PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3033712

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YONGTAK LEE	09/17/2014
GUNWU JU	09/17/2014

RECEIVING PARTY DATA

Name:	GWANGJU INSTITUTE OF SCIENCE AND TECHNOLOGY
Street Address:	123, CHEOMDANGWAGI-RO
City:	BUK-GU, GWANGJU
State/Country:	KOREA, REPUBLIC OF
Postal Code:	500-712

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	14492733	

CORRESPONDENCE DATA

Fax Number: (703)668-8200

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 703-668-8000

Email: dcmailroom@hdp.com

Correspondent Name: HARNESS, DICKEY & PIERCE, P.L.C.

Address Line 1: P.O. BOX 8910

Address Line 4: RESTON, VIRGINIA 20195

ATTORNEY DOCKET NUMBER: 2557SI-002201-US	
NAME OF SUBMITTER:	JOHN A. CASTELLANO
SIGNATURE:	/John A. Castellano, Reg. No. 35,094/
DATE SIGNED:	09/23/2014

Total Attachments: 6

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PATENT -

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM¹ FOR MORE THAN ONE ASSIGNEE

The undersigned acknowledge 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 inventors have invented: Title: OPTICAL DEVICE INCLUDING THREE-COUPLED QUANTUM WELL STRUCTURE for which Inventors are about to make or has made United States or International application for patent. WHEREAS, as a below named inventor(s), I/(we) hereby declare that: Section I. Declaration This declaration is directed to: \boxtimes The attached U.S. non-provisional patent application, or U.S. non-provisional patent application number , filed on PCT international patent application number _______, filed on The above-identified application was made or authorized to be made by me (us). I (we) believe that I am (we are) the original inventor (original joint inventors) of a claimed invention in the above-identified application. I (we) hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. This form requires the use of an Application Data Sheet. SEC Ref No. RE-201401-001-1-US0 Attorney Ref No. 2557SI-002201-US

> PATENT REEL: 033796 FRAME: 0361

SAMSUNG ELECTRONICS CO., LTD.

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

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

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, collectively referred to in Section II as Assignors in this section, 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;

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,

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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM
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divisional, renewal or substitute thereof, and as to letters patent any reissue, reexamination, 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 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.

Inventor(s)/Assignor(s) Signature(s) for Section II.

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FIRST INVENTOR/ASSIGNOR	Cho	Yongchul	
SIGNATURE	Youz And A	DATE	<u> Sep. 18,2014</u>

*****************	ACT A PRO PRESSE COR	NAME	SERMOT ADMADE TOO
SEC Ref No.	RE-201401-001-1-US0	 Attorney Ref No. 	2557SI-002201-US

LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	Na	Byunghoon	
			J
	<u> </u>	DATE	Sapt. 18. 2014
SIGNATURE	Francisco Second	****	-1900 100 - 101 T

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
THIRD INVENTOR/ASSIGNOR	Park	Changyoung	
signature 🕘	1 m kg	DATE	429 , 18 , 2014
SIGIRAL ONE		Í	

LEGAL NAME OF	Family Name	First Given Name	Second Given Name
FOURTH INVENTOR/ASSIGNOR	Park	Yonghwa	
SIGNATURE	1/11/10/	A DATE	<u> Sept. 18. 2014</u>

SEC Ref No. **RE-201401-001-1-US0** Attorney Ref No. **2557SI-002201-US**

Section III. Assignment

In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned, collectively referred to in Section II as Assignors in this section, hereby sell(s) and assign(s) to

Gwangju Institute of Science and Technology

having an address at 123, Cheomdangwagi-ro, Buk-gu, Gwangju, 500-712, 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;

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, reexamination, 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;

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SEC Ref No.	RE-201401-001-1-US0	Attorney Ref No.	2557SI-002201-US

SAMSUNG ELECTRONICS CO., LTD.

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 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.

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

	그는 사람들이 얼마나 나는 사람들이 되었다면 가장 하는 사람들이 되었다면 하는 것이 되었다면 하는 것이 없었다.		
LEGAL NAME OF FIFTH INVENTOR/ASSIGNOR	Family Name	First Given Name	Second Given Name
	Lee	Yongtak	
		DATE	Considerance
SIGNATURE	41.4		2017, 2017

LEGAL NAME OF SIXTH INVENTOR/ASSIGNOR	Family Name	First Given Name	Second Given Name
	\$u	Gunwu	
SIGNATURE		DATE	Sep. 11, 2014

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