| orm PTO-1595 (Rev. 01-09) MB No. 0651-0027 (exp. 02/28/2009) | U.S. DEPARTMENT OF COMMERCE United States Patent and Trademark Office | |
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| 1. Name of conveying party(ies): | Name and address of receiving party(ies) | |
| Song-Yi Yang (12/17/2010) Seung-Pil Chung (12/17/2010) | Name: Samsung Electronics Co., Ltd. | |
| Dong-Hyun Kim (12/17/2010) Hong Cho (12/17/2010) O-Ik Kwon (12/17/2010) | Internal Address: | |
| Additional name(s) of conveying party(les) attached? X Yes No | Street Address: | |
| 3. Nature of conveyance/Execution Date(s): | | |
| Execution Date(s): in parentheses after inventor name | 416 Maetan-dong, Yeongtong-gu | |
| X Assignment Merger Change of Name | | |
| Security Agreement Joint Research Agreement | City: Suwon-si, Gyeonggi-do | |
| Government Interest Assignment | State: | |
| Executive Order 9424, Confirmatory License | Country: Republic of Korea Zip: | |
| Other | Additional name(s) & address(es) Yes X No attached? | |
| | This document is being filed together with a new application. | |
| 4. Approacon or brassis is a section of the section | B. Patent No.(s) | |
| A. Patent Application No.(s) This application | | |
| , . | | |
| 12/983,478 Additional numbers attached? | Yes X No | |
| Name and address to whom correspondence concerning document should be mailed: | 6. Total number of applications and patents involved: | |
| Name: John A. Castellano HARNESS, DICKEY & PIERCE, P.L.C. | 7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00 | |
| Internal Address: Atty. Dkt.: 2557-001578/US | | |
| Street Address: P.O. Box 8910 | X Authorized to be charged to deposit account | |
| , | Enclosed | |
| | None required (government interest not affecting title) | |
| City: Reston | 8. Payment Information | |
| State: VA Zip: 20195 | | |
| Phone Number: (703) 668-8000 | 00.0750 | |
| Fax Number: (703) 668-8300 | Deposit Account Number 08-0750 Authorized User Name John A. Castellano | |
| Email Address: dcmailroom@hdo.com | Authorized poor Maine OOM177. Odecidano | |
| 9. Signature: | January 3, 2011 Date | |
| Signature 25 00 | Total number of pages including cover | |
| John A. Castellano\- 35,094\/ Name of Person Signifig | sheet, attachments, and documents: | |
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JAC/vw

PATENT REEL: 025609 FRAME: 0972

Date: 1/3/2011 5:09:42 PM

Attorney Docket No. 2557-001578/US

ASSIGNMENT

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

SEMICONDUCTOR DEVICE AND METHOD OF DOUBLE PHOTOLITHOGRAPHY PROCESS FOR FORMING PATTERNS OF THE SEMICONDUCTOR DEVICE

for which Assignor is about to make or has made United States or International application for patent

| (a) | K) | executed on even date preparatory to filing (each inventor should sign this Assignment on the same day as he/she signs the Declaration and Power of Attorney); |
|-----|----|--|
| (b) | | executed on; or |
| (c) | | filed on, and assigned Serial No or PCT International Application No. : and |

WHEREAS, Samsung Electronics Co., Ltd., 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, hereinafter referred to as Assignee, is desirous of acquiring all right, title, and interest therein:

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy whereof is hereby acknowledged, 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:

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 Harness, Dickey & Pierce, P.L.C. 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.

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Dated

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O-ik KWON

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Hong CHO

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