504868066 04/13/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4914806

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
GNUBIO INC	05/08/2017

RECEIVING PARTY DATA

Name:	BIO-RAD LABORATORIES, INC
Street Address:	1000 ALFRED NOBEL DRIVE
City:	HERCULES
State/Country:	CALIFORNIA
Postal Code:	94547

PROPERTY NUMBERS Total: 1

Property Type	Number		
Application Number:	15822742		

CORRESPONDENCE DATA

Fax Number: (510)741-4048

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: 5107416332

Email: jessie_flores@bio-rad.com

Correspondent Name: NAISHADH DESAI, PH.D.

Address Line 1: BIO-RAD LABORATORIES, INC

Address Line 2: 1000 ALFRED NOBEL DRIVE

Address Line 4: HERCULES, CALIFORNIA 94547

NAME OF SUBMITTER:	NAISHADH N. DESAI
SIGNATURE:	/Naishadh N. Desai/
DATE SIGNED:	04/13/2018

Total Attachments: 13

source=Assignment_GnuBioTOBioRad#page1.tif source=Assignment_GnuBioTOBioRad#page2.tif source=Assignment_GnuBioTOBioRad#page3.tif source=Assignment_GnuBioTOBioRad#page4.tif source=Assignment_GnuBioTOBioRad#page5.tif source=Assignment_GnuBioTOBioRad#page6.tif

PATENT 504868066 REEL: 045534 FRAME: 0943



ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, **GnuBIO Inc.** ("ASSIGNOR") has sold, assigned, and transferred and does hereby sell, assign, and transfer to **Bio-Rad Laboratories, Inc.**, a Delaware corporation, having a place of business at 1000 Alfred Nobel Drive, Hercules, California 94547 ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

- 1. The entire worldwide right, title, and interest in and to:
 (a) the patents and applications identified on the attached Schedule 1 ("the PATENTS"); (b) all applications claiming priority from the PATENTS; (c) all provisional, utility, divisional, continuation, substitute, renewal, reissue, and other applications related thereto that have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) that may be granted on the applications set forth in (a), (b), and (c) above; and (e) all right of priority in the PATENTS and in any underlying provisional or foreign application, together with all rights to recover damages for infringement, including damages for provisional rights; and
- 2. The entire worldwide right, title, and interest in all inventions and improvements ("the SUBJECT MATTER") that are disclosed in the PATENTS, including all provisional and non-provisional applications filed under 35 U.S.C. § 111, design applications filed under 35 § 171, international applications filed under the Patent Cooperation Treaty (PCT), and U.S. national phase applications filed under 35 U.S.C. § 371 ("the APPLICATIONS").

ASSIGNOR agrees that ASSIGNEE may apply for and receive patents in ASSIGNEE's own name.

ASSIGNOR agrees to do the following, when requested, and without further consideration, in order to carry out the intent of this Assignment: (1) execute all oaths, assignments, powers of attorney, applications, and other papers necessary or desirable to fully secure to ASSIGNEE the rights, titles and interests herein conveyed; (2) communicate to ASSIGNEE all known facts relating to the SUBJECT MATTER; and (3) generally do all lawful acts that ASSIGNEE shall consider desirable for securing, maintaining, and enforcing worldwide patent protection relating to the SUBJECT MATTER, the APPLICATIONS and the PATENTS and for vesting in ASSIGNEE the rights, titles, and interests herein conveyed. ASSIGNOR further agrees to provide any successor, assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE hereunder.

ASSIGNOR represents that ASSIGNOR has the rights, titles, and interests to convey as set forth herein, and covenants with ASSIGNEE that the ASSIGNOR has not made and will not hereafter make any assignment, grant, mortgage, license, or other agreement affecting the rights, titles, and interests herein conveyed.

ASSIGNOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

ASSIGNOR

John J. Cassingham

GnuBIO Inc.

Vice President, Treasurer and Secretary

Date of Signature

May 8, 2017

Assignee hereby accepts this Assignment

Name: Timothy S. Ernst

EVP, General Counsel and Secretary

Bio-Rad Laboratories, Inc.

Dated: May 8, 2017

SCHEDULE 1

ASSIGNED PATENTS AND PATENT APPLICATIONS

TITLE	COUNTRY	APPLICATION NUMBER	FILING DATE	PATENT NUMBER ISSUE DATE
A METHOD FOR BLOCKING POLYMERASE EXTENSION OF 3 PRIME	United States of America	61/816,431	Apr 26, 2013	NOWIDER BEEF DATES
DNA ENDS BY STEM-LOOP STRUCTURE A METHOD FOR	China	201490022707.9		
BLOCKING POLYMERASE EXTENSION OF 3 PRIME DNA ENDS BY STEM-LOOP STRUCTURE		201480023706,8	Apr 28, 2014	
A METHOD FOR BLOCKING POLYMERASE EXTENSION OF 3 PRIME DNA ENDS BY STEM-LOOP STRUCTURE	European Patent Office	14787882.1	Apr 28, 2014	
A METHOD FOR BLOCKING POLYMERASE EXTENSION OF 3 PRIME DNA ENDS BY STEM-LOOP STRUCTURE	United States of America	14/786,365	Apr 28, 2014	
A METHOD FOR BLOCKING POLYMERASE EXTENSION OF 3 PRIME DNA ENDS BY STEM-LOOP STRUCTURE	PCT	PCT/US2014/035730	Apr 28, 2014	
CASCADED ADDITION OF TARGET SPECIFIC UNIVERSAL ADAPTERS TO NUCLEIC ACIDS	United States of America	14/377,964	Feb 8, 2013	
CASCADED ADDITION OF TARGET SPECIFIC UNIVERSAL ADAPTERS TO NUCLEIC ACIDS	United States of America	61/598,442	Feb 14, 2012	
CASCADED ADDITION OF TARGET SPECIFIC UNIVERSAL ADAPTERS TO NUCLEIC ACIDS	РСТ	PCT/US2013/025274	Feb 8, 2013	

PATENT	FILING	<u>APPLICATION</u>		
NUMBER ISSUE DA	<u>DATE</u>	<u>NUMBER</u>	COUNTRY	TIPLE
	Nov 6,	62/076,316	United	DROPLET VELOCITY
	2014		States of America	DETECTION
	Nov 4,	14/932,537	United	DROPLET VELOCITY
	2015		States of America	DETECTION
	Nov 4, 2015	PCT/US2015/059071	PCT	DROPLET VELOCITY DETECTION
	Jun 30,	PCT/US2015/038525	PCT	FLOATING THERMAL
	2015	1		CONTACT ENABLED PCR
	Jun 30,	14/755,941	United	FLOATING THERMAL
	2015		States of America	CONTACT ENABLED PCR
	Jun 30,	62/018,893	United	FLOATING THERMAL
	2014		States of America	CONTACT ENABLED PCR
	June 30,	201580036116	China	FLOATING THERMAL
12/9/2016	2015	150151175	D	CONTACT ENABLED PCR
12/8/2016	June 30, 2015	158151175	European Patent Office	FLOATING THERMAL CONTACT ENABLED PCR
	Nov 27,	61/909,543	United	FORCED DROPLET
	2013		States of	PACKING IN LARGE
	1.5.50	2012225712	America	MICROFLUIDIC CHANNELS
	Mar 28, 2012	2012236713	Australia	INJECTION OF MULTIPLE VOLUMES INTO OR OUT
	2012			OF DROPLETS
	Mar 28,	2,841,430	Canada	INJECTION OF MULTIPLE
	2012			VOLUMES INTO OR OUT OF DROPLETS
	Mar 28,	2012800257560	China	INJECTION OF MULTIPLE
	2012			VOLUMES INTO OR OUT OF DROPLETS
	Mar 28,	12762825.3	European	INJECTION OF MULTIPLE
	2012		Patent Office	VOLUMES INTO OR OUT OF DROPLETS
	Mar 28,	2014-502727	Japan	INJECTION OF MULTIPLE
	2012			VOLUMES INTO OR OUT OF DROPLETS
193436 Apr 18, 2	Mar 28, 2012	2013068812	Singapore	INJECTION OF MULTIPLE VOLUMES INTO OR OUT OF DROPLETS
	Mar 30, 2011	61/469,528	United States of	Multiple picoinjection
	,	61/469,528		Multiple picoinjection

		APPLICATION	FILING	PATENT	
<u>orte</u>	COUNTRY	NUMBER	DATE	NUMBER	ISSUE DATE
INJECTION OF MULTIPLE	United	14/008,998	Mar 28,		
VOLUMES INTO OR OUT	States of		2012		
OF DROPLETS	America				
INJECTION OF MULTIPLE	PCT	PCT/US2012/030811	Mar 28,		
VOLUMES INTO OR OUT			2012		
OF DROPLETS					
INTEGRATED	China	201380058284.3	Sep 12,		
MICROFLUIDIC SYSTEM,			2013		
METHOD AND KIT FOR					
PERFORMING ASSAYS					
INTEGRATED	European	13837228.9	Sep 12,		<u> </u>
MICROFLUIDIC SYSTEM,	Patent		2013		
METHOD AND KIT FOR	Office				
PERFORMING ASSAYS					
INTEGRATED	United	14/427,404	Sep 12,	· · · · · · · · · · · · · · · · · · ·	
MICROFLUIDIC SYSTEM,	States of	1	2013		
METHOD AND KIT FOR	America				
PERFORMING ASSAYS		<u> </u>			
INTEGRATED	United	61/700,099	Sep 12,		
MICROFLUIDIC SYSTEM,	States of	01/100,055	2012		
METHOD AND KIT FOR	America		2412		
PERFORMING ASSAYS					
INTEGRATED	PCT	PCT/US2013/059517	Sep 12,		
MICROFLUIDIC SYSTEM,		201,00201000011	2013		
METHOD AND KIT FOR			2010		,
PERFORMING ASSAYS					
LOW COST OPTICAL HIGH	United	61/828,597	May 29,		
SPEED DISCRETE	States of		2013		
MEASUREMENT SYSTEM	America				
LOW COST OPTICAL HIGH	China	201480030968.7	May 29,	·	
SPEED DISCRETE			2014		
MEASUREMENT SYSTEM					
LOW COST OPTICAL HIGH	European	14804738.4	May 29,		
SPEED DISCRETE	Patent	1	2014		
MEASUREMENT SYSTEM	Office		2011		
LOW COST OPTICAL HIGH	Hong Kong	16107083.5	May 29,		<u> </u>
SPEED DISCRETE	~~~~	1010,000,0	2014		
MEASUREMENT SYSTEM			2017		
LOW COST OPTICAL HIGH	United	14/289,982	May 29,		
SPEED DISCRETE	States of	1 ., 205,502	2014		
MEASUREMENT SYSTEM	America		2017		
LOW COST OPTICAL HIGH	PCT	PCT/US2014/039942	May 29,		
SPEED DISCRETE		1 01/002017/00/77/2	2014		
MEASUREMENT SYSTEM			2017		
TILLIOUGHILL DIDILLY		<u> </u>			_l

	General Services	<u>APPLICATION</u>	FILING	PATENT	Silver State State Control
TITLE	COUNTRY	NUMBER	DATE	NUMBER	ISSUE DATE
MANAGING VARIATION IN	United	61/469,900	Mar 31,		IDBOD DITTE
SPECTROSCOPIC	States of	,	2011		
INTENSITY	America				
MEASUREMENTS					
THROUGH THE USE OF A					
REFERENCE COMPONENT					
MANAGING VARIATION IN	Germany	12764041.5	Mar 28,	602012014172.7	Jan 20, 2016
SPECTROSCOPIC			2012	00201201,	Jun 20, 2010
INTENSITY					
MEASUREMENTS					
THROUGH THE USE OF A					
REFERENCE COMPONENT					
MANAGING VARIATION IN	European	12764041,5	Mar 28,	2691540	Jan 20, 2016
SPECTROSCOPIC	Patent		2012	2031010	Jun 20, 2010
INTENSITY	Office				
MEASUREMENTS					
THROUGH THE USE OF A					
REFERENCE COMPONENT					
MANAGING VARIATION IN	France	12764041.5	Mar 28,	2691540	Jan 20, 2016
SPECTROSCOPIC			2012	20,1210	Jun 20, 2010
INTENSITY					
MEASUREMENTS					
THROUGH THE USE OF A					
REFERENCE COMPONENT					
MANAGING VARIATION IN	United	12764041.5	Mar 28,	2691540	Jan 20, 2016
SPECTROSCOPIC	Kingdom		2012	20,1210	Jun 20, 2010
INTENSITY					· ·
MEASUREMENTS					
THROUGH THE USE OF A					
REFERENCE COMPONENT					
MANAGING VARIATION IN	United	14/008,990	Mar 28,		· · · · · · · · · · · · · · · · · · ·
SPECTROSCOPIC	States of	,	2012		
INTENSITY	America				
MEASUREMENTS					
THROUGH THE USE OF A					
REFERENCE COMPONENT					
MANAGING VARIATION IN	PCT	PCT/US2012/030909	Mar 28,		
SPECTROSCOPIC			2012		
INTENSITY			2012		
MEASUREMENTS					
THROUGH THE USE OF A			ļ		
REFERENCE COMPONENT					

		APPLICATION	FILING	PATENT	
TITLE	COUNTRY	NUMBER	DATE	<u>NUMBER</u>	ISSUE DATE
MANAGING VARIATION IN SPECTROSCOPIC INTENSITY MEASUREMENTS THROUGH THE USE OF A REFERENCE COMPONENT	European Patent Office	16151499.7	Mar 28, 2012		
METHOD FOR MAINTAINING HETEROGENEOUS CONCENTRATIONS OF MOLECULES IN EMULSION DROPLETS	United States of America	61/737,625	Dec 14, 2012		
METHOD FOR MAINTAINING HETEROGENEOUS CONCENTRATIONS OF MOLECULES IN EMULSION DROPLETS	PCT	PCT/US2013/075461	Dec 16, 2013		
METHOD FOR MAINTAINING HETEROGENEOUS CONCENTRATIONS OF MOLECULES IN EMULSION DROPLETS	China	201380065124.1	Dec 16, 2013		
METHOD FOR MAINTAINING HETEROGENEOUS CONCENTRATIONS OF MOLECULES IN EMULSION DROPLETS	European Patent. Office	13862508.2	Dec 16, 2013		
METHOD FOR MAINTAINING HETEROGENEOUS CONCENTRATIONS OF MOLECULES IN EMULSION DROPLETS	United States of America	14/652,094	Dec 16, 2013		
SYSTEM, METHOD, AND KIT FOR SELECTIVELY PREVENTING AND ALLOWING FLOW IN A MICROFLUIDIC DEVICE	United States of America	61/884,432	Sep 30, 2013		
MICROFLUIDIC CARTRIDGE DEVICE AND METHODS OF USE AND ASSEMBLY	China	201480053755,6	Sep 30, 2014		

	- Folkisher	APPLICATION	FILING	PATENT
TITLE	COUNTRY	<u>NUMBER</u>	DATE:	NUMBER ISSUE DATE
MICROFLUIDIC	European	14848694.7	Sep 30,	
CARTRIDGE DEVICE AND	Patent		2014	
METHODS OF USE AND	Office			
ASSEMBLY				
MICROFLUIDIC	United	14/502,948	Sep 30,	
CARTRIDGE DEVICES AND	States of		2014	
METHODS OF USE AND	America			
ASSEMBLY				
MICROFLUIDIC	United	15/376,366	Dec 12,	
CARTRIDGE DEVICES AND	States of		2016	
METHODS OF USE AND	America			
ASSEMBLY				
MICROFLUIDIC	PCT	PCT/US2014/058445	Sep 30,	
CARTRIDGE DEVICES AND			2014	
METHODS OF USE AND				
ASSEMBLY				
SYSTEM, METHOD AND	United	61/870,336	Aug 27,	
KIT FOR PERFORMING A	States of		2013	
CONTROLLED CHANGE IN	America			
THE CONTINUOUS PHASE				
VOLUME FRACTION FROM				
AN EMULSION IN A				
MICROFLUIDIC DEVICE				
EVEN DISTRIBUTION OF	United	61/875,312	Sep 09,	
DROPLETS IN CHANNELS	States of		2013	
FOR PARALLEL OPTICAL	America			
DETECTION				
SYSTEM, METHOD, AND	United	61/881,040	Sep 23,	
KIT FOR FILTERING DROPS	States of	,	2013	
AT HIGH FLOW RATES	America			
INTERDIGITATION OF	United	61/896,766	Oct 29,	
REINJECTED EMULSION	States of		2013	
LIBRARY DROPS	America			
OIL AND DROP	United	61/905,914	Nov 19,	
SEPARATOR TO MINIMIZE	States of		2013	
DROP INTERDIGITATION	America			
HIGH SPEED SPACING	United	61/905,927	Nov 19,	
	States of		2013	
	America			
SYSTEM AND METHOD	United	61/934,889	Feb 03,	
FOR SPACING SETS OF	States of		2014	
DROPS WITHIN A	America			
MICROFLUIDIC CHANNEL]	
MICROFLUIDIC DEVICES	China	201480047519.3	Aug 27,	
AND METHODS OF THEIR			2014	
USE				

	5 (B. 1984) 2 (S.	APPLICATION	FILING	PATENT	
PITEE	COUNTRY		DATE		ISSUE DATE
MICROFLUIDIC DEVICES	European	14840221.7	Aug 27,		, , , , , , , , , , , , , , , , , , ,
AND METHODS OF THEIR	Patent		2014		
USE	Office	4.44.50.000			
MICROFLUIDIC DEVICES	.United	14/470,860	Aug 27,		
AND METHODS OF THEIR USE	States of America		2014		
MICROFLUIDIC DEVICES	PCT	PCT/US2014/052995	Aug 27		
AND METHODS OF THEIR	101	TC1/U32014/032993	Aug 27, 2014		
USE			2017		
MICROFLUIDIC DEVICES	Hong Kong	161127874	8/27/2014		
AND METHODS OF THEIR		101121077	0/2//2011		
USE					
MICROFLUIDIC DROPLET	China	201480064728.9	Nov 25,		
PACKING			2014		
MICROFLUIDIC DROPLET	European	14865870.1	Nov 25,		
PACKING	Patent		2014		
	Office				
MICROFLUIDIC DROPLET	United	61/934,190	Jan 31,		
PACKING	States of		2014		
MICROELLIDIC DROPLET	America	15/020 625	37. 07		
MICROFLUIDIC DROPLET PACKING	United States of	15/039,637	Nov 25, 2014		
FACKING	America		2014		
MICROFLUIDIC DROPLET	PCT	PCT/US2014/067417	Nov 25,		
PACKING		101/00201 1100/ 11/	2014		
MONOLITHIC	United	62/237,229	Oct 5,		
MICROFLUIDIC DEVICE	States of	,——-	2015		
FOR PARALLELIZING AND	America				
SCALING OF FUNCTION					
MONOLITHIC	United	62/059,641	Oct 3,		
MICROFLUIDIC DEVICE	States of		2014		
FOR PARALLELIZING AND	America				
SCALING OF FUNCTION	G. I. C	61/001 001			
MONOLITHIC MICROFLUIDIC DEVICE	States of America	61/881,081	Sep 23,		
FOR PARALLELIZING AND	America		2013		
SCALING OF FUNCTION					
MULTIPLE EXCITATION	United	62/235,284	Sep 30,		
FOR LIQUID LABELING IN	States of	<i>∪⊒, ⊒, ∪ ∪</i> ⊤	2015		
DROPS	America		2015		
NUCLEIC ACID TARGET	United	61/420,747	Dec 07,		
DETECTION USING A	States of	•	2010		
DETECTOR, A TARGET	America	· ·			
PROBE, AND AN					
INHIBITOR					

		APPLICATION	FILING	PATENT	
TIPLE	COUNTRY	<u>NUMBER</u>	DATE	<u>NUMBER</u>	ISSUE DATE
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	Australia	2011338502	Dec 7, 2011		
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	Canada	2,820,094	Dec 7, 2011		
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	China	201180058333.4	Dec 7, 2011	ZL 2011800583334	Jan 20, 2016
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	European Patent Office	11846231.6	Dec 7, 2011		
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	Japan	2013-543299	Dec 7, 2011		
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	Singapore	2013043880	Dec 7, 2011	191725	Aug 24, 2015
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	United States of America	13/992,187	Dec 7, 2011	9,581,549	Feb 28, 2017
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	PCT	PCT/US2011/063654	Dec 7, 2011		
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	United States of America	15/408,191	Jan 17, 2017		
NUCLEIC ACID TARGET DETECTION USING A DETECTOR, A PROBE AND AN INHIBITOR	China	2016100458521	Dec 7, 2011		
REAL-TIME PCR SYSTEM USING A MICROFLUIDIC DEVICE	United States of America	62/216,116	Sep 9, 2015		

Harry Carlyne worldoor	(Tyr) bijaki je 31 az sabadaki saba	<u>APPLICATION</u>	FILING	PATENT	
TOLE	COUNTRY	<u>NUMBER</u>	<u>DATE</u>	NUMBER	<u>ISSUE DATE</u>
REAL-TIME PCR SYSTEM	United	62/047,387	Sep 8,		
USING A MICROFLUIDIC	States of		2014		
DEVICE	America				
SCALABLE	United	61/469,889	Mar 31,		
SPECTROSCOPIC	States of		2011		
DETECTION AND	America				
MEASUREMENT	D.C.T.	DCE/100010/000417	1. 07	· .	
SCALABLE	PCT	PCT/US2012/030716	Mar 27,		
SPECTROSCOPIC DETECTION AND			2012		
MEASUREMENT					
SCALABLE	Australia	2012236748	Mar 27,	2012236748	Mars 10, 2016
SPECTROSCOPIC	Austrana	2012230746	2012	2012230748	Mar 10, 2016
DETECTION AND			2012		
MEASUREMENT					
SCALABLE	Canada	2,841,425	Mar 27,	**-	
SPECTROSCOPIC	Cunada	2,011,123	2012		•
DETECTION AND			2012		
MEASUREMENT	,				
SCALABLE	China	201280018232,9	Mar 27,	ZL	Aug 10, 2016
SPECTROSCOPIC			2012	2012800182329	1105 10, 2010
DETECTION AND					
MEASUREMENT					
SCALABLE	European	12765764.1	Mar 27,		
SPECTROSCOPIC	Patent		2012]	
DETECTION AND	Office				
MEASUREMENT					
SCALABLE	Japan	2014-502715	Mar 27,		
SPECTROSCOPIC			2012		
DETECTION AND					
MEASUREMENT		<u> </u>			
SCALABLE	Singapore	2013068820	Mar 27,	193437	May 26, 2016
SPECTROSCOPIC	 		2012		
DETECTION AND					
MEASUREMENT	FT 1. 1	14/000 064		0000	
SCALABLE	United	14/008,964	Mar 27,	9228898	Jan 5, 2016
SPECTROSCOPIC	States of		2012		
DETECTION AND	America				
MEASUREMENT SIZE ALTERNATING	United	62/012 516	T 17		
SIZE ALTERNATING INJECTION INTO DROPS TO	1	62/012,516	Jun 16,		
	States of		2014		
FACILITATE SORTING SIZE ALTERNATING	America United	15/316,128	Dang		·
INJECTION INTO DROPS TO	States of	13/310,140	Dec 2, 2016		
FACILITATE SORTING	America		∠010		
PACILITATE SORTING	America				

	To the second	APPLICATION	FILING	PATENT	
TITLE	COUNTRY	NUMBER		NUMBER	ISSUE DATE
SIZE ALTERNATING	PCT	PCT/US2015/036080	Jun 16,	98584488X	TOOOD DIATE
INJECTION INTO DROPS TO			2015		
FACILITATE SORTING			7015		
SIZE ALTERNATING	China	2015800322845	6/16/2015		
INJECTION INTO DROPS TO		2010000522015	0/10/2015		
FACILITATE SORTING]				
SIZE ALTERNATING	European	158097188	6/16/2015		
INJECTION INTO DROPS TO	Patent	155057150	0,10,2015		
FACILITATE SORTING	Office				
SPARSE IDENTITY SPACES	United	62/258,370	Nov 20,		
IN DROPLET SEQUENCING	States of	1 02/200,570	2015		-
I TO THE I DE LA SEQUENTE INTO	America		2013		
SPARSE IDENTITY SPACES	United	15/353,625	Nov 16,		
IN DROPLET SEQUENCING	States of	15/555,025	2016		
IN DROI EET BEQUENCING	America		2010		
SPARSE IDENTITY SPACES	PCT	PCT/US2016/062333	Nov. 16		
IN DROPLET SEQUENCING	rei	FC1/US2010/002555	Nov 16, 2016		
SYSTEM AND METHOD	China	201480006226.0			<u> </u>
FOR PERFORMING	Cililia	201480000220.0	Jan 27,		
DROPLET INFLATION			2014		
SYSTEM AND METHOD	7,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	14743656,2	1.07		
FOR PERFORMING	European	14743030.2	Jan 27,		
	Patent Office		2014		
DROPLET INFLATION		161060610	1 27		
SYSTEM AND METHOD	Hong Kong	16106251.3	Jan 27,		
FOR PERFORMING			2014		
DROPLET INFLATION	TT *, 1	C1 /5 C C00			<u> </u>
SYSTEM AND METHOD	United	61/756,598	Jan 25,		
FOR PERFORMING	States of		2013		
DROPLET INFLATION	America	1.4/5/0.//			
SYSTEM AND METHOD	United	14/762,617	Jan 27,		
FOR PERFORMING	States of		2014		
DROPLET INFLATION	America	4.71.4.0.0.4.			
SYSTEM AND METHOD	United	15/410,913	Jan 20,		
FOR PERFORMING	States of		2017		
DROPLET INFLATION	America				
SYSTEM AND METHOD	PCT	PCT/US2014/013.198	Jan 27,		
FOR PERFORMING			2014		
DROPLET INFLATION	and a				
SYSTEMS AND METHODS	China	201480038087.X	May 29,		
FOR SEQUENCING IN			2014		ļ
EMULSION BASED					
MICROFLUIDICS					
SYSTEMS AND METHODS	United	61/828,582	May 29,		
FOR SEQUENCING IN	States of		2013		
EMULSION BASED	America				
MICROFLUIDICS					

TITLE	COUNTRY	APPLICATION NUMBER	FILING DATE	<u>PATENT</u> <u>NUMBER</u> ISSUE DATE
SYSTEMS AND METHODS	European	14804752.5	May 29,	INGWIDER NO ISSUEDATE
FOR SEQUENCING IN	Patent		2014	
EMULSION BASED	Office			
MICROFLUIDICS				
SYSTEMS AND METHODS	Hong Kong	16107351.0	May 29,	
FOR SEQUENCING IN			2014	
EMULSION BASED				
MICROFLUIDICS		!		
SYSTEMS AND METHODS	United	14/290,867	May 29,	
FOR SEQUENCING IN	States of		2014	
EMULSION BASED	America			·
MICROFLUIDICS				
SYSTEMS AND METHODS	wo	PCT/US2014/040082	May 29,	
FOR SEQUENCING IN			2014	
EMULSION BASED				
MICROFLUIDICS				
SYSTEM, METHOD, AND	United	62/017,955	Jun 27,	
KIT FOR LABELING	States of		2014	
ALTERNATING DROPS IN A	America			
MICROFLUIDIC DEVICE				

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