

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6810726

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
BEOM HO MUN	06/22/2021
EUN JEONG KIM	06/23/2021
JONG KOOK PARK	06/22/2021
SEUNG MI LEE	06/23/2021
JI WON CHOI	06/28/2021
KYOUNG TAK KIM	06/23/2021
YUN HYUCK JI	06/23/2021
RECEIVING PARTY DATA	
Name:	SK HYNIX INC.
Street Address:	2091, GYEONGCHUNG-DAERO, BUBAL-EUB, ICHEON-SI
City:	GYEONGGI-DO
State/Country:	KOREA, REPUBLIC OF
Postal Code:	17336
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	17374578
CORRESPONDENCE DATA	
Fax Number:	(571)327-5452
<i>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.</i>	
Phone:	5713275450
Email:	ipntlaw@ipntlaw.com
Correspondent Name:	IP & T GROUP LLP
Address Line 1:	102 MAPLE AVE. E
Address Line 4:	VIENNA, VIRGINIA 22180
ATTORNEY DOCKET NUMBER:	P21H0046/US
NAME OF SUBMITTER:	DRAGAN PLAVSIC
SIGNATURE:	/Dragan PLAVSIC/
DATE SIGNED:	07/13/2021

Total Attachments: 7

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**ASSIGNMENT OF AND DECLARATION (37 CFR 1.63) FOR APPLICATION
FOR UNITED STATES LETTERS PATENT**

WHEREAS Beom Ho MUN, hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE WITH LOW-K SPACER

said application being attached hereto;
 said application having been filed in the United States Patent and Trademark Office on _____, as Application Serial No. _____, and was amended on _____ (if applicable);
 the specification of which was filed under the Patent Cooperation Treaty 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 (i.e. divisional, continuation, and continuation-in-part applications), and in and to said invention and improvements ("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 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said 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:  Beom Ho Mun Date: 2021. 6. 22

Printed or Typed Name: Beom Ho MUN

ASSIGNMENT OF AND DECLARATION (37 CFR 1.63) FOR APPLICATION
FOR UNITED STATES LETTERS PATENT

WHEREAS Eun Jeong KIM, hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE WITH LOW-K SPACER

said application being attached hereto;
 said application having been filed in the United States Patent and Trademark Office on _____, as Application Serial No. _____, and was amended on _____ (if applicable);
 the specification of which was filed under the Patent Cooperation Treaty 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 (i.e. divisional, continuation, and continuation-in-part applications), and in and to said invention and improvements ("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 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said 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:  Date: June 23, 2021

Printed or Typed Name: Eun Jeong KIM

ASSIGNMENT OF AND DECLARATION (37 CFR 1.63) FOR APPLICATION
FOR UNITED STATES LETTERS PATENT

WHEREAS Jong Kook PARK, hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE WITH LOW-K SPACER

said application being attached hereto;
 said application having been filed in the United States Patent and Trademark Office on _____, as Application Serial No. _____, and was amended on _____ (if applicable);
 the specification of which was filed under the Patent Cooperation Treaty on _____ Serial No. _____, the United States of America being designated.

AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Buhal-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 (i.e. divisional, continuation, and continuation-in-part applications), and in and to said invention and improvements ("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 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said 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:  Date: 2021.6.22

Printed or Typed Name: Jong Kook PARK

ASSIGNMENT OF AND DECLARATION (37 CFR 1.63) FOR APPLICATION
FOR UNITED STATES LETTERS PATENT

WHEREAS Ji Won CHOI....., hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE WITH LOW-K SPACER.....

said application being attached hereto;
 said application having been filed in the United States Patent and Trademark Office on, as Application Serial No., and was amended on(if applicable);
 the specification of which was filed under the Patent Cooperation Treaty on Serial No., the United States of America being designated.

AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Buhal-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 (i.e. divisional, continuation, and continuation-in-part applications), and in and to said invention and improvements ("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 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said 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:  Date: JUNE. 28, 2021

Printed or Typed Name: Ji Won CHOI

**ASSIGNMENT OF AND DECLARATION (37 CFR 1.63) FOR APPLICATION
FOR UNITED STATES LETTERS PATENT**

WHEREAS Kyoung Tak KIM, hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE WITH LOW-K SPACER

said application being attached hereto;
 said application having been filed in the United States Patent and Trademark Office on _____, as Application Serial No. _____, and was amended on _____ (if applicable);
 the specification of which was filed under the Patent Cooperation Treaty on _____ Serial No. _____, the United States of America being designated.

AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Buhal-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 (i.e. divisional, continuation, and continuation-in-part applications), and in and to said invention and improvements ("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 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof; said 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.

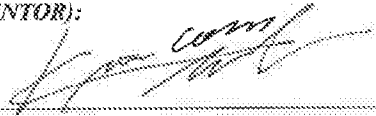
AND said assignor hereby agrees to perform, upon the request of said assignee, or said assignee's successors or assigns, any and all acts relating to the obtaining or to the asserting of said patents, including any and all renewals, reissues and prolongations thereof.

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:  Date: June 23, 2021

Printed or Typed Name: Kyoung Tak KIM



ASSIGNMENT OF AND DECLARATION (37 CFR 1.63) FOR APPLICATION
FOR UNITED STATES LETTERS PATENT

WHEREAS Yun Hyuck Ji, hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to
SEMICONDUCTOR DEVICE WITH LOW-K SPACER

said application being attached hereto;
 said application having been filed in the United States Patent and Trademark Office on _____, as Application Serial No. _____, and was amended on _____ (if applicable);
 the specification of which was filed under the Patent Cooperation Treaty on _____, Serial No. _____, the United States of America being designated.

AND WHEREAS SK hynix Inc. of 2091, Gyeongchung-daero, Bupal-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 (i.e. divisional, continuation, and continuation-in-part applications), and in and to said invention and improvements ("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 any and all patents which may be granted therefor, including any and all renewals, reissues and prolongations thereof, said 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: Yun Hyuck Ji Date: June 23, 2021

Printed or Typed Name: Yun Hyuck Ji