

PATENT ASSIGNMENT

Electronic Version v1.1
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SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Guangxin Yang</td> <td>12/19/2012</td> </tr> <tr> <td>Yi Ren</td> <td>12/19/2012</td> </tr> <tr> <td>Jianwang Ao</td> <td>12/19/2012</td> </tr> <tr> <td>Caleb E. Welton</td> <td>12/19/2012</td> </tr> </tbody> </table>		Name	Execution Date	Guangxin Yang	12/19/2012	Yi Ren	12/19/2012	Jianwang Ao	12/19/2012	Caleb E. Welton	12/19/2012
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<table border="1"> <tr> <td>Name:</td> <td>EMC Corporation</td> </tr> <tr> <td>Street Address:</td> <td>176 South Street</td> </tr> <tr> <td>City:</td> <td>Hopkinton</td> </tr> <tr> <td>State/Country:</td> <td>MASSACHUSETTS</td> </tr> <tr> <td>Postal Code:</td> <td>01748</td> </tr> </table>		Name:	EMC Corporation	Street Address:	176 South Street	City:	Hopkinton	State/Country:	MASSACHUSETTS	Postal Code:	01748
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PROPERTY NUMBERS Total: 1											
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CORRESPONDENCE DATA											
<p>Fax Number: 4085621417 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 408-562-1446 Email: jeannie.wu@emc.com Correspondent Name: Deanna Santos EMC Corporation Address Line 1: 2831 Mission College Boulevard Address Line 4: Santa Clara, CALIFORNIA 95054</p>											
ATTORNEY DOCKET NUMBER:	EMC-12-689										
NAME OF SUBMITTER:	Victor Huang, Reg. No. 60,050										
<p>Total Attachments: 6 source=EMC-12-689_EXECUTED_Assignment-f#page1.tif</p>											

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ASSIGNMENT

WHEREAS, we, Yi Ren, Guangxin Yang, Jianwang Ao, and Caleb E. Welton 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 EFFICIENT SAMPLING WITH REPLACEMENT, the specification of which:

☒ is being executed on even date herewith and is about to be filed in the United States Patent Office;

☐ was filed on _____ as U.S. Application No. _____;

☐ was patented under U.S. Patent No. _____ on _____.

WHEREAS, EMC Corporation (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts and having a usual place of business at 176 South Street, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

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, we 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 us had this assignment and sale not been made; we 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. We 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;

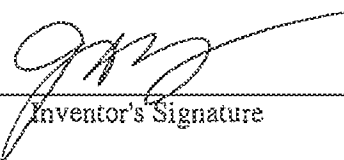
AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, 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, we 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.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals as set forth below:

Date: December 19, 2012


Inventor's Signature

Print full name of second inventor:

Guangxin Yang

Residence:

Beijing, China (People's Republic) 100084

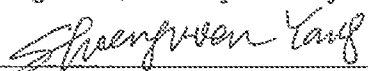
Citizenship:

China (People's Republic)

Mailing Address:

8 Lize West Street, Building 8
Apt. 1-2801, Chaoyang District
Beijing, China (People's Republic) 100084

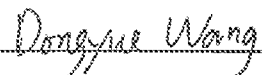
I Shengwen Yang (name) whose residential address is
Room 801, Building 7, JinDianHuaYuan, Haidian District, Beijing China 100082
was personally present and did see Guangxin Yang (name of person signing
the assignment) who is personally known to me, execute the above assignment.


(signature of first witness)

Signed at EMC Beijing Office (location of witness signature)

on this day December 19 of 20 12, (date of signature)

I Dongyue Wang (name) whose residential address is
Room 1301, Building 13, NO.15 AnNingZhuang Road Haidian District China 100085
was personally present and did see Guangxin Yang (name of person signing
the assignment) who is personally known to me, execute the above assignment.


(signature of second witness)

Signed at EMC Beijing Office (location of witness signature)

on this day December 19 of 20 12, (date of signature)

Date: December 19, 2012

Yi Ren

Inventor's Signature

Print full name of first inventor:

Yi Ren

Residence:

Beijing, China (People's Republic) 100012

Citizenship:

China (People's Republic)

Mailing Address:

Room 2301, Building 15, Xiuju Yuan

Beiyuanjiayuan, Chaoyang District

Beijing, China (People's Republic) 100012

I Shengwen Yang (name) whose residential address is
Room 801, Building 7, JinDianHuaYuan, Haidian District, Beijing China 100082

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

Shengwen Yang (signature of first witness)

Signed at EMC Beijing Office (location of witness signature)

on this day December 19 of 20 12 (date of signature)

I Dongyue Wang (name) whose residential address is
Room 1301, Building 13, NO.15 AnNingZhuang Road Haidian District China 100085

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

Dongyue Wang (signature of second witness)

Signed at EMC Beijing Office (location of witness signature)

on this day December 19 of 20 12 (date of signature)

Date: December 19, 2012

Jianwang Ao
Inventor's Signature

Print full name of third inventor:

Jianwang Ao

Residence:

Beijing, China (People's Republic) 100084

Citizenship:

China (People's Republic)

Mailing Address:

8/F Block D, Tsinghua Science Park,

No.1 Zhongguancun East Road

Beijing, China (People's Republic) 100084

I Shengwen Yang (name) whose residential address is
Room 801, Building 7, JinDianHuaYuan, Haidian District, Beijing China 100082
was personally present and did see Jianwang Ao (name of person signing
the assignment) who is personally known to me, execute the above assignment.

Shengwen Yang (signature of first witness)

Signed at EMC Beijing Office (location of witness signature)

on this day December 19 of 2012, (date of signature)

I Dongyue Wang (name) whose residential address is
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the assignment) who is personally known to me, execute the above assignment.

Dongyue Wang (signature of second witness)

Signed at EMC Beijing Office (location of witness signature)

on this day December 19 of 2012, (date of signature)

Date: 12/19/2012

[Signature]
Inventor's Signature

Print full name of fourth inventor: Caleb E. Welton
Residence: Foster City, CA 94404
Citizenship: USA
Mailing Address: 744 Edgewater Boulevard - Apt. 301
Foster City, CA 94404

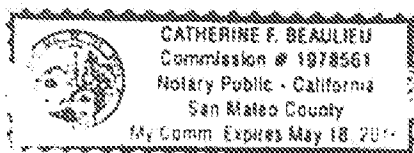
STATE OF
COUNTY OF

California
San Mateo

On this 19 day of December, 2012, before me appeared Caleb E. Welton
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~
subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same
in his/~~her/their~~ authorized capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument
the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Catherine F. Beauclieu
Notary Public

Print Name: Catherine F. Beauclieu
My Commission expires 5/18/2016