Form PTO-1595 (Rev. 07/05) 08 - 31	— 5 - 5 U.S. DEPARTMENT OF COMMERCE			
OMB No. 0651-0027 (exp. 6/30/2008)	United States Patent and Trademark Office			
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To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.				
	2. Name and address of receiving party(ies)			
Name of conveying party(ies) Sun-Ghil Lee Young-Eun Lee	Name: Samsung Electronics Co., Ltd.			
Young-Pil Kim				
Yu-Gyun Shin Jong-Wook Lee	Internal Address:			
Additional name(s) of conveying party(ies) attached? Yes N	0			
3. Nature of conveyance/Execution Date(s):	Street Address: 416, Maetan-dong,			
Execution Date(s) 5/16, 5/22, 7/27, 5/17 and 8/17/2006	Yeongtong-gu			
Assignment Merger				
Security Agreement Change of Name	City: Suwon-si, Gyeonggi-do			
Joint Research Agreement	State:			
Government Interest Assignment	Country: Republic of Korea Zip:			
Executive Order 9424, Confirmatory License	Zip.			
Other	Additional name(s) & address(es) attached? Yes Vo			
4. Application or patent number(s): This document is being filed together with a new application.				
A. Patent Application No.(s)	B. Patent No.(s)			
11/398,118, filed April 5, 2006				
	tached? Tyes (ZNo. S.			
Additional numbers a				
concerning document should be mailed:	6. Total number of applications and patents involved: 1			
Name: Anthony P. Onello, Jr.	7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00			
Internal Address:	Authorized to be charged by credit card			
	Authorized to be charged to deposit account			
Street Address: Eleven Beacon Street	✓ Enclosed			
Suite 605	None required (government interest not affecting title)			
City: Boston	8. Payment Information			
State: Massachusetts Zip:02108	a. Credit Card Last 4 Numbers			
	Expiration Date			
State: Massachusetts Zip:02108 Phone Number: (617) 994-4900 Fax Number: (617) 742-7774	b. Deposit Account Number			
Phone Number:(617) 994-4900	Expiration Date			
Phone Number: <u>(617)</u> 994-4900 Fax Number: <u>(617)</u> 742-7774	b. Deposit Account Number			
Phone Number: (617) 994-4900 Fax Number: (617) 742-7774 Email Address: mail@millsonello.com	b. Deposit Account Number			

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:

Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

Reference No.: SAM-0921

ASSIGNMENT

We, Sun-Ghil Lee, of 411-301 Kkachimaeul Lotte Apt., Gumi-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea; Young-Pil Kim, of 847-1303 Byeokjeokgol 8-danji Apt., Yeongtongdong, Yeongtong-gu, Suwon-si, Gyconggi-do, Republic of Korea; Yu-Gyun Shin, of 134-906 Parktown Apt., 55 Sunac-dong, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea; Jong-Wook Lcc, of 105-204 Dongbo 1-cha Apt., Pungdeokcheon 1-dong, Yongin-si, Gyeonggi-do, Republic of Korea; and Young-Eun Lee, of 204-1003 Muwonmaeul Sambo Apt., Haengsin 2-dong, Deogyang-gu, Goyang-si, Gyeonggi-do, Republic of Korea, having invented improvements in SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME described in an application for Letters Patent of the United States, Serial No. 11/398,118, filed April 5, 2006, 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;

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.

Page 1 of 2

Reference No.: SAM-0921

First or Sole Inventor	:	
Signature:	Sun-Ghil Cee	Date: May 16th, 2006
Second Joint Inventor		
Signature:	Young-Filkim	Date: May 27th, 200 C
Third Joint Inventor:		
Signature:	Yu-Gyun Shin	Date:
Fourth Joint Inventor	;	
Signature:	Jong Wook Lee Jong Wook Lee	Date: May 19th, 2006
Fifth Joint Inventor:		
Signature:	Young-Eun Lee	Date:

Page 2 of 2

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> PATENT REEL: 018243 FRAME: 0214

Reference No.: SAM-0921

First or Sole Invento	or:	•
Signature:	Sun-Ghil Lee	Date:
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Signature:	Young-Pil Kim	Date:
Third Joint Inventor:	:	
Signature:	Yu-Gyun Shin	Date: July21, 2006
Fourth Joint Inventor	r:	
Signature:	Jong-Wook Lec	Date:
Fifth Joint Inventor:		
Signature:	Young-Eun Lee	Date: 2006 8.17

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REFERENCE NO.: SAM-0921 J\SAM-0921\updatedassignment-muh-inv.wpd

RECORDED: 08/30/2006

PATENT REEL: 018243 FRAME: 0215