503159087 01/30/2015

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3205701

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------|----------------|
| HEA-JUNG KIM | 01/15/2015 |
| SUNG-HWAN KIM | 01/15/2015 |
| YOUN-HEE NAM | 01/15/2015 |
| YUN-JUN KIM | 01/15/2015 |
| JOON-YOUNG MOON | 01/15/2015 |
| HYUN-JI SONG | 01/15/2015 |
| YONG-WOON YOON | 01/15/2015 |
| CHUNG-HEON LEE | 01/15/2015 |

RECEIVING PARTY DATA

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| State/Country: | KOREA, REPUBLIC OF |
| Postal Code: | 446-902 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14609824 |

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| ATTORNEY DOCKET NUMBER: | 299/1073 |
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| NAME OF SUBMITTER: | JOHN M. MAKSYMONKO |
| SIGNATURE: | /John M. Maksymonko/ |

| DATE SIGNED: | 01/30/2015 |
|------------------------------|--|
| | This document serves as an Oath/Declaration (37 CFR 1.63 |
| Total Attachments: 6 | |
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COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM¹

The undersigned acknowledges that this document is being used both as an assignment of the invention and as the declaration (37 CFR 1.63) for a Utility or Design Application.

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

| Title: | CON | NOMER FOR HARDMASK APOSITION INCLUDING T IMING PATTERNS USING T | HE MONOMER, AND M | IETHOD OF |
|---------|---------|---|------------------------------|--------------------------|
| for whi | | signor is about to make or has n | nade United States or Interr | national application for |
| WHER | REAS, | as a below named inventor(s), l | ((we) hereby declare that: | |
| Section | a L. De | eclaration | | |
| | | on is directed to the attached Unarked: | S. non-provisional patent a | pplication, unless the |
| | | U.S. non-provisional patent a | pplication number | , filed on |
| | | PCT international patent appl | ication number | , filed on |
| The ab | ove-ide | entified application was made o | n authorized to be made by | me (us). |
| | | that I am (we are) the original be above-identified application. | | entors) of a claimed |
| | | acknowledge that any willful f C. 1001 by fine or imprisonme | | |
| | - | that I have reviewed and under scluding the claims. | stand the contents of the ab | ove identified |
| This i | orm req | uires the use of an Application Data S | Sheet. | |
| SDIR | ef No. | 2013-P0889 | Attorney Ref No. | 299/1073 |
| | | ED DECLARATION (37 CFR 1.4 | | |

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SAMSUNG SDI CO., LTD.

I acknowledge that I am aware of the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

<u>Power of Attorney:</u> I/we hereby appoint as my attorneys, with full powers of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office practitioners associated with Customer Number 27849.

Section II. Assignment

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 SDI Co., Ltd.

having an address 150-20, Gongse-ro, Giheung-gu, Yongin-si, Gyeonggi-do 446-902, Republic of Korea (hereinafter designated as the Assignce), 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;

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

| SDI Ref No. | 2013-P0889 | Attorney Ref No. | 299/1073 | |
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SAMSUNG SDI CO., LTD.

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 LEE & MORSE, PC the power to insert on this Declaration and 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 | Family Name | First Given Name | Second Given Name |
|------------------------|-------------|------------------|---|
| INVENTOR/ASSIGNOR | KIM | Hea-Jung | |
| | | | |
| SIGNATURE | 76 AIR | DATE | 01/15/2015 |
| | | | *************************************** |

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|-------------|--|-------------------------------|--------------------|--|
| SDI Ref No. | 2013-P0889 | Attorney Ref No | 299/1073 | |
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| LEGAL NAME OF SECOND | Family Name | First Given Name | Second Given Name |
|-------------------------|-------------|------------------|-------------------|
| INVENTOR/ASSIGNOR | KIM | Sung-Hwan | |
| 1 | | -t | ····· |
| SIGNATURE | 김성환 | DATE | 01/15/2015 |
| | | co. | |

| Youn-Ho | ee | *************************************** |
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| | ······ | |
| 4 21 | DATE 01/1 | .5/2015 |
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| Family Name | First Given Name | Second Given Name |
|-------------|--|---|
| KIM | Yun-Jun | |
| | ······································ | |
| 71 -91-32 | DATE | 01/15/2015 |
| , ~ w | • | *************************************** |
| | KIM VI GE | KIM Yun-Jun DATE |

| SDI Ref No. | 2013-P0889 | Attorney Ref No. | 299/1073 | |
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| LEGAL NAME OF FIFTH | Family Name | First Given Name | Second Given Name |
|------------------------|-------------|------------------|----------------------|
| INVENTOR/ASSIGNOR | MOON | Joon-Young | |
| | | | |
| | | | |
| SIGNATURE | 분준명 | DATE | 01/15/2015 |
| | | _v | |

| LEGAL NAME OF SIXTH | Family Name | First Given Name | Second Given Name |
|------------------------|-------------|------------------|-------------------|
| INVENTOR/ASSIGNOR | SONG | Hyun-Ji | |
| | | | { |
| | 소티지 | | 01/15/2015 |
| | o=1 | 37 A 77 C | 113 73 467 ON ES |

| YOON | Yong-Woon | |
|----------|-----------|------------|
| | | |
| <u> </u> | DATE | 01/15/2015 |
| | | J. S. DATE |

| SDI Ref No. | 2013-P0889 | Attorney Ref No. | 299/1073 | |
|-------------|------------|------------------|----------|--|

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RECORDED: 01/30/2015

| LEGAL NAME OF EIGHTH | Family Name | First Given Name | Second Given Name |
|-------------------------|-------------|------------------|----------------------|
| INVENTOR/ASSIGNOR | LEE | Chung-Heon | |
| | | | |
| | | DATE | ne lin invar |
| SIGNATURE | <u> 9治元</u> | DAID. | 01/15/2015 |
| | | | |

| SDI Ref No. | 2013-20889 | Attorney Ref No. | 299/1073 | |
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