Patent: and Trademark Office Presser record the attached original documents or copy the roof.  7	FORM PTO-1595 (Modified) RE( 05 -	05 - 2006 U.S. DEPARTMENT OF COMMERCE
Tab settings + • • • 103232254  _ To the Director of the United States Patent and Trademark Office: Please record the attached original documents or copy thereof.    Name of Conveying party(ies): Kui-tyun KIM   Name of Conveying party(ies): Name: Sansung Electronics Co., Ltd.   Name: Sansung Electronics Co., Ltd.	(Rev. 03-01)	Patent and Trademark Office
. Name of conveying party(ies): Kui-tyuu KIM Jun-bong MIN In-bo LFR Art-ig KIM Additional names(s) of conveying party(ies):  2. Name and address of receiving party(ies): Name: Sansung Electronics Co., Ltd. Address: 416, Maetan-dong, Yeongtong-gu  3. Nature of conveying party(ies): Additional names(s) of conveying party is defeated.  Additional names(s) of	POBA/REVO3	
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Name: Samsung Electronics Co., Ltd.   Co.   Co.   Ltd.   Co.   Co		
Jun-bong MIN In-bong MIN Additional names(e) of conveying party(ies)  3. Nature of conveyance:  Sassignment   Merger	Name of conveying party(ies):	Name and address of receiving party(ies):
In-ho LEE Ah-gi KIM  Additional names(s) of conveying party(ies)  3. Nature of conveyance:  Security Agreement   Merger   Security Agreement   Change of Name   Other   Country: Republic of Korea   ZIP: Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06  4. Application number(s) or patent numbers(s): If this document is being filed together with a new application, the execution date of the application is:  4/13/06; 4/13/06; 4/13/06;  4/13/06; 4/13/06  B. Patent No.(s)  5. Name and address of party to whom correspondence concerning document should be mailed: Name: Sandra L. Shaner  Registration No. 47/934  Address: CANTOR COLBURN LLP  55 Griffia Road South  Country: USA   ZIP: 06002  DO NOT USE THIS SPACE  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.  Sandra L. Shaner  Name of Person Signing  Total number of pages including cover sheet, attachments, and document.  April 28, 2006  Date  Additional names(s) 416, Maetan-dong, Yeongtong-gu  City; Suwon-si  State/Prov.: Gyeonggi-do  Country: Republic of Korea   ZIP: Ocountry: Republic of Korea   ZIP: Ocountry: USA   ZIP:	·	0
Address: 416, Maetan-dong, Yeongtong-gu  Address: 416, Maetan-dong, Yeongtong-gu  3. Nature of conveyance:  Assignment   Merger		Name: Samsung Electronics Co., Ltd.
Additional names(s) of conveying party(ies)   Yes  No   Name   Na		Address: 416, Maetan-dong, Yeongtong-gu
3. Nature of conveyance:  Assignment	_	64 J
Additional numbers   Canage of Name   City: Suwon-st   State/Prov.: Gyeonggl-do	Additional names(s) of conveying party(ies)	326
City: Suwon-si State/Prov.: Greenggi-do  Country: Republic of Korea ZIP:  Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06  Additional name(e) & address(es) Per Suno  Additional name(e) & addressers(es) Per Suno  Additional	3. Nature of conveyance:	
City: Suwon-si State/Prov.: Greenggi-do  Country: Republic of Korea ZIP:  Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06  Additional name(e) & address(es) Per Suno  Additional name(e) & addressers(es) Per Suno  Additional	X Assignment	4.1
Country: Republic of Korea ZIP:  Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06  Additional name(s) & address(es)   Yes 2 No  4. Application number(s) or patent numbers(s):  If this document is being filed together with a new application, the execution date of the application is: 4/13/06; 4/13/06  Patent Application No. Filing date   B. Patent No.(s)  6. Patent No.(s)  5. Name and address of party to whom correspondence concerning document should be mailed:  Name: Sandra L. Shaner   7. Total fee (37 CFR 3.41):		
Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06  4. Application number(s) or patent numbers(s):  If this document is being filed together with a new application, the execution date of the application is:  Patent Application No. Filing date  B. Patent No.(s)  6. Total number of applications and patents involved:  Name: Sandra L. Shaner  Registration No. 47.934  Address: CANTOR COLBURN LLP  55 Griffin Road South  City: Bloomfield  Country: USA  ZIP: 06002  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.  Sandra L. Shaner  OO NOT USE THIS SPACE  Name of Person Signing  Signature  April 28, 2006  Name of Person Signing  Total number of pages including cover sheet, attachments, and document:  4/12/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13	☐ Security Agreement ☐ Change of Name	City: Suwon-si State/Prov.: Gyeonggi-do
Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06  4. Application number(s) or patent numbers(s):  If this document is being filed together with a new application, the execution date of the application is:  4/12/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/	☐ Other	Country: Republic of Korea ZIP:
4. Application number(s) or patent numbers(s):  If this document is being filed together with a new application, the execution date of the application is:  Patent Application No. Filing date  B. Patent No.(s)  65/04/2006 DBTRNE 0000216 061130 11414022  01 FC:8021 (40.00 DA)  Additional numbers Present and address of party to whom correspondence concerning document should be mailed:  Name: Sandra L. Shaner  Registration No. 47.934  Address: CANTOR COLBURN LLP  55 Griffia Road South  City: Bloomfield State/Prov.: CT  Country: USA ZIP: 06002 (Attach duplicate copy of this page if paying by deposit account)  ON NOT USE THIS SPACE  Patent No.(s)  4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4/13/06; 4		
If this document is being filed together with a new application, the execution date of the application is:  Att3/06; 4/13/06  Patent Application No. Filing date  B. Patent No.(s)  So/04/2006 DEYRNE 00000216 061130 11414022  OF FC:8021 (40.00 DR)  Additional numbers   Yes   No    Solution No. Additional number of applications and patents involved:   1    Total fee (37 CFR 3.41):	Execution Date: 4/12/06; 4/13/06; 4/13/06; 4/13/06	Additional name(s) & address(es) ☐ Yes ☒ No
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Additional numbers Yes No  5. Name and address of party to whom correspondence concerning document should be mailed:  Name: Sandra L. Shaner  Registration No. 47,934  Address: CANTOR COLBURN LLP  55 Griffin Road South  City: Bloomfield  Country: USA  ZIP: 06002  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.  Sandra L. Shaner  ONOT USE THIS SPACE  April 28, 2006  Name of Person Signing  Total number of pages including cover sheet, attachments, and document:  Total number of pages including cover sheet, attachments, and document:	in the decament to being men regener man arran expression,	
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8. Deposit account number:  City: Bloomfield State/Prov.: CT 06-1130  Country: USA ZIP: 06002 (Attach duplicate copy of this page if paying by deposit account)  DO NOT USE THIS SPACE  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.  Sandra L. Shaner April 28, 2006  Name of Person Signing Signature 3  Total number of pages including cover sheet, attachments, and document:	Patent Application No. Filing date  05/04/2006 DBYRNE 00000216 061130 11414022  01 FC:8021	☐ Yes ☒ No  6. Total number of applications and patents involved:  7. Total fee (37 CFR 3.41):\$ 40.00  ☐ Enclosed - Any excess or insufficiency should be
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## **ASSIGNMENT**

WHEREAS We, [Kui-hyun Kim] of [101, 176-15 Yongjeon-dong, Dong-gu, Daejeon-si, Republic of Korea], [Jun-hong Min] of [552-1004 Ggotme Maeul Hyundai Hometown, Jukjeon-dong, Yongin-si, Gyeonggi-do, Republic of Korea], [In-ho Lee] of [505-1201 Geumhwa Maeul Jugong Greenville, Sanggal-dong, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea], and [Ah-gi Kim] of [c/o Samsung Advanced Institute of Technology, San 14-1 Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea] (hereinafter referred to as "ASSIGNORS"); have invented certain new and useful improvements in:

[METHOD FOR HIGHLY SENSITIVE NUCLEIC ACID DETECTIO N USING NANOPORE AND NON-SPECIFIC NUCLEIC ACID-BIND ING AGENT]

which claims priority to [Korean] Application No. 10-2005-0055904 filed on 27 June 2005, and for which We are about to file an application for Letters Patent of the United States;

AND WHEREAS, [Samsung Electronics Co., Ltd.] (hereinafter referred to as "ASSIGNEE"), a corporation organized and existing under the laws of the Country of [Republic of Korea], having a place of business at [416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea], is desirous of acquiring an interest in the United States and all foreign countries, in and to the said invention and Letters Patent to be obtained therefor;

NOW THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, the receipt of which is hereby acknowledged, We, the said ASSIGNORS have assigned and transferred, and hereby assign and transfer unto the said ASSIGNEE, the entire right, title and interest in and to said invention in the United States and in all foreign countries, including priority rights, as fully set forth and described in said application; and We do hereby authorize and request the Commissioner of Patents to issue said Letters Patent on said application, and any and all Letters Patent that may be issued upon any and all revivals, refilings, continuations, continuations-in-part, divisions and reissues thereof, to the said ASSIGNEE, an assignee of the entire right, title and interest in and to the same, for the sole use and behoof of ASSIGNEE, its successors and assigns; and We do hereby agree that the said ASSIGNEE, may apply for foreign Letters Patent on said invention and that We will

I

PATENT REEL: 017840 FRAME: 0790 execute all papers necessary in connection with the United States and foreign applications when called upon to do so by the said ASSIGNEE, its successors or assigns, and that We will, at the cost and expense of the said ASSIGNEE fully assist and cooperate in all matters in connection with the United States and foreign applications and patents issuing thereon.

The undersigned declare that all statements made herein of their own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: Apr. 12. >---

Date: 13 Apr 2006

Date: Apr. 13. 2006

Date: Am. 13. 2006

L.S.

L.S.

L.S.

[Ah-gi Kim] L.S

PATENT REEL: 017840 FRAME: 0791

RECORDED: 04/28/2006