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To the Director of the United States	10339246	39	rd the attac	hed original		ts or copy	thereof
Name of conveying party(ies):  KOH, Cha-won PARK, Joon-so CHO, Han-ku LEE, Ji-young NAM, Jeong-lim YEO, Gi-sung		2. Name and a	address of		party(ies) Ltd.	):	
Additional names(s) of conveying party(ies)	☐ Yes ☒ No				•		<del>.</del>
3. Nature of conveyance:	-	<del></del>		· · · · · ·		<del></del>	
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☐ Security Agreement ☐ Cha	ange of Name	City: Suwon-s	si	State/F	Prov.: G	yeonggi-c	lo
☐ Other		Country: Re	public of k	Corea	ZIP: _		
Execution Date: March 9, 15, 10, 15, 15, 12, 2	2007	Additional name(s	s) & address	(es)	<b>0</b> Y	∕es ⊠	No
I. Application number(s) or patent numbers(s) of this document is being filed together with a		e execution da	ate of the	application	Ma is: <u>15</u> ,	arch 9, 15 , 12, 2007	
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P.O. Box 1450, Alexandria, VA 22313-1450

Docket No.: SEC.1968

VOLENTINE & WHITT, P.L.L.C. (01/2007)

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•	ASSIGNMENT
	In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned
Insert Name(s) of Inventor(s)	l. Cha-won KOH 7.
in sentor(a)	2. Han-ku CHO 8.
	3. Jeong-lim NAM 9.
	4. Gi-sung YEO ]0.
	S. Joon-soo PARK 11.
•	6. Ji-young LEE 12.
Insert Name(s) of	the undersigned hereby sell(s) and assign(s) to
Assignec(s) &	SAMSUNG ELECTRONICS CO., LTD.
Address(es)	416, Maetan-dong, Yeongtong-gu, of Suwon-si, Gyeonggi-do, Republic of Korea
Motil cap(ca)	
	(hereinafter designated as the Assignee) the entire right, title and interest for the United States as defined in 35 USC 100, in the invention known as
Title of Invention	METHOD OF FORMING A HARD MASK AND METHOD OF FORMING
	A FINE PATTERN OF SEMICONDUCTOR DEVICE USING THE SAME
Date of Signing of	for which an application for patent in the United States of America has been executed by
Application	the undersigned on March 9, 15, 10, 15, 15, 12, 2007
·	The undersigned agroe(s) to execute all papers necessary in connection with this application and any continuing, divisional or reissue applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.
	The undersigned agree(s) to execute all papers noccasary in connection with any interference which may be declared concerning this application or continuing, division or reissue thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.
	The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.
	The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

Page I of 2

THE RESERVE OF THE RESERVE OF THE PROPERTY OF

PATENT REEL: 019157 FRAME: 0480 YOLENTINE & WHITT, P.L.L.C. (01/2007)

ATTORNEY DOCKET NO. SEC.1970

The undersigned hereby grant(s) the practitioners associated with the <u>CUSTOMER NUMBER 20987</u> 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 United States Patent Office for recordation of this document.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed, and will not execute, any agreement in conflict herewith.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned

Date May 10. 2007 Signature of Inventor

Date May 10. 2007 Signature of Inventor

Date May 10. 2007 Signature of Inventor

Date May 15. 2007 Signature of Inventor

Date May 12. 2007 Signature of Inventor

Date May 15. 2007 Signature of Inventor

Date May 16. 2007 Signature of Invent

Patent and Trademark Office is to record an Assignment even it has not been witnessed.)

Applicant Reference No. SS-29081-US

Witness

Page 2 of 2

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PATENT

REEL: 019157 FRAME: 0481

**RECORDED: 03/23/2007**