505167603 10/30/2018

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
NAM KYU PARK	10/23/2018
JAE MO GOH	10/22/2018
JIN PYO KIM	10/22/2018
YOUNG IL SEO	10/23/2018
EUN AH JOO	10/22/2018
JE HYUN LEE	10/23/2018
SANG YOON LEE	10/22/2018
DONG A LIM	10/22/2018
KI HWAN KIM	10/23/2018

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16175646

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NAME OF SUBMITTER: JONATHAN FERGUSON

PATENT REEL: 047361 FRAME: 0898

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SIGNATURE:	/JONATHAN FERGUSON/
DATE SIGNED:	10/30/2018
Total Attachments: 11	•
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PATENT REEL: 047361 FRAME: 0899

Attorney Docket No. 4733.010US1 Client Ref. No. GN-56998-US

ASSIGNMENT

WHEREAS, Nam Kyu Park, Jae Mo Goh, Jin Pyo Kim, Young II Seo, Eun Ah Joo, Je Hyun Lee, Sang Yoon Lee, Dong A Lim and Ki Hwan Kim (hereinafter the "Undersigned") have made one or more inventions and other subject matter (hereinafter collectively referred to as the "Invention"); as described in the U.S. patent application filed on October 30, 2018, assigned U.S. application number 16/175,646, and titled ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN; and as described in a patent application filed on May 29, 2018 assigned Korean application number 10-2018-0061283.

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency, and adequacy of which are hereby acknowledged by the Undersigned, the Undersigned do hereby irrevocably and unconditionally:

CONVEY, ASSIGN, AND TRANSFER to Republic of Korea (National Forensic Service Director Ministry of Public Administration and Security) (the "Assignee"), having a place of business at 139, Jiyang-ro, Yangcheon-gu, Seoul 08036, Republic of Korea, the Undersigned's entire right, title, and interest for the United States and all foreign countries and jurisdictions in and to:

the Invention which is disclosed in the above-identified application or applications;

such application or applications, and all divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other applications for a patent or patents which have been or shall be filed in the United States (including all provisional and non-provisional applications), and in all foreign countries and jurisdictions based in whole or in part on any of such invention (including any application for a utility model or an innovation patent application);

all original and reissued patents which have been or shall be issued in the United States and all foreign countries and jurisdictions based in whole or in part on any of such invention;

including the right to claim priority to the above-identified patent application or applications in relation to subject matter based in whole or in part on the above-identified patent application or applications and any of the foregoing including the right to file foreign applications under the provisions of any convention or treaty;

and including the right to all causes of action, remedies, and other enforcement rights related to the above-identified application or applications, including without limitation the right to sue for past, present, or future infringement, misappropriation, or violation of any and all rights related to the above-identified patent application or applications and any of the foregoing, including the right to obtain and collect damages for past, present, or future infringement;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such invention to the Assignee;

PATENT REEL: 047361 FRAME: 0900 Assignment Docket No. 4733.010US1
Assignors: Nam Kyn Park et al. Client Ref. No. GN-56998-338

Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

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AUTHORIZE AND REQUEST that any attorney associated with U.S. Patent and Trademark Office (USPTO) Customer No. 21.186 may (directly or through his/her designee) delete, insert, or alter any information related to the above-identified patent application or applications or any of the foregoing, after execution of this Assignment;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or shall be made to others by the Undersigned, and that the full right to convey the same as herein expressed is possessed by the Undersigned;

COVENANT, that when requested and without compensation, but at the expense of the Assignee, in order to carry out in good faith the intent and purpose of this Assignment, the Undersigned shall (1) execute all provisional, non-provisional, divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other patent applications for the Invention; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers for the Invention; (3) communicate to the Assignee all facts known to the Undersigned relating to the Invention and the history thereof; (4) cooperate with the Assignee in any interference, reexamination, reissue, opposition, dispute, or litigation involving any of the applications or patents for the Invention; and (5) take such further actions as the Assignee shall reasonably consider necessary or desirable for vesting title to such Invention in the Assignee, or for securing, maintaining and enforcing proper patent protection for the Invention;

COVENANT, that should any provision of this agreement be held unenforceable by an authority of competent jurisdiction, such a ruling shall not affect the validity and enforceability of the remaining provisions.

THIS AGREEMENT IS TO BE BINDING on the heirs, assigns, representatives, and successors of the Undersigned, and is to extend to the benefit of the successors, assigns, and nominees of the Assignee.

AGREED as of the date of my signature below:

Docket No. 4733 010US1 Assignment Assignors: Nam Kyu Park et al.

Clien
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN Client Ref. No. GN-56998-LIS

Page 3 of 11

Assignor:

(Signature):

Name: Nam Kyu Park

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Date:

PATENT

Assignment Assignors: Nam Kyu Park et al.

Clien
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

Docket No: 4733.0101081 Client Ref. No. GN-56998-US

Assignor:

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Name: Jae Mo Goh

City/State: Wonju-si, Gangwon-do, Republic of Korea

Date:

PATENT

REEL: 047361 FRAME: 0903

Assignment Operet No. 4733.016081
Assignment Nam Kysi Park et al. Chem Ref. No. GN-56998408
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN
Page 5 of 13

Assignor:

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Name: Jin Pyo Kim

City/State: Yuseong-gu, Daejeon, Republic of Korea

Date:

22. 04. 2018

Assignmen	i i			
Assignors:	Nam	Kyu	Park	et

Docket No. 4733,0101)81 Client Ref. No. GN-56998-US

Assignors: Nam Kyu Park et al.

Clier
Title: ELECTRONIC DEVICE AND METROD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

Page 6 of 11

Assignor:

(Signature):

Name: Young Il Seo

City/State: Wonju-si, Gangwon-do, Republic of Korea

Date:

Assignment

Docket No: 4733-010US1 Client Ref. No. GN-56998-US

Assignors: Nam Kyu Park et al

Clien
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

Page 7 of 11

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(Signature):

Name: Eun Ah Joo

City/State: Yongin-si, Gyeonggi-do, Republic of Korea

Date:

10.22 2018

Docket No: 4733.019US1 Client Ref. No. GN-56998-US

Assignors: Mam Kyu Park et al.

Clim
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF FERIMETER STAIN

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Assignor:

(Signature):

Name: Je Hyun Lee

City/State: Wonju-si, Gangwon-do, Republic of Korea

Date:

Assignment Dockst No. 4733.016US1
Assignors: Nam Kyu Park et al. Chem Ref. No. GN-56998-US
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

rite: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

Page 9 of 11

Assignor:

(Signature):

Name: Sang Yoon Lee

City/State: Siheung-si, Gyeonggi-do, Republic of Korea

Oate: 20/8 /0.22

Assignment

Docket No. 4733.016US1 Chent Ref. No. GN-56998-D8

Assignors: Nam Kyu Park of al.

Ches
Title: ELECTRONIC DEVICE AND METHOD OF CALCULATING FORMATION TIME OF PERIMETER STAIN

Assignor:

(Signature):

Name: Dong A Lim

City/State: Yuseong-gu, Daejeon, Republic of Korea

2018.10.22 Date:

Sasignment Assignors: Nam Ky Idle: EUECTRONI Page 11 of 11	i Prk elsi. C device and metrod of calculating formation time of ferimeter	
Assignor:	A.	
(Signature):		
	Name: Ki Hwan Kim City/State: <u>Yongin-si, Gynonggi-do, Republic of Korea</u>	
Date:	>0/8. /0. 23	

RECORDED: 10/30/2018

PATENT REEL: 047361 FRAME: 0910