PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2

EPAS ID: PAT3983800

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DMYTRO APALKOV	05/19/2016
SHUXIA WANG	05/19/2016
JANG-EUN LEE	07/28/2016

RECEIVING PARTY DATA

Name:	SAMSUNG ELECTRONICS CO., LTD.
Street Address:	129 SAMSUNG-RO, YEONGTONG-GU
Internal Address:	SUWON-SI
City:	GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	443-742

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15043349

CORRESPONDENCE DATA

Fax Number: (650)318-3374

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: 650-318-3374

Email: patents@convergentlaw.com CONVERGENT LAW GROUP LLP **Correspondent Name:** Address Line 1: 475 N. WHISMAN ROAD, SUITE 400 Address Line 4: MOUNTAIN VIEW, CALIFORNIA 94043

ATTORNEY DOCKET NUMBER:	NMT021US
NAME OF SUBMITTER:	DEBBIE NISHIHARA
SIGNATURE:	/DebbieNishihara/
DATE SIGNED:	07/28/2016
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 6

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PATENT REEL: 039286 FRAME: 0534

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PATENT REEL: 039286 FRAME: 0535

COMBINED DECLARATION (37 CFR §1.63) FOR UTILITY OR DESIGN 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:	MAGNETIC JUNCTIONS HAVING ELONGATED FREE LAYERS				
for which	h Assignor is about to make or has made United States or International application				
WHEREA	AS, as a below named inventor(s), I/(we) hereby declare that:				
Section I	l. Declaration				
This decl	laration is directed to:				
	The attached U.S. non-provisional patent application, or				
[U.S. non-provisional patent application number $\frac{15/043,349}{\text{on } 2/12/2016}$, filed				
	PCT international patent application number, filed on				
The abov	ve-identified application was made or authorized to be made by me (us).				
	elieve that I am (we are) the original inventor (original joint inventors) of a claimed in the above-identified application.				
	ereby acknowledge that any willful false statement made in this declaration is to ble under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or				
	m requires the use of an Application Data Sheet.				
	Ref WB-201510-047-1 Attorney Ref No. NMT021US No.				

COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM

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 and according to the provisions of the Assignor's employment agreement(s), the undersigned 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 or design 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 or designs 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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	No.			
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM

SAMSUNG ELECTRONICS CO., LTD.

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 Convergent Law Group LLP 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	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	Apalkov	Dmytro	
SIGNATURE	A	DATE	05/15/16

	**		-
SEC Ref	WB-201510-047-1	Attorney Ref No.	NMT021US
, No		10000000	

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LEGAL NAME OF SECOND	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	Wang	Shuxia	- (
SIGNATURE _		DATE -	05/19/20/6
LEGAL NAME OF THIRD	Family Name	First Given Name	Second Given Name
INVENTOR/ASSIGNOR	Lee	Jang-eun	
SIGNATURE		DATE	
LEGAL NAME OF FOURTH INVENTOR/ASSIGNOR	Family Name: 18	First Given Name	Second Given Name
jiĠŇAŢŪRE	: !	DATE	: :
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COMBINED DECLARATION (37 CFR 1.63) FOR UTILITY PATENT APPLICATION AND ASSIGNMENT FORM

SEC Ref WB-201510-047-1 Attorney Ref No.

PATENT REEL: 039286 FRAME: 0539

NMT021US

Document Description: Oath or declaration filed

PTO/AIA/02 (07-13)
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SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)

Title of Invention	MAGNETIC JUNCTIONS HA	AVING ELONGATE	D FREE LAYERS	
This statement is directed to: The attached application, OR United States application or PCT international application number				
	ertino	State CA	95014	Country
I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application. The above-identified application was made or authorized to be made by me. I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.				
Le As Pe Pe	ip to the inventor to whom this substitued and Representative (for deceased or lessignee, erson to whom the inventor is under an erson who otherwise shows a sufficient bint Inventor.	egally incapacitated inventon on obligation to assign,		FR 1.46 is required), or

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This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

REEL: 039286 FRAME: 0540

SUBSTITUTE STATEMENT

Circumstances permitting execution of this substitute statement:	
Inventor is deceased,	
Inventor is under legal incapacity,	
Inventor cannot be found or reached after diligent effort, or	
Inventor has refused to execute the oath or declaration under 37 CFR 1.63.	
If there are joint inventors, please check the appropriate box below:	
An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive er or is currently submitted.	ntity has been
<u>OR</u>	
An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and provious information is attached. See 37 CFR 1.64(b).	
WARNING:	
Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required to support a petition or an application. If this type of personal information is included in documents submitted to the petitioners/applicants should consider redacting such personal information from the documents before submitting t USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after public application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or iss patent. Furthermore, the record from an abandoned application may also be available to the public if the application referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorizatio PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly as	t card numbers by the USPTO e USPTO, them to the cation of the suance of a ion is on forms
PERSON EXECUTING THIS SUBSTITUTE STATEMENT:	
Name: Janyce R. Mitchell	7/28/2016 al):
Signature:/Janyce R. Mitchell/	
APPLICANT NAME AND TITLE OF PERSON EXECUTING THIS SUBSTITUTE STATEMENT:	
If the applicant is a juristic entity, list the applicant name and the title of the signer:	
Samsung Electronics Co., Ltd. Applicant Name:	
Title of Person Executing This Substitute Statement: Attorney for Applicant	
The signer, whose title is supplied above, is authorized to act on behalf of the applicant.	
Residence of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent):	
City Mountain View State CA Country US	
Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent)	
Convergent Law Group LLP	
475 N. Whisman Road, Suite 400	
State Zip Country	JS
Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be four	nd or reached

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