03/14/2019 505373985

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
DOH KWON LEE	02/23/2018
IN HO KIM	02/23/2018
WON MOK KIM	02/23/2018
JONG KEUK PARK	02/23/2018
TAEK SUNG LEE	01/08/2019
DOO SEOK JEONG	02/23/2018
HYEON SEUNG LEE	02/23/2018
JEUNG HYUN JEONG	01/10/2019

RECEIVING PARTY DATA

Name:	KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY	
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State/Country:	KOREA, REPUBLIC OF	
Postal Code:	02792	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16333252

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	TNIP-120NP (KIST)
NAME OF SUBMITTER:	STEVEN M. RABIN
SIGNATURE:	/Steven M. Rabin/

PATENT REEL: 048592 FRAME: 0280

505373985

DATE SIGNED:	03/14/2019
	This document serves as an Oath/Declaration (37 CFR 1.63).
Total Attachments: 3	
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PATENT REEL: 048592 FRAME: 0281

ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WHEREAS <u>LEE. Doh Kwon; KIM, In Ho; KIM, Won Mok; PARK, Jong Keuk; LEE, Taek Sung; JEONG, Doo Seok; LEE, Hyeon Seung and JEONG, Jeung Hyun</u> of Republic of Korea hereinafter referred to collectively as the assignor and inventor, has invented a certain improvement relating to

METHOD OF TEXTURING SEMICONDUCTOR SUBSTRATE, SEMICONDUCTOR

SUBSTRATE MANUFACTURED USING THE METHOD, AND SOLAR CELL INCLUDING

THE SEMICONDUCTOR SUBSTRATE

ी said application being attached hereto;
I said application having been filed in the United States Patent and Trademark Office on
, as Application Serial No, and was amended on
f applicable);
D] the specification of which was filed under the Patent Cooperation Treaty on November 1,2017.
erial No. PCT/KR2017/012212 United States of America being designated.

AND WHEREAS KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY of Seoul, 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 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 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 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.

Address all correspondence and telephone calls to Rabin & Berdo, P.C., 1101 14th Street, N.W., Suite 500, Washington, D.C. 20005, Telephone; (202) 371-8976; Fax: (202) 408-0924, Customer No. 23995.

PATENT REEL: 048592 FRAME: 0282

Attorney Reference: TNIP-120NP (KIST)

Continued – Page 2 ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WITNESS:	ASSIGNOR (SOLE OR FIRST INVENTOR):
Signature:	Signature: 7144
Name: CHO, Eunkyung	Legal Name: LEE, Doh Kwon
Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Date: Feb. 13, 2018
Seoul, 05854, Republic of Korea	
WITNESS:	ASSIGNOR (SECOND INVENTOR):
Signature: CHO, Eunkyung	Signature:
Name: CHO, Eunkyung Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Legal Name: KIM, In Ho Date: Fab. ユョ、ユロルタ
Seoul, 05854, Republic of Korea	Date: 720,25. 2010
WITNESS: Signature: CHO, Eunkyung Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu Seoul, 05854, Republic of Korea	ASSIGNOR (THIRD THVENTOR): Signature: Mon Mok Legal Name: KIM, Won Mok Date: feb. 23 29
WITNESS: Signature: CHO, Eunkyung	ASSIGNOR (FOURTH AMENTOR): Signature: Legal Name: PARK, Jong Keuk
Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Date: <u>Heb. 23, 20/8</u>
Seoul, 05854, Republic of Korea	·
WITNESS: Signature:	ASSIGNOR (FIFTH INVENTOR): Signature:
Name: CHO, Eunkyung	Legal Name: <u>LEE, Taek Sung</u>
Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Date: 1/4 03 · 20/5.
Seoul, 05854, Republic of Korea	- , ,

Attorney Reference: TNIP-120NP (KIST)

Continued – Page 3 ASSIGNMENT OF AND DECLARATION FOR APPLICATION FOR UNITED STATES LETTERS PATENT

WITNESS:	ASSIGNOR (SJXTH INVENTOR):
Signature:	Signature:
Name: CHO, Eunkyung	Legal Name: JEONG, Doo Seok
Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Date: Feb 23 20/8
Seoul, 05854, Republic of Korea	
WITNESS:	ASSIGNOR (SEVENTH INVENTOR):
Signature:	Signature: <u>기원등</u>
Name: CHO, Eunkyung	Legal Name: <u>LEE, Hyeon Seung</u>
Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Date: Feb 29, 2018
Seoul, 05854, Republic of Korea	•.
WITNESS:	ASSIGNOR (EIGHTH INVENTOR):
Signature:R	Signature: The
Name: CHO, Eunkyung	Legal Name: <u>JEONG, Jeung Hyun</u>
Address: Mstate A-1201, Beobwon-ro 114, Songpa-gu	Date: Jan 10, 2019
Seoul, 05854, Republic of Korea	

PATENT REEL: 048592 FRAME: 0284

RECORDED: 03/14/2019

RABIN & BERDO, P.C., Washington, D.C.