

		RECORDATION FORM COVER SHEET PATENTS ONLY		U.S. Department of Commerce Patent and Trademark Office Attorney Docket No. SAM-50136CIP	
To the Director of the U.S. Patent and Trademark Office: Please record the attached original documents or copy thereof.				Mail Stop Assignment Recordation Services	
1. Name of conveying party(ies): 1. Bae, Byoung-jae 2. Cho, Sung-lae 3. Lee, Jin-il 4. Park, Hyeyoung 5. Kim, Do-hyung			2. Name and address of receiving party: Name: Samsung Electronics Co., Ltd.		
Additional name(s) of conveying parties attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Internal Address:		
3. Nature of conveyance:			Street Address: 129, Samsung-ro, Yeongtong-gu		
<input checked="" type="checkbox"/>	Assignment	<input type="checkbox"/>	Merger	City: Suwon-si	
<input type="checkbox"/>	Security Agreement	<input type="checkbox"/>	Change of Name	State: Gyeonggi-do	Country: South Korea
<input type="checkbox"/>	Joint Research Agreement	<input type="checkbox"/>	Government Interest Assignment	Additional name(s) & Address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<input type="checkbox"/>	Executive Order 9494, Confirmatory License	<input type="checkbox"/>	Other:		
Execution Date(s):		1. 02-14-2013			
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:					
A. Patent Application Number: 13/708,914			B. Patent Number(s):		
Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
5. Name and address of party to whom correspondence concerning document should be mailed:			6. Total number of applications and patents involved: 1		
Name:	Patrick D. Muir	(tel): 703-757-7880 (fax): 703-757-7447 (e-mail): pto@muirpatentconsulting.com			
Internal Address:	Muir Patent Consulting, PLLC				
Street Address:	9913 Georgetown Pike, Suite 200, Box 1213				
City:	Great Falls				
State:	VA	Zip:	22066		
7. Total fee (37 CFR 1.21(h) and 3.41): \$ 40.00			8. Deposit Account No.: 50-4574		
<input type="checkbox"/> Enclosed (Please charge deficiency or credit overpayment to deposit account 50-4574) <input checked="" type="checkbox"/> Authorized to be charged to deposit account <input type="checkbox"/> None required (government interest not affecting title)					
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.					
Signed:		/Bradley Edelman/		2/14/13	
		Bradley Edelman, Reg. No. 57,648		Date	
Total number of pages including cover sheet, attachments and documents: 5					

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SAMSUNG ELECTRONICS CO., LTD.

ASSIGNMENT FORM FOR UTILITY PATENT APPLICATION

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

Title: **METHOD OF FORMING PHASE CHANGE MATERIAL LAYER USING GE(II) SOURCE,
AND METHOD OF FABRICATING PHASE CHANGE MEMORY DEVICE**

for which Assignor has made United States application for patent on December 7, 2012,
having U.S. Application Number 13/708,914.

In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration
paid to each of the undersigned, the undersigned hereby sell(s) and assign(s) to

Samsung Electronics Co., Ltd.

having an address at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-742,
Republic of Korea (hereinafter designated as the Assignee), the entire (100%) right, title and
interest for the United States as defined in 35 USC §100, in the invention described in the
application identified in Section I of this document.

Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor
has not already done so, agrees to assign, 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
inventions as described in the aforesaid application, to the aforesaid application itself, and
all divisions, continuations, continuations-in-part, or other applications claiming priority
directly or indirectly from the aforesaid application, and any United States or foreign Letters
Patent, utility model, or other similar rights which may be granted thereon, including
reissues, reexaminations and extensions thereof, and all copyright rights throughout the
world in the aforesaid application and the subject matter disclosed therein, these rights,
title and interest to be held and enjoyed by Assignee to the full end of the term for which
the Letters Patent, utility model, or other similar rights, 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,
patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

SEC Ref No. IE-200705-020-1-US2 Attorney Ref No. SAM-50136CTP

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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, utility model, or other similar rights, and for copyright, 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 other similar right to Assignee.


The undersigned hereby grant(s) the law firm of Muir Patent Consulting, PLLC 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.

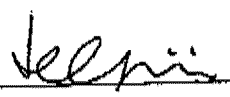
Section III. Inventor(s)/Assignor(s) Signature(s)


LEGAL NAME OF FIRST INVENTOR/ASSIGNOR	Family Name	First Given Name	Second Given Name
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<div>SIGNATURE <u>Byoung Jae Bae</u> DATE <u>Feb. 14, 2013</u></div>			

SEC Ref No. IE-200705-020-1-US2 Attorney Ref No. SAM-50136CIPCOMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
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REEL: 029827 FRAME: 0397

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LEGAL NAME OF THIRD INVENTOR/ASSIGNOR	Family Name	First Given Name	Second Given Name
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SIGNATURE  DATE Feb-14-2013			

LEGAL NAME OF FOURTH INVENTOR/ASSIGNOR	Family Name	First Given Name	Second Given Name
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