

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5347584

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
BAOTE ZHUO	12/17/2018
GENG HAN	12/17/2018
JIBING DONG	12/17/2018
JIAN GAO	12/17/2018
XINLEI XU	12/17/2018
RECEIVING PARTY DATA	
Name:	EMC IP HOLDING COMPANY LLC
Street Address:	176 SOUTH STREET
City:	HOPKINTON
State/Country:	MASSACHUSETTS
Postal Code:	01748
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16223830
CORRESPONDENCE DATA	
Fax Number:	(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>	
Phone:	508-616-2900
Email:	Docket@BainwoodHuang.com
Correspondent Name:	BAINWOOD, HUANG & ASSOCIATES, LLC
Address Line 1:	2 CONNECTOR ROAD
Address Line 4:	WESTBOROUGH, MASSACHUSETTS 01581
ATTORNEY DOCKET NUMBER:	1003-625
NAME OF SUBMITTER:	DAVID E. HUANG, ESQ.
SIGNATURE:	/David E. Huang, Reg. No. 39,229/
DATE SIGNED:	01/29/2019
Total Attachments: 15	
source=1003-625-lnv1-assignment-ZHUO#page1.tif	

source=1003-625-Inv1-assignment-ZHUO#page2.tif
source=1003-625-Inv1-assignment-ZHUO#page3.tif
source=1003-625-Inv2-assignment-HAN#page1.tif
source=1003-625-Inv2-assignment-HAN#page2.tif
source=1003-625-Inv2-assignment-HAN#page3.tif
source=1003-625-Inv3-assignment-DONG#page1.tif
source=1003-625-Inv3-assignment-DONG#page2.tif
source=1003-625-Inv3-assignment-DONG#page3.tif
source=1003-625-Inv4-assignment-GAO#page1.tif
source=1003-625-Inv4-assignment-GAO#page2.tif
source=1003-625-Inv4-assignment-GAO#page3.tif
source=1003-625-Inv5-assignment-XU#page1.tif
source=1003-625-Inv5-assignment-XU#page2.tif
source=1003-625-Inv5-assignment-XU#page3.tif

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

A METHOD, APPARATUS AND COMPUTER PROGRAM PRODUCT FOR FAILURE RECOVERY OF STORAGE SYSTEM

which is further identified by Attorney Docket Number 1003-625;

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

(16/223,836 , filed 12/18/18)

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: 2018.12.17

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 Chun Liu (name) whose residential address is
7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC
was personally present and did see Baote Zhuo (name of person signing the
assignment) who is personally known to me, execute the above assignment.

Chun Liu (signature of first witness)

Signed at 7F, Block D, Tsinghua Science Park Haidian District, Beijing, PRC
(location of witness signature)

on this day 12/17 of 2018. (date of signature)

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

Zhihui Qiu (signature of second witness)

Signed at 7F, Block D, Tsinghua Science Park Haidian District, Beijing, PRC
(location of witness signature)

on this day 12/18 of 2018. (date of signature)

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

A METHOD, APPARATUS AND COMPUTER PROGRAM PRODUCT FOR FAILURE RECOVERY OF STORAGE SYSTEM

which is further identified by Attorney Docket Number 1003-625;

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

(16/223,830 , filed 12/18/18)

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: 2018.12.17

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 Chun Hua (name) whose residential address is
7F, 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.

Chun Hua (signature of first witness)
Signed at 7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)
on this day 12/17 of 2018. (date of signature)

I Zhitun Qin (name) whose residential address is
7F, 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.

Zhitun Qin (signature of second witness)
Signed at 7F, Block D, Tsinghua Science Park, Haidian District, Beijing (location of witness signature)
on this day 12.18 of 2018. (date of signature) PRC

ASSIGNMENT

WHEREAS, I, Jibing Dong, 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

A METHOD, APPARATUS AND COMPUTER PROGRAM PRODUCT FOR FAILURE RECOVERY OF STORAGE SYSTEM

which is further identified by Attorney Docket Number 1003-625;

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

(16/223830 , filed 12/18/18)

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: 2018/12/17.

Jibing Dong
Inventor's Signature

Legal name of inventor: Jibing Dong
Residence: #5-2-2903, Zhong Jian Guo Ji GanG
Xing Hua Road, Daxing District
Beijing, 1002600
China (People's Republic)
Mailing Address: Same as Above
Citizenship: CN

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

Chun Ma (signature of first witness)
Signed at 7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)
on this day 12/17 of 20 18. (date of signature)

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

Zhihui Qiu (signature of second witness)
Signed at 7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)
on this day 12.18 of 20 18 (date of signature) PRC

ASSIGNMENT

WHEREAS, I, Jian Gao, 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

A METHOD, APPARATUS AND COMPUTER PROGRAM PRODUCT FOR FAILURE RECOVERY OF STORAGE SYSTEM

which is further identified by Attorney Docket Number 1003-625;

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;

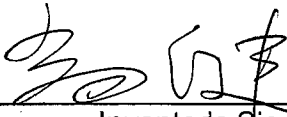
AND, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives;

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

(16/223,830 , filed 12/18/18)

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: 2018.12.17



Inventor's Signature

Legal name of inventor: Jian Gao
Residence: 3-1-705, Lianhuahe Bei Street 11
Xicheng District
Beijing, 100000
China (People's Republic)
Mailing Address: Same as Above
Citizenship: CN

I Chun Ma (name) whose residential address is
77, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC
was personally present and did see Jian Gao (name of person signing the assignment)
who is personally known to me, execute the above assignment.

Chun Ma (signature of first witness)

Signed at 77, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)

on this day 12/17 of 2018. (date of signature)

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

Zhitui Qiu (signature of second witness)

Signed at 7F, Block b, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)

on this day 12.18 of 2018. (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

A METHOD, APPARATUS AND COMPUTER PROGRAM PRODUCT FOR FAILURE RECOVERY OF STORAGE SYSTEM

which is further identified by Attorney Docket Number 1003-625;

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

(16/223,830 , filed 12/18/18)

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: 2018.12.17

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 Chun Ma (name) whose residential address is
7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC
was personally present and did see Xinlei Xu (name of person signing the assignment)
who is personally known to me, execute the above assignment.

Chun Ma (signature of first witness)
Signed at 7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)
on this day 12/17 of 2018. (date of signature)

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

Zhotun Oiu (signature of second witness)
Signed at 7F, Block D, Tsinghua Science Park, Haidian District, Beijing, PRC (location of witness signature)
on this day 12.18 of 2018. (date of signature)