

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5390915

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CHUN MA	12/21/2018
GENG HAN	12/21/2018
XINLEI XU	12/21/2018
SHAOQIN GONG	12/21/2018
BAOTE ZHUO	12/21/2018
HAIYING TANG	12/21/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	EMC IP HOLDING COMPANY LLC
<b>Street Address:</b>	176 SOUTH STREET
<b>City:</b>	HOPKINTON
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	01748
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16249191
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(508)366-4688
<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>	
<b>Phone:</b>	508-616-2900
<b>Email:</b>	Docket@BainwoodHuang.com
<b>Correspondent Name:</b>	BAINWOOD, HUANG & ASSOCIATES, LLC
<b>Address Line 1:</b>	2 CONNECTOR ROAD
<b>Address Line 4:</b>	WESTBOROUGH, MASSACHUSETTS 01581
<b>ATTORNEY DOCKET NUMBER:</b>	1003-707
<b>NAME OF SUBMITTER:</b>	DAVID E. HUANG, ESQ.
<b>SIGNATURE:</b>	/David E. Huang, Reg. No. 39,229/
<b>DATE SIGNED:</b>	02/25/2019
<b>Total Attachments: 18</b>	

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**ASSIGNMENT**

**WHEREAS**, I, Chun Ma, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

**METHOD AND DEVICE OF DATA REBUILDING IN STORAGE SYSTEM**

which is further identified by Attorney Docket Number 1003-707;

**WHEREAS**, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, desires to acquire an interest therein in accordance with agreements duly entered into with me;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

**AND**, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

**AND** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

( 16/249,191 , filed 1/16/2019 )

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 2018.12.21 Chun Ma  
Inventor's Signature

Legal name of inventor: Chun Ma  
Residence: Room 502, Unit 2, Building 300, Huaifangnanli  
Fengtai District  
Beijing, 100076  
China (People's Republic)  
Mailing Address: Same as Above  
Citizenship: CN

I, Lei Sun (name) whose residential address is  
7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Chun Ma (name of person signing the assignment)  
who is personally known to me, execute the above assignment.

Lei Sun (signature of first witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

---

I, Zhihui Qiu (name) whose residential address is  
7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Chun Ma (name of person signing the assignment)  
who is personally known to me, execute the above assignment.

Zhihui Qiu (signature of second witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-707  
Client Docket No.: 109920.02

**ASSIGNMENT**

**WHEREAS**, I, Geng Han, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

**METHOD AND DEVICE OF DATA REBUILDING IN STORAGE SYSTEM**

which is further identified by Attorney Docket Number 1003-707;

**WHEREAS**, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, desires to acquire an interest therein in accordance with agreements duly entered into with me;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-707  
Client Docket No.: 109920.02

**AND**, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

**AND** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

( 16/249,191 , filed 1/16/2019 )

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 2018.12.21

Geng Han

Inventor's Signature

Legal name of inventor: Geng Han  
Residence: 1-601, Building 2, Zone 1, ShangDiDongLi  
Haidian District  
Beijing, 10010  
China (People's Republic)  
Mailing Address: Same as Above  
Citizenship: CN

I Lei Sun (name) whose residential address is  
7/F, Block D, Tsinghua Science Park, Hai Dian District, Beijing, P.R.C  
was personally present and did see Geng Han (name of person signing the  
assignment) who is personally known to me, execute the above assignment.

Lei Sun (signature of first witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12. 21 of 20 18. (date of signature)

I Zhihui Qiu (name) whose residential address is  
7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC  
was personally present and did see Geng Han (name of person signing the  
assignment) who is personally known to me, execute the above assignment.

Zhihui Qiu (signature of second witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12. 21 of 20 18. (date of signature)



**ASSIGNMENT**

**WHEREAS**, I, Xinlei Xu, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

**METHOD AND DEVICE OF DATA REBUILDING IN STORAGE SYSTEM**

which is further identified by Attorney Docket Number 1003-707;

**WHEREAS**, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, desires to acquire an interest therein in accordance with agreements duly entered into with me;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-707  
Client Docket No.: 109920.02

**AND**, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

**AND** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

( 16/249,191 , filed 1/16/2019 )

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 2018.12.21

Xinlei Xu  
Inventor's Signature

Legal name of inventor: Xinlei Xu  
Residence: 6-6-602, Tiantongyuan Zhong Yuan  
Changping  
Beijing, 102218  
China (People's Republic)  
Mailing Address: Same as Above  
Citizenship: CN

I Lei Sun (name) whose residential address is  
71F, Block D, Tsinghua Science Park, Haidian District, Beijing, P. R. C.  
was personally present and did see Xinlei Xu (name of person signing the assignment)  
who is personally known to me, execute the above assignment.

Lei Sun (signature of first witness)

Signed at 71F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

I Zhihui Qiu (name) whose residential address is  
71F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Xinlei Xu (name of person signing the assignment)  
who is personally known to me, execute the above assignment.

Zhihui Qiu (signature of second witness)

Signed at 71F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

**ASSIGNMENT**

**WHEREAS**, I, Shaogin Gong, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

**METHOD AND DEVICE OF DATA REBUILDING IN STORAGE SYSTEM**

which is further identified by Attorney Docket Number 1003-707;

**WHEREAS**, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, desires to acquire an interest therein in accordance with agreements duly entered into with me;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-707  
Client Docket No.: 109920.02

**AND**, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

**AND** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

( 16/249,191 , filed 1/16/2019 )

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 12-21, 2018

Shaoqin Gong

Inventor's Signature

Legal name of inventor: Shaoqin Gong  
Residence: 2-5-504 ShouKaiZhiHuiShe  
Changping District  
Beijing, 102200  
China (People's Republic)  
Mailing Address: Same as Above  
Citizenship: CN

I Lei Sun (name) whose residential address is  
7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Shaoqin Gong (name of person signing the  
assignment) who is personally known to me, execute the above assignment.

Lei Sun (signature of first witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12-21 of 20 18. (date of signature)

I Zhitui Qiu (name) whose residential address is  
7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Shaoqin Gong (name of person signing the  
assignment) who is personally known to me, execute the above assignment.

Zhitui Qiu (signature of second witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12-21 of 20 18 (date of signature)

**ASSIGNMENT**

**WHEREAS**, I, Baote Zhuo, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

**METHOD AND DEVICE OF DATA REBUILDING IN STORAGE SYSTEM**

which is further identified by Attorney Docket Number 1003-707;

**WHEREAS**, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, desires to acquire an interest therein in accordance with agreements duly entered into with me;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-707  
Client Docket No.: 109920.02

**AND**, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

**AND** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

( 16/249,191 , filed 1/16/2019 )

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.



Date: 2018.12.21

Baote Zhuo

Inventor's Signature

Legal name of inventor: Baote Zhuo  
Residence: 3-602, Building 16, AnShunBeiLi  
Tongzhou District  
Beijing, 101100  
China (People's Republic)  
Mailing Address: Same as Above  
Citizenship: CN

I Lei Sun (name) whose residential address is

7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.

was personally present and did see Baote Zhuo (name of person signing the assignment) who is personally known to me, execute the above assignment.

Lei Sun (signature of first witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

I Zhitui Qiu (name) whose residential address is

7/F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.

was personally present and did see Baote Zhuo (name of person signing the assignment) who is personally known to me, execute the above assignment.

Zhitui Qiu (signature of second witness)

Signed at 7/F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

PATENT ASSIGNMENT  
Attorney Docket No.: 1003-707  
Client Docket No.: 109920.02

**ASSIGNMENT**

**WHEREAS**, I, Haiying Tang, as the original inventor or an original joint inventor have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled

**METHOD AND DEVICE OF DATA REBUILDING IN STORAGE SYSTEM**

which is further identified by Attorney Docket Number 1003-707;

**WHEREAS**, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of the state of Delaware and having a usual place of business at 176 South Street, Hopkinton, MA, 01748, USA, desires to acquire an interest therein in accordance with agreements duly entered into with me;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

**AND**, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

**AND**, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

**AND** I hereby authorize the attorneys at Bainwood Huang & Associates LLC to insert here in parentheses

( 16/249,191 , filed 1/16/2019 )

the application number and filing date of said application (or foreign counterpart application) to facilitate the recording or other official processing of this Assignment.

Date: 2018.12.21

Haiying Tang  
Inventor's Signature

Legal name of inventor: Haiying Tang  
Residence: 401, Building Bing 901  
Zhongguancun Hangtian Community  
Haidian District  
Beijing, 100190  
China (People's Republic)  
Mailing Address: Same as Above  
Citizenship: CN

I Lei Sun (name) whose residential address is  
71F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Haiying Tang (name of person signing the  
assignment) who is personally known to me, execute the above assignment.

Lei Sun (signature of first witness)

Signed at 71F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)

I Zhihui Qiu (name) whose residential address is  
71F, Block D, Tsinghua Science Park, Haidian District, Beijing, P.R.C.  
was personally present and did see Haiying Tang (name of person signing the  
assignment) who is personally known to me, execute the above assignment.

Zhihui Qiu (signature of second witness)

Signed at 71F, Block D, Tsinghua Science Park (location of witness signature)

on this day 12.21 of 2018. (date of signature)