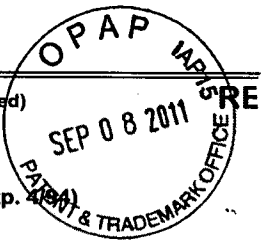


FORM PTO-1595 (modified)
(Rev. 6-93)
9/8/11
OMB No. 0651-0011 (exp. 10/31/11)



09/13/2011



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1. Name of conveying party(ies):
JUN-KYU YANG, HONG-SUK KIM, JU-YUL LEE, KI-HYUN HWANG, JAE-YOUNG AHN
Additional name(s) of conveying party(ies) attached? No

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, REPUBLIC OF KOREA**
Additional name(s) & address(es) attached? No

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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:
A. Patent Application No.(s)
13/227,799
B. Patent No.(s)
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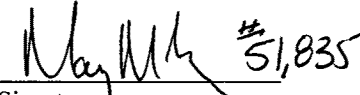
5. Name and address of party to whom correspondence concerning document should be mailed:
Name: Eugene M. Lee
Internal Address: LEE & MORSE, P.C.
Street Address: 3141 Fairview Park Drive, Suite 500
City: Falls Church, State: VA ZIP: 22042

6. Total number of applications and patents involved: One

7. Total fee (37 C.F.R. 3.41). \$40.00
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Attorney Docket No. 253/178

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ASSIGNMENT

Name and Address of Assignee	For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor has sold and assigned, and by these presents hereby sells and assigns, unto SAMSUNG ELECTRONICS CO., LTD., 416, Maetan-dong, Yeongtong-gu Suwon-si, Gyeonggi-do, Republic of Korea
	(hereinafter ASSIGNEE) all right, title and interest for the United States, its territories and possessions in and to his invention relating to

Title of Invention	SEMICONDUCTOR DEVICES AND METHODS OF MANUFACTURING THE SAME as set forth in this United States Patent Application
--------------------	---

Check One	<input type="checkbox"/> executed concurrently herewith <input type="checkbox"/> executed on _____ <input type="checkbox"/> Serial No. _____ Filed _____
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in and to said United States Patent Application including any and all divisions or continuations thereof and in and to any and all Letters Patent of the United States which may issue on any such application or for said invention, including any and all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its successors, legal representatives and assigns to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made;

Each of the undersigned hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such Letters Patent to said ASSIGNEE, its successors or assigns in accordance herewith;

Each of the undersigned warrants and covenants that he has the full and unencumbered right to sell and assign the interests herein sold and assigned and that he has not executed and will not execute any document or instrument in conflict herewith;

Each of the undersigned further covenants and agrees he will communicate to said ASSIGNEE, its successors, legal representatives or assigns all information known to him relating to said invention or patent application and that he will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent which may be granted therefore or thereon, including reissues or extensions, in said ASSIGNEE, its successors, or assigns or to assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing Letters Patent of the United States for said invention;

Each of the undersigned hereby grants the firm of **LEE & MORSE, P.C.** the power to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

NAMES AND SIGNATURES OF INVENTORS		
Name: <i>Jun-Kyu YANG</i>	Signature: <i>Jun Kyu Yang</i>	Date: <i>07/25/2011</i>
Name: <i>Hong-Suk KIM</i>	Signature: <i>Hong-Suk Kim</i>	Date: <i>07/25/2011</i>
Name: <i>Ju-Yul LEE</i>	Signature: <i>Ju Yul Lee</i>	Date: <i>07/25/2011</i>
Name: <i>Ki-Hyun HWANG</i>	Signature: <i>Ki Hyun Hwang</i>	Date: <i>07/25/2011</i>
Name: <i>Jae-Young AHN</i>	Signature: <i>Jae Young Ahn</i>	Date: <i>07/25/2011</i>
NAMES AND SIGNATURES OF WITNESSES		
Name:	Signature:	Date:
Name:	Signature:	Date:

Note: *Prima facie* evidence of execution may optionally be obtained by execution of this document before a U.S. Consul or before a local officer authorized to administer oaths whose authority is proved by a certificate from a U.S. Consul.