505526331 06/14/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5573137

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHEOLKYU SHIN	05/21/2019
YOUNGWOO KWAK	05/24/2019
HOONDONG NOH	05/26/2019

RECEIVING PARTY DATA

Name:	SAMSUNG ELECTRONICS CO., LTD.
Street Address:	129, SAMSUNG-RO, YEONGTONG-GU
City:	SUWON-SI, GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	16677

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16441822

CORRESPONDENCE DATA

Fax Number:

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: 202-293-0804

Email: usdocketing@jeffersonip.com
Correspondent Name: JEFFERSON IP LAW, LLP

Address Line 1: 1130 CONNECTICUT AVE., NW, SUITE 420

Address Line 4: WASHINGTON, D.C. 20036

ATTORNEY DOCKET NUMBER:	0203-2429
NAME OF SUBMITTER:	WONKI PARK
SIGNATURE:	/Wonki PARK/
DATE SIGNED:	06/14/2019

Total Attachments: 7

source=0203-2429 Assignment As Filed#page1.tif source=0203-2429 Assignment As Filed#page2.tif source=0203-2429 Assignment As Filed#page3.tif source=0203-2429 Assignment As Filed#page4.tif

PATENT 505526331 REEL: 049473 FRAME: 0576

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> PATENT REEL: 049473 FRAME: 0577

RECORDATION FORM COVER SHEET						
PATENTS ONLY						
To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.						
1. Name of conveying party(ies)	2. Name and address of receiving party(ies)					
1) Cheolkyu SHIN, 2) Youngwoo KWAK, and 3) Hoondong NOH	Name: Samsung Electronics Co., Ltd.					
	Internal Address:					
Additional name(s) of conveying party(ies) attached? Yes V No						
3. Nature of conveyance/Execution Date(s):	Street Address: 129, Samsung-ro, Yeongtong-gu					
Execution Date(s) May 21, 2019, May 24, 2019& May 26, 2019						
Assignment Merger						
Security Agreement Change of Name	City: Suwon-si, Gyeonggi-do					
Joint Research Agreement	State:					
Government Interest Assignment	Country: Republic of Korea Zip: 16677					
Executive Order 9424, Confirmatory License	Zip. 10077					
Other	Additional name(s) & address(es) attached? Yes Vo					
16/441,822 Additional numbers att	ached? ☐ Yes ✔ No					
5. Name and address to whom correspondence	6. Total number of applications and patents					
concerning document should be mailed:	involved: One					
Name: Jefferson IP Law, LLP	7. Total fee (37 CFR 1.21(h) & 3.41) \$					
Internal Address: Wonki Park	Authorized to be charged by credit card					
	Authorized to be charged to deposit account					
Street Address: 1130 Connecticut Ave., NW, Suite 420	Enclosed					
	None required (government interest not affecting title)					
City: Washington	8. Payment Information					
State: DC Zip:20036	a. Credit Card Last 4 Numbers Expiration Date					
Phone Number: <u>202-293-0804</u>	,					
Fax Number: 202-403-3587	b. Deposit Account Number					
Email Address: usdocketing@jeffersonip.com	Authorized User Name					
9. Signature: /Wonki PARK/ Reg. No. 38,991 June 14, 2019						
Signature	Date					
<u>Wonki Park</u> Name of Person Signing	Total number of pages including cover sheet, attachments, and documents:					

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

REEL: 049473 FRAME: 0578

CLIENT REF.: YPF201903-0037/US_DMC SAMSUNG REF.: ML-201810-025-1-US0

Assignment

WHEREAS, the following inventors, namely 1) Cheolkyu SHIN, 2) Youngwoo KWAK, and 3) Hoondong NOH (hereinafter called "Assignors"), having made or discovered certain new, useful and non-obvious improvements in an invention having a working title of:

METHOD AND APPARATUS FOR PERFORMING COMMUNICATION IN HETEROGENEOUS NETWORK.

for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on <u>June 14, 2019</u>, and assigned Serial No. <u>16/441,822</u>; and,

WHEREAS, Samsung Electronics Co., Ltd., a corporation duly organized under the laws of the Republic of Korea, located and doing business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, 16677 (hereinafter called "Assignee"), is desirous of acquiring the entire right, title and interest therein;

NOW, THEREFORE, BE IT KNOWN that for and in good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors do hereby sell, assign and transfer unto said Assignee the entire and exclusive worldwide right, title and interest in and to all said inventions and discoveries disclosed in said application, and in and to said application, any and all substitutions, divisions, provisionals, conversions of provisionals and continuations thereof, and in and to all Letters Patent, United States and all other foreign countries, that may be granted for said inventions and discoveries, and in and to all extensions, renewals and reissues thereof; and the right to file any other foreign country application and/or claim priority under the provisions of any international treaty or convention arising from this application or any divisional, continuing, substitute or reissue application therefrom. The aforesaid assignment includes the right in and to all income, royalties, damages and payments, now or hereafter due or payable with respect to any Letters Patent which may be granted, and in and to all causes of action (either in law or in equity), and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment, as fully and entirely as the same would have been held and enjoyed by Assignors if this sale, assignment and transfer had not been made.

Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
 - all papers to be used in connection with this application and any divisional, continuing, substitute or reissue application thereof, as the Assignee may deem necessary or expedient, and
 - all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional, continuing, substitute or reissue application thereof, as may be necessary or expedient;

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CLIENT REF.: YPF201903-0037/US_DMC SAMSUNG REF.: ML-201810-025-1-US0

- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
- to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
- d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
- e. to perform all other affirmative acts which may be necessary or desirable to secure full and complete protection of the inventions and discoveries or that may be necessary or desirable to vest in Assignee the complete title to the inventions and discoveries and Letters Patent hereby conveyed and to enable Assignee to record title.

Assignors hereby authorize and request the United States Patent and Trademark Office or any other issuing authority to issue any and all Letters Patent that may be granted upon this invention and/or this application or any divisional, continuing, substitute or reissue application thereof to the Assignce, its legal representatives, successors and assigns.

Assignors each hereby represents, covenants and warrants that he or she has the full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

The provisions of this Assignment are binding upon Assignors' heirs, legal representatives and/or administrators and assigns.

Assignors hereby grant to the law firm of Jefferson IP Law, LLP of Washington, DC and its attorneys and agents as associated with Customer No. 68103 the authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

CLIENT REF.: YPF201903-0037/US_DMC SAMSUNG REF.: ML-201810-025-1-US0

Signature of Inventor:

Chemikyu SHIN

5 / 24 / 20 19 Date

Signature of Inventor:

Youngwoo KWAK

Date

Signature of Inventor:

Hoondong NOH

Date

CLIENT REF.: YPF201903-0037/US_DMC SAMSUNG REF.: ML-201810-025-1-US0

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for which a United States Patent Application is being filed concurrently herewith or, if not being concurrently filed, was filed on <u>June 14, 2019</u>, and assigned Serial No. 16/441,822; and.

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Assignors covenant and agree, without further compensation to said Assignors but at Assignee's expense:

- a. to execute:
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 - all papers in connection with any interference, litigation, mediation, arbitration or other proceeding relating to this application or any divisional, continuing, substitute or reissue application thereof, as may be necessary or expedient;

CLIENT REF.: YPF201903-0037/US_DMC SAMSUNG REF.: ML-201810-025-1-US0

- b. to cooperate with the Assignee in every way possible in obtaining evidence and going forward in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof;
- c. to communicate to the Assignee any facts relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof, including evidence for any interference, litigation, mediation, arbitration or other proceeding relating to said invention, whenever requested;
- d. to testify in any interference, litigation, mediation, arbitration or other proceeding relating to said invention, said application and any divisional, continuing, substitute or reissue application thereof whenever requested; and
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CLIENT REF.: YPF201903-0037/US_DMC SAMSUNG REF.: ML-201810-025-1-US0

Signature of Inventor:		
	Cheolkyu SHIN	Date
Signature of Inventor:	Youngwoo KWAK	05/24/2019 Date
Signature of Inventor:		
	Hoondong NOH	Date

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