505822047 12/16/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5868877

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
YOUNG-GWANG YOON	11/15/2019
YUN-IK SON	11/18/2019
JEE-HYUN PARK	11/18/2019

RECEIVING PARTY DATA

Name:	SK HYNIX INC.
Street Address:	2091, GYEONGCHUNG-DAERO, BUBAL-EUB, ICHEON-SI
City:	GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16715036	

CORRESPONDENCE DATA

Fax Number: (571)327-5452

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: 5713275450

Email: ipntlaw@ipntlaw.com

Correspondent Name: IP & T GROUP LLP

Address Line 1: 8230 LEESBURG PIKE

Address Line 2: SUITE 650

Address Line 4: VIENNA, VIRGINIA 22182

ATTORNEY DOCKET NUMBER:	P19H0062/US
NAME OF SUBMITTER:	KEON WOO PARK
SIGNATURE:	/Keon Woo PARK/
DATE SIGNED:	12/16/2019
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 3

source=IVX000142379_P19H0062US_ASSIGNMENT&DECLARATION#page1.tif source=IVX000142379_P19H0062US_ASSIGNMENT&DECLARATION#page2.tif source=IVX000142379_P19H0062US_ASSIGNMENT&DECLARATION#page3.tif

PATENT 505822047 REEL: 051290 FRAME: 0468

SHINSUNG:	INVOCAL	41270/DI	OHOOKAATE
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Attorney	Docket	No.:	
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# ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS YOON, Young-Gwang	, hereinafter
referred to collectively as the assignor and inventor, has invented a certain improvement relating to	
SEMICONDUCTOR DEVICE AND METHOD FOR FABRICATING THE SAME	
[X] said application being attached hereto; [ ] said application having been filed in the United States Patent and Trademark Office on	
AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gyeonggi-do Korea, hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title ansaid application, including any and all divisions and continuations thereof, and in and to said invention an patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof	d interest in and to d any and all
NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other consideration paid by said assignee to said assignor, the receipt of which is hereby acknowledged, so assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and excluinterest in and to said application, including any and all divisions and continuations thereof, and in and to any and all patents which may be granted therefor, including any and all renewals, reissues and prolong assignee, and said assignee's successors and assigns, to have, hold, exercise and enjoy the said application all divisions and continuations thereof, and the said invention and any and all patents which may be including any and all renewals, reissues and prolongations thereof, with all the rights, powers, privilege anywise arising from or appertaining thereto, for and during the term or terms of any and all such paincluding any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee's successors and assigns, in as ample and beneficial a manner as the said assignor might or cenjoyed the same, if this assignment had not been made.	aid assignor hereby usive right, title and o said invention and gations thereof; said in, including any and be granted therefor, is and advantages in tents when granted, assignee, and said
AND said assignor hereby agrees to perform, upon the request of said assignee, or said assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all and prolongations thereof.	
AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issi said application, and on any and all divisions and continuations thereof, to said assignee, and said assign assigns, in accordance herewith.	
As an above-named inventor, I hereby declare that the above-identified application was made made by me, and that I am the original inventor or an original joint inventor of a claimed invention in the	
I hereby acknowledge that any willful false statement made in this declaration is punishable un by fine or imprisonment of not more than five (5) years, or both.	der 18 U.S.C. 1001
ASSIGNOR (INVENTOR):	
Signature:	<del></del> :
Printed or Typed Name: YOON, Young-Gwang	

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HINSUNG:	IVX000142379	(P19H0062/US)

Attorney Docket No.:

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT
WHEREAS SON, Yun-lk , hereinafter
referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE AND METHOD FOR FABRICATING THE SAME
[X] said application being attached hereto;  [ ] said application having been filed in the United States Patent and Trademark Office on
AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gyeonggi-do, Republic of Korea, hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof;
NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable consideration paid by said assignee to said assignor, the receipt of which is hereby acknowledged, said assignor hereby assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive right, title and interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and assignee, and said assignee's successors and assigns, to have hold exercise and enjoy the said application, including any and all divisions and continuations thereof, and the said invention and any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such patents when granted, including any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee, and said assignee's successors and assigns, in as ample and beneficial a manner as the said assignor might or could have held and enjoyed the same, if this assignment had not been made.
AND said assignor hereby agrees to perform, upon the request of said assignee, or said assignee's successors or assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renewals, reissues and prolongations thereof.
AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue Letters Patent on said application, and on any and all divisions and continuations thereof, to said assignee, and said assignee's successors and assigns, in accordance herewith.
As an above-named inventor, I hereby declare that the above-identified application was made or authorized to be made by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.
I 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.
ASSIGNOR (INVENTOR):
Signature: Munk Son Date: 2019. 11. 18
Printed or Typed Name: SON, Yun-lk
Page 1 of 1



SHINSUNG: IVX000142379(P19H0062/US)

Attorney Docket No.:

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT
WHEREAS PARK, Jee-Hyun , hereinafter
referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE AND METHOD FOR FABRICATING THE SAME
[X] said application being attached hereto; [ ] said application having been filed in the United States Patent and Trademark Office on
Serial No, the United States of America being designated.
AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gyeonggi-do, Republic of Korea, hereinafter referred to as the assignee or applicant, is desirous of acquiring the entire right, title and interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof;
NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable consideration paid by said assignee to said assigner, the receipt of which is hereby acknowledged, said assigner hereby assigns, sells and transfers to said assignee, and said assignee's successors and assigns, the full and exclusive right, title and interest in and to said application, including any and all divisions and continuations thereof, and in and to said invention and assignee, and said assignee's successors and assigns, to have, hold, exercise and enjoy the said application, including any and all divisions and continuations thereof, and the said invention and any and all patents which may be granted therefor including any and all renewals, reissues and prolongations thereof, with all the rights, powers, privileges and advantages in anywise arising from or appertaining thereto, for and during the term or terms of any and all such patents when granted including any and all renewals, reissues and prolongations thereof, for the use and benefit of said assignee, and said assignee's successors and assigns, in as ample and beneficial a manner as the said assigner might or could have held and enjoyed the same, if this assignment had not been made.  AND said assignor hereby agrees to perform, upon the request of said assignee, or said assignee's successors or
assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renewals, reissues and prolongations thereof.
AND said assignor authorizes and requests the Commissioner of Patents and Trademarks to issue Letters Patent or said application, and on any and all divisions and continuations thereof, to said assignee, and said assignee's successors and assigns, in accordance herewith.
As an above-named inventor, I hereby declare that the above-identified application was made or authorized to be made by me, and that I am the original inventor or an original joint inventor of a claimed invention in the application.
I 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.
ASSIGNOR (INVENTOR):
Signature: <u>Jeelyn Park</u> Date: 2019.11.18.
Drintad or Tuned Name: PARK Jee-Hyun

PATENT REEL²⁰⁶77172905FRAME: 0471^{2:48}

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