new application, the execution date of the application is: February 10, 2010

A. Patent Application No(s).

B. Patent No.(s).

Additional numbers attached? YES NO

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

Name: HARNESS, DICKEY & PIERCE, P.L.C.

Street Address: P.O. BOX 8910

City: RESTON State: VA ZIP: 20195

Country: USA

6. Total No. of applications/patents involved: One (1)

7. Total fee (37 C.F.R. § 3.41): \$40.00

Enclosed

Authorized to be charged to deposit account, if no fee attached.

8. Deposit account number: 08-0750

(Attach triplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

John A. Castellano, Reg. No. 35,094

Name of Person Signing/Reg. No.

Signature

February 26, 2010

Date

Total number of pages including cover sheet, attachments, and document: 3

JAC/wv

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ASSIGNMENT

Atty. Docket No. 2557SI-001371/US

WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented:

DIODE STRUCTURES AND RESISTIVE RANDOM ACCESS MEMORY DEVICES HAVING THE SAME

for which Assignor is about to make or has made United States or International application for patent

- (a) executed on even date preparatory to filing (each inventor should sign this Assignment on the same day as he/she signs the Declaration and Power of Attorney);
- (b) executed on _____, _____, _____; or
- (c) filed on _____, and assigned Serial No. _____ or PCT International Application No. _____; and

WHEREAS, Samsung Electronics Co., Ltd., 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, hereinafter referred to as Assignee, is desirous of acquiring all right, title, and interest therein:

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy whereof is hereby acknowledged, Assignor agrees to, and hereby does, sell, assign and transfer unto Assignee and its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the invention as described in the aforesaid application and all United States Letters Patent which may be granted therefore, and all divisions, continuations, reissues, reexaminations and extensions thereof, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent are granted and any extensions thereof as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications or patents resulting therefrom;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renewal or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or Inventor's Certificate to Assignee.

The undersigned hereby grant(s) the law firm of Harness, Dickey & Pierce, P.L.C. the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

ASSIGNMENT

Atty. Docket No. 2557SI-001371/US



Young-bae KIM

Feb 10, 2010

Dated