

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3628083

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
MANISH J. BUTTE	05/22/2009
EMANUEL CARRILHO	05/15/2009
YANYAN LIU	06/12/2009
ANDRES W. MARTINEZ	05/14/2009
KATHERINE A. MIRICA	05/14/2009
SCOTT T. PHILLIPS	05/21/2009
HAYAT SINDI	07/06/2009
SAMUEL W. III THOMAS	05/15/2009
SARAH JANE VELLA	05/14/2009
GEORGE M. WHITESIDES	05/24/2009
AMY P. WONG	05/14/2009

**RECEIVING PARTY DATA**

<b>Name:</b>	President and Fellows of Harvard College
<b>Street Address:</b>	17 Quincy Street
<b>City:</b>	Cambridge
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	02138

**PROPERTY NUMBERS Total: 1**

Property Type	Number
<b>Application Number:</b>	14945983

**CORRESPONDENCE DATA**

**Fax Number:** (617)432-2788

*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.*

**Phone:** (617) 432-0920

**Email:** janet\_maher@harvard.edu

**Correspondent Name:** ANNE CRAIG

**Address Line 1:** 1350 MASSACHUSETTS AVE

**Address Line 2:** HARVARD UNIVERSITY, OFFICE OF TECH. DEV.

**Address Line 4:** CAMBRIDGE, MASSACHUSETTS 02138

PATENT

<b>ATTORNEY DOCKET NUMBER:</b>	2819
<b>NAME OF SUBMITTER:</b>	ANNE CRAIG
<b>SIGNATURE:</b>	/aic/
<b>DATE SIGNED:</b>	11/23/2015

**Total Attachments: 62**

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## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

(hereafter "Assignors") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous  
Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.


Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

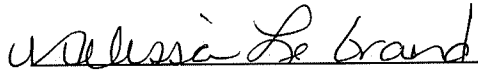
Date: 5/24/09

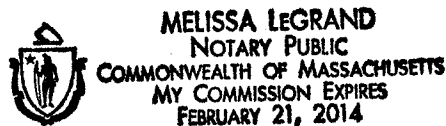
  
George M. Whitesides

State of: Massachusetts  
County of: Middlesex

On this 24 day of may, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were US PASSPORT, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

  
Notary Public



Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public



Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

(hereafter "Assignors") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous  
Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

George M. Whitesides

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: 5/21/09

Scott T. Phillips  
**Scott T. Phillips**

State of: Pennsylvania

County of: Centre

On this 21 day of May, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were PA Driver License to be the person whose name is signed on the preceding or attached document in my presence.

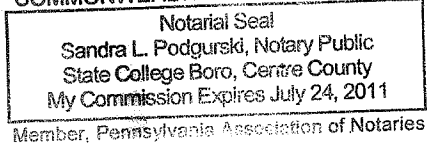
[SEAL]

COMMONWEALTH OF PENNSYLVANIA



Sandra L. Podgurski  
Notary Public

COMMONWEALTH OF PENNSYLVANIA



Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

**Patent Assignment**

**HU Case: 2819 Whitesides**

**Appln. No(s): PCT/US07/081848 & US App 12/425,121**

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public



Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

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Katherine A. Mirica, & Yanyan Liu**

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Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: 5/14/2009

Andres W. Martinez  
Andres W. Martinez

State of: Massachusetts  
County of: Middlesex

On this 14 day of May, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were CA drivers license, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

Melissa LeGrand  
Notary Public



MELISSA LEGRAND  
NOTARY PUBLIC  
COMMONWEALTH OF MASSACHUSETTS  
MY COMMISSION EXPIRES  
FEBRUARY 21, 2014

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: 5/14/2009

Katherine A. Mirica  
**Katherine A. Mirica**

State of: Massachusetts

County of: Middlesex

On this 14 day of May, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were MA drivers license, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

Melissa Le Grand  
Notary Public



**MELISSA LeGRAND**  
NOTARY PUBLIC  
COMMONWEALTH OF MASSACHUSETTS  
MY COMMISSION EXPIRES  
FEBRUARY 21, 2014

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public



## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

(hereafter "Assignors") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous  
Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: 5-22-09

  
**Manish J. Butte**

State of: Massachusetts

County of: Middlesex

On this 22 day of MAY, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were MA drivers License, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

  
Notary Public



**MELISSA LEGRAND**  
NOTARY PUBLIC  
COMMONWEALTH OF MASSACHUSETTS  
MY COMMISSION EXPIRES  
FEBRUARY 21, 2014

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

(hereafter "Assignors") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous  
Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its



representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: 5/14/09

Amy P. Wong  
Amy Wong

WITNESSED BY:

Date: 5/12/09

[Signature]  
Signature of Witness

Abel Wong  
Name of Witness

4450 Enterprise St  
Address  
Fremont, CA 94538

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

(hereafter "Assignors") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public



Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
 HU Case: 2819 Whitesides  
 Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

Amy Wong

State of: California

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
 Notary Public

Date: 05/15/09

Samuel Thomas  
**Samuel Thomas**

State of: Massachusetts

County of: Middlesex

On this 15 day of May, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were MA Drivers License, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

Melissa LeGrand  
 Notary Public



MELISSA LEGRAND  
 NOTARY PUBLIC  
 COMMONWEALTH OF MASSACHUSETTS  
 MY COMMISSION EXPIRES  
 FEBRUARY 21, 2014

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

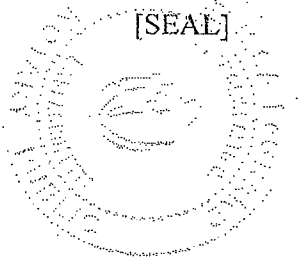
Patent Assignment  
 HU Case: 2819 Whitesides  
 Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: MAY 15, 2009

Emanuel Carrilho  
**Emanuel Carrilho**

State of: Massachusetts  
 County of: Middlesex

On this 15 day of MAY, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were Brazil Passport, to be the person whose name is signed on the preceding or attached document in my presence.



Melissa LeGrand  
 Notary Public



**MELISSA LEGRAND**  
 NOTARY PUBLIC  
 COMMONWEALTH OF MASSACHUSETTS  
 MY COMMISSION EXPIRES  
 FEBRUARY 21, 2014

Date: \_\_\_\_\_

Katherine A. Mirica

State of: Massachusetts  
 County of: \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
 Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public,  
personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of  
identification, which were \_\_\_\_\_, to be the person whose name is  
signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

(hereafter "Assignors") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous  
Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public



Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts

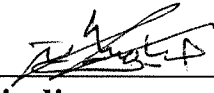
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: July 6th, 2009

  
**Hayat Sindi**

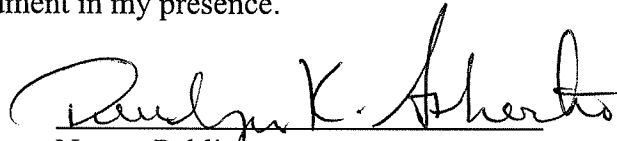
State of: Massachusetts  
County of: \_\_\_\_\_

On this 6 day of July, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were Harvard ID, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]



**DENLYN K. ATHERTON**  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires  
October 1, 2015

  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

**George M. Whitesides, Scott T. Phillips, Andres W. Martinez,  
Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

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17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignors' entire right, title and interest throughout the world in and to any and all inventions and improvements for:

**"Lateral Flow And Flow-Through Bioassay Based On Patterned Porous  
Media, Methods Of Making Same, And Methods Of Using Same"**

described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

Assignors hereby warrant that they have full right to convey their entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: May 14, 2009

Sarah Jane Vella  
**Sarah Jane Vella**

PROVINCE ONTARIO  
State of: Massachusetts  
County of: ESSEX

On this 14 day of MAY, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were DRIVER'S LICENSE, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

James J. Yaworsky  
Notary Public

**JAMES J. YAWORSKY**  
**BARRISTER, SOLICITOR,**  
**NOTARY PUBLIC**  
**WINDSOR, ONTARIO, CANADA**



Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Patent Assignment  
HU Case: 2819 Whitesides  
Appln. No(s): PCT/US07/081848 & US App 12/425,121

Date: \_\_\_\_\_

\_\_\_\_\_  
**Yanyan Liu**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

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Manish J. Butte, Amy Wong, Samuel Thomas, Hayat Sindi,  
Sarah Jane Vella, Emanuel Carrilho,  
Katherine A. Mirica, & Yanyan Liu**

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17 Quincy Street, Cambridge, Massachusetts 02138**

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described in U.S. Patent Application No. 12/425,121 filed April 16, 2009 and international patent application No.: PCT/US07/081848 filed October 18, 2007 which both claim priority to US Provisional Patent Application No. 60/914,252 filed April 26, 2007 and US Provisional Patent Application No. 60/852,751 filed October 18, 2006; and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application filed in this and any foreign country based thereon, including the right to file said applications and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention or inventions and any divisional, continuation, continuation-in-part or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

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Assignors further agree, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its

representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Date: \_\_\_\_\_

\_\_\_\_\_  
**George M. Whitesides**

State of: Massachusetts  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **George, M. Whitesides**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Scott T. Phillips**

State of: Pennsylvania  
County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Scott T. Phillips**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Andres W. Martinez**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Andres W. Martinez**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Manish J. Butte**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Manish, J. Butte**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Amy Wong**

State of: California

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Amy Wong**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Samuel Thomas**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Samuel Thomas**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Hayat Sindi**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Hayat Sindi**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Sarah Jane Vella**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Sarah Jane Vella**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Emanuel Carrilho**

State of: Massachusetts

County of: \_\_\_\_\_

On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Emanuel Carrilho**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public

Date: \_\_\_\_\_

\_\_\_\_\_  
**Katherine A. Mirica**

State of: Massachusetts

County of: \_\_\_\_\_


On this \_\_\_\_ day of \_\_\_\_\_, 2009, before me, the undersigned notary public, personally appeared **Katherine A. Mirica**, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

\_\_\_\_\_  
Notary Public



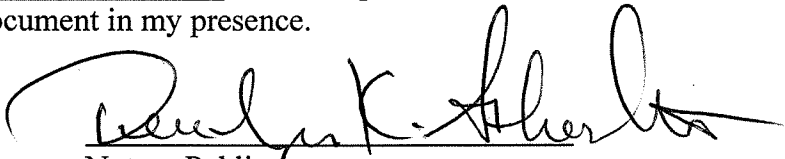
Date: Jun 12th. 2009

  
\_\_\_\_\_  
Yanyan Liu

State of: Massachusetts  
County of: Middlesex

On this 12 day of June, 2009, before me, the undersigned notary public, personally appeared **Yanyan Liu**, proved to me through satisfactory evidence of identification, which were Harvard ID, to be the person whose name is signed on the preceding or attached document in my presence.

[SEAL]

  
\_\_\_\_\_  
Notary Public



**DENLYN K. ATHERTON**  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires  
October 1, 2015