

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT6633566

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

**CONVEYING PARTY DATA**

Name	Execution Date
INGURAN, LLC	03/05/2021

**RECEIVING PARTY DATA**

<b>Name:</b>	BANK OF AMERICA, N.A., AS ADMINISTRATIVE AGENT
<b>Street Address:</b>	901 MAIN STREET
<b>City:</b>	DALLAS
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	75202

**PROPERTY NUMBERS Total: 91**

Property Type	Number
Patent Number:	7335507
Patent Number:	7758811
Patent Number:	7799569
Patent Number:	7833147
Patent Number:	7838210
Patent Number:	7892725
Patent Number:	7943384
Patent Number:	7998700
Patent Number:	8060353
Patent Number:	8198092
Patent Number:	8198093
Patent Number:	8206987
Patent Number:	8206988
Patent Number:	8241914
Patent Number:	8486618
Patent Number:	8502976
Patent Number:	8535938
Patent Number:	8609422
Patent Number:	8623657
Patent Number:	8633023

PATENT

Property Type	Number
Patent Number:	8637318
Patent Number:	8664006
Patent Number:	8670942
Patent Number:	8691584
Patent Number:	8709817
Patent Number:	8709825
Patent Number:	8748183
Patent Number:	8865379
Patent Number:	9027850
Patent Number:	9040304
Patent Number:	9140688
Patent Number:	9222872
Patent Number:	9347038
Patent Number:	9347039
Patent Number:	9347040
Patent Number:	9358091
Patent Number:	9358092
Patent Number:	9377390
Patent Number:	9404846
Patent Number:	9433195
Patent Number:	9442059
Patent Number:	9474591
Patent Number:	9581587
Patent Number:	9743645
Patent Number:	9757726
Patent Number:	9781919
Patent Number:	9804153
Patent Number:	9888990
Patent Number:	9976119
Patent Number:	9992976
Patent Number:	10100278
Patent Number:	10188082
Patent Number:	10219883
Patent Number:	10226041
Patent Number:	10323280
Patent Number:	10324086
Patent Number:	10371622
Patent Number:	10379026

Property Type	Number
Patent Number:	10400213
Patent Number:	10425466
Patent Number:	10542734
Patent Number:	10543070
Patent Number:	10561483
Patent Number:	10563170
Patent Number:	10620213
Patent Number:	10634601
Patent Number:	10662408
Patent Number:	D784555
Patent Number:	9927345
Application Number:	13784578
Application Number:	14861572
Application Number:	14947912
Application Number:	15487244
Application Number:	15875679
Application Number:	15996349
Application Number:	16023764
Application Number:	16039629
Application Number:	16155576
Application Number:	16195552
Application Number:	16438215
Application Number:	16379408
Application Number:	16379456
Application Number:	16439561
Application Number:	16577872
Application Number:	16443281
Application Number:	16555855
Application Number:	16537402
Application Number:	16708007
Application Number:	16830494
Application Number:	16815951
Application Number:	16823001

#### CORRESPONDENCE DATA

Fax Number: (713)754-7550

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**Address Line 2:** SUITE 1700  
**Address Line 4:** HOUSTON, TEXAS 77002

<b>ATTORNEY DOCKET NUMBER:</b>	116281-021600
<b>NAME OF SUBMITTER:</b>	LUCRESHA M. SHEFFIELD
<b>SIGNATURE:</b>	/Lucresha M. Sheffield/
<b>DATE SIGNED:</b>	03/31/2021

**Total Attachments: 15**

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NOTICE  
OF  
GRANT OF SECURITY INTEREST  
IN  
PATENTS

United States Patent and Trademark Office

Ladies and Gentlemen:

Please be advised that pursuant to the Security and Pledge Agreement dated as of March 5, 2021 (as amended, modified, extended, restated, renewed, replaced, or supplemented from time to time, the “Agreement”) by and among the Grantors party thereto (each an “Grantor” and collectively, the “Grantors”) and Bank of America, N.A., as administrative agent (the “Administrative Agent”) for the Secured Parties referenced therein, the undersigned Grantor has granted a continuing security interest in, and a right to set off against, the patents and patent applications shown on Schedule 1 attached hereto to the Administrative Agent for the ratable benefit of the Secured Parties.

The undersigned Grantor and the Administrative Agent, on behalf of the Secured Parties, hereby acknowledge and agree that the security interest in the foregoing patents and patent applications (a) may only be terminated in accordance with the terms of the Agreement and (b) is not to be construed as an assignment of any patent or patent application.

[Continued on following page.]

Very truly yours,

INGURAN, LLC  
XY, LLC

By: \_\_\_\_\_  
Name: Juan Moreno  
Title: Chief Executive Officer

ST REPRODUCTIVE TECHNOLOGIES, LLC

By: \_\_\_\_\_  
Name: Juan Moreno  
Title: Manager

CYTONOME/ST, LLC

By: \_\_\_\_\_  
Name: Juan Moreno  
Title: Supervising Director

Acknowledged and Accepted:

BANK OF AMERICA, N.A., as Administrative Agent

By: \_\_\_\_\_

Name: Tiffany Lin

Title: Assistant Vice President

SCHEDULE 1

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
INGURAN, LLC	Process for the Staining of Sperm	7335507	February 26, 2008
INGURAN, LLC	System for Analyzing Particles Using Multiple Flow Cytometry Units	7758811	July 20, 2010
INGURAN, LLC	System for Analyzing Particles Using Multiple Flow Cytometry Units	7799569	September 21, 2010
INGURAN, LLC	Process for Enriching a Population of Sperm Cells	7833147	November 16, 2010
INGURAN, LLC	Sperm Suspensions For Sorting Into X or Y Chromosome-bearing Enriched Populations	7838210	November 23, 2010
INGURAN, LLC	A Process For Storing a Sperm Dispersion	7892725	February 22, 2011
INGURAN, LLC	APPARATUS AND METHODS FOR SORTING PARTICLES	7943384	May 17, 2011
	Use of a composition which regulates oxidation/reduction reactions intracellularly and/or extracellularly in a staining or sorting process	7998700	August 16, 2011
INGURAN, LLC	Flow Cytometer Remote Monitoring System	8060353	November 15, 2011
INGURAN, LLC	Digital Sampling Apparatus and Methods For Sorting Particles	8198092	June 12, 2012
INGURAN, LLC	Methods for Sorting Particles	8198093	June 12, 2012
INGURAN, LLC	Photo-Damage Apparatus and Methods for Sorting Particles	8206987	June 26, 2012
INGURAN, LLC	Method and Apparatus and Methods for Orienting Sperm in a Fluid Stream	8206988	June 26, 2012
INGURAN, LLC	EPI-Damage Apparatus and Methods for Sorting Particles	8241914	August 14, 2012
INGURAN, LLC	Heterogeneous Inseminate System	8486618	July 16, 2013
INGURAN, LLC	UV Diode Laser Excitation in Flow Cytometry	8502976	August 6, 2013
INGURAN, LLC	Photo-Damage Apparatus For Sorting Particles	8535938	September 17, 2013
INGURAN, LLC	Method and Apparatus For Sorting Particles	8609422	December 17, 2013
INGURAN, LLC	Flow Cytometer Apparatus and Method	8623657	January 7, 2014
INGURAN, LLC	Method of Liquid Nitrogen Surface Vitrification	8633023	January 21, 2014
INGURAN, LLC	Methods for Sorting Particles	8637318	January 28, 2014
INGURAN, LLC	Flow Cytometer Apparatus and Method	8664006	March 4, 2014
INGURAN, LLC	Flow Cytometer Remote Monitoring System	8670942	March 11, 2014
INGURAN, LLC	Sperm Processing Methods	8691584	July 4, 2012



<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
INGURAN, LLC	Systems and Methods For Sorting Particles	8709817	April 29, 2014
INGURAN, LLC	Flow Cytometer Method and Apparatus	8709825	April 29, 2014
INGURAN, LLC	Method and Apparatus for Calibrating a Flow Cytometer	8748183	June 10, 2014
INGURAN, LLC	Polymeric Members and Methods for Marking Polymeric Members	8865379	October 21, 2014
INGURAN, LLC	Nozzle Assembly For Flow Cytometer System and Methods of Manufacture	9027850	May 12, 2015
INGURAN, LLC	Multi-Channel System and Methods For Sorting Particles	9040304	May 26, 2015
INGURAN, LLC	Sperm Staining and Sorting Methods	9140688	September 22, 2015
INGURAN, LLC	Flow Cytometer Nozzle Tip	9222872	December 29, 2015
INGURAN, LLC	Compositions and Methods For Improving the Quality of Processed Sperm	9347038	May 24, 2016
INGURAN, LLC	Compositions and Methods For Improving the Quality of Processed Sperm	9347039	May 24, 2016
INGURAN, LLC	Compositions and Methods For Processing Sperm	9347040	May 24, 2016
INGURAN, LLC	Two-Dimensional Bar Codes in Assisted Reproductive Technologies	9358091	June 7, 2016
INGURAN, LLC	Polymeric Members and Methods for Marking Polymeric Members	9358092	June 7, 2016
INGURAN, LLC	Apparatus, Methods and Processes for Sorting Particles and for Providing Sex-Sorted Animal Sperm	9377390	June 28, 2016
INGURAN, LLC	Nozzle Assembly For Flow Cytometry System and Methods of Manufacture	9404846	August 2, 2016
INGURAN, LLC	Methods For Increasing Genetic Progress in a Line or Breed of Swine Using Sex-Selected Sperm Cells	9433195	September 6, 2016
INGURAN, LLC	UV Diode Laser Excitation in Flow Cytometry	9442059	September 13, 2016
INGURAN, LLC	Heterogeneous Inseminate System	9474591	October 25, 2016
INGURAN, LLC	Sperm Staining and Sorting Methods	9581587	February 28, 2017
INGURAN, LLC	Methods For Increasing Genetic Progress in a Line or Breed of Swine Using Sex-Selected Sperm Cells	9743645	August 29, 2017
INGURAN, LLC	System For High Throughput Sperm Sorting	9757726	September 12, 2017
INGURAN, LLC	Compositions and Methods For Improving the Quality of Processed Sperm	9781919	October 10, 2017

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
INGURAN, LLC	Magnetic Removal or Identification of Damaged Or Compromised Cells or Cellular Structures	9804153	October 31, 2017
INGURAN, LLC	Methods For Use of Sex Sorted Semen to Improve Genetic Management in Swine	9888990	February 13, 2018
INGURAN, LLC	Compositions and Methods For Improving the Quality of Processed Sperm	9976119	May 22, 2018
INGURAN, LLC	Animal Lift	9992976	June 12, 2018
INGURAN, LLC	Multi-Channel System and Methods for Sorting Particles	10100278	October 16, 2018
INGURAN, LLC	Methods For Increasing Genetic Progress in a Line or Breed of Swine Using Sex-Selected Sperm Cells	10188082	January 29, 2019
INGURAN, LLC	Methods For Use of Sex Sorted Semen To Improve Genetic Management in Swine	10219883	March 5, 2019
INGURAN, LLC	Compositions and Methods For Improving the Quality of Processed Sperm	10226041	March 12, 2019
INGURAN, LLC	Methods of Genomic Evaluation in Livestock	10323280	June 18, 2019
INGURAN, LLC	Magnetic Removal or Identification of Damaged Or Compromised Cells or Cellular Structures	10324086	June 18, 2019
INGURAN, LLC	Device for High Throughput Sperm Sorting	10371622	August 6, 2019
INGURAN, LLC	Cell Processing Using Magnetic Particles	10379026	August 13, 2019
INGURAN, LLC	High Efficiency Methods of Sex Sorting Sperm	10400213	September 3, 2019
INGURAN, LLC	Flow Cytometer Remote Monitoring System	10425466	September 24, 2019
INGURAN, LLC	Methods For Increasing Genetic Progress in a Line or Breed of Swine Using Sex-Selected Sperm Cells	10542734	January 28, 2020
INGURAN, LLC	Methods For Use of Sex Sorted Semen to Improve Genetic Management in Swine	10543070	January 28, 2020
INGURAN, LLC	Tiltable Cart	10561483	February 18, 2020
INGURAN, LLC	Compositions and Methods For Improving the Quality of Processed Sperm	10563170	February 18, 2020
INGURAN, LLC	High Pressure Sperm Sorting and Flow Cytometer Methods	10620213	April 14, 2020
INGURAN, LLC	Nozzle Assembly For Flow Cytometry System and Methods of Manufacture	10634601	April 28, 2020
INGURAN, LLC	Methods for High Throughput Sperm Sorting	10662408	May 26, 2020
INGURAN, LLC	Storage Cane -- Design	D784555	April 18, 2017

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
INGURAN, LLC	Methods of Processing Sperm For Sex Sorting	13784578	March 4, 2013
INGURAN, LLC	Sex Sorted Sperm Demonstrating a Dose Response and Methods of Producing Sex Sorted Sperm Demonstrating a Dose Response	14861572	September 22, 2015
INGURAN, LLC	Low Sugar Sperm Media and Compositions	14947912	November 20, 2015
INGURAN, LLC	Methods of Genomic Evaluation in Livestock	15487244	April 13, 2017
INGURAN, LLC	Sperm Processing Method, Apparatus and Related Media Compositions	15875679	January 19, 2018
INGURAN, LLC	Single Channel, Multiple Drug Delivery Device and Methods	15996349	June 1, 2018
INGURAN, LLC	Methods of Estimating Gamete Variation	16023764	June 29, 2018
INGURAN, LLC	Method and System Incorporating Beam Shaping Optics and Beam Stabilization	16039629	July 19, 2018
INGURAN, LLC	System and Method for Sorting Particles	16155576	October 9, 2018
INGURAN, LLC	Methods For Increasing the Rate of Genetic Progress and Generating Inbred Lines in Non-Human Mammals Using Gametes Derived From Embryos	16195552	November 19, 2018
INGURAN, LLC	Magnetic Removal or Identification of Damaged Or Compromised Cells or Cellular Structures	16438215	June 11, 2019
INGURAN, LLC	Sperm Nuclei And Methods Of Their Manufacture And Use	16379408	April 9, 2019
INGURAN, LLC	Methods And Compositions For Determining The Presence Or Absence Of DNA Aberrations	16379456	April 9, 2019
INGURAN, LLC	Methods of Genomic Evaluation in Livestock	16439561	June 12, 2019
INGURAN, LLC	Methods for High Throughput Sperm Sorting	16577872	September 20, 2019
INGURAN, LLC	Magnetic Removal or Identification of Damaged Or Compromised Cells or Cellular Structures	16443281	June 17, 2019
INGURAN, LLC	Devices and Methods for Artificial Insemination	16555855	August 29, 2019
INGURAN, LLC	Cell Processing Using Magnetic Particles	16537402	August 9, 2019
INGURAN, LLC	Methods For Increasing Genetic Progress in a Line or Breed of Swine Using Sex-Selected Sperm Cells	16708007	December 9, 2019
INGURAN, LLC	Nozzle Assembly For A Flow Cytometry System and Methods of Manufacture	16830494	March 26, 2020
INGURAN, LLC	Methods for Sex-Sorting Sperm	16815951	March 11, 2020
INGURAN, LLC	Method For Improved Sperm Cell Populations	16823001	March 18, 2020
INGURAN, LLC	Nozzle Assembly For A Flow Cytometry	9927345	March 27, 2018

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
XY, LLC	A System for In-vitro Fertilization with Spermatozoa Separated into X-chromosome and Y-chromosome Bearing Populations	7094527	August 22, 2006
XY, LLC	Sperm Cell Processing and Preservation Systems	7169548	January 30, 2007
XY, LLC	High Purity X-Chromosome Bearing And Y-Chromosome Bearing Populations Of Spermatozoa	7371517	May 13, 2008
XY, LLC	Methods and Apparatus for Reducing Protein Content in Sperm Cell Extenders	7618770	November 17, 2009
XY, LLC	System For Separating Frozen-thawed Sperm Cells Into X-Chromosome And Y-Chromosome Bearing Populations	7713687	May 11, 2010
XY, LLC	APPARATUS, METHODS AND PROCESSES FOR SORTING PARTICLES AND FOR PROVIDING SEX-SORTED ANIMAL SPERM	7723116	May 25, 2010
XY, LLC	System For Separating Frozen-thawed Sperm Cells Into X-Chromosome And Y-Chromosome Bearing Populations	7771921	August 10, 2010
XY, LLC	Method of Cryopreserving Selected Sperm Cells	7820425	October 26, 2010
XY, LLC	High Resolution Flow Cytometer	7855078	December 21, 2010
XY, LLC	High Resolution Flow Cytometer	7981682	July 19, 2011
XY, LLC	Method of Generating a Fluid Stream in a Microfluidic Device	8080422	December 20, 2011
XY, LLC	Differential Evaporation Potentiated Disinfectant System	8119688	February 21, 2012
XY, LLC	A System for In-vitro Fertilization with Spermatozoa Separated into X-chromosome and Y-chromosome Bearing Populations	8137967	March 20, 2012
XY, LLC	Low Pressure Sperm Separation System Using Heterospermic Insemination To Assess Sperm Function	8211629	July 3, 2012
XY, LLC	Reproductive technology of low dose semen production and in vitro / in vitro fertilization in domestic animals	8251887	August 28, 2012
XY, LLC	Methods and Apparatus for Reducing Protein Content in Sperm Cell Extenders	8426197	April 23, 2013
XY, LLC	Sex Selected Equine Production System	8497063	July 30, 2013
XY, LLC	Method of Producing An Inseminate	8512224	August 20, 2013
XY, LLC	Optical apparatus	8553226	October 8, 2013
XY, LLC	Self-Tuning, Biologically Modeled Sorter	8557587	October 15, 2013
XY, LLC	In-Vitro Fertilization Systems With Spermatozoa Separated Into X-Chromosome and Y-Chromosome Bearing Populations	8569053	October 29, 2013

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
XY, LLC	Continuously Regulated Precision Pressure Fluid Delivery System	8597573	December 3, 2013
XY, LLC	Cell Analysis Apparatus and Methods	8603396	December 10, 2013
XY, LLC	Analyzation instrument	8610892	December 17, 2013
XY, LLC	Methods For Separating Frozen-Thawed Spermatozoa Into X-Chromosome Bearing And Y-Chromosome Bearing Populations	8652769	February 18, 2014
XY, LLC	Method For Continuously Regulating Fluid Pressure	8685751	April 1, 2014
XY, LLC	Methods and Apparatus For Producing High Purity X-Chromosome Bearing and Y-Chromosome Bearing Populations of Spermatozoa	8703418	April 22, 2014
XY, LLC	Sperm Cell Separation System	8765365	July 1, 2014
XY, LLC	Flow Path Conditioner System	8846767	September 30, 2014
XY, LLC	Antimicrobially Active Compositions	8877818	November 4, 2014
XY, LLC	Method of analyzing cells	8975035	March 10, 2015
XY, LLC	High Purity X-Chromosome Bearing And Y-Chromosome Bearing Populations Of Spermatozoa	9145590	September 29, 2015
XY, LLC	System and method for sorting cells	9365822	June 14, 2016
XY, LLC	System and method for sorting cells	9422523	August 23, 2016
XY, LLC	Differential Evaporation Potentiated Disinfectant System	9474814	October 25, 2016
XY, LLC	Antimicrobially Active Compositions	9750244	September 5, 2017
XY, LLC	In-Vitro Fertilization Systems With Spermatozoa Separated Into X-Chromosome and Y-Chromosome Bearing Populations	9879221	January 30, 2018
XY, LLC	Generating a Fluid Stream in a Microfluidic Device	10190964	January 29, 2019
XY, LLC	Method For Producing High Purity X-Chromosome Bearing And Y-Chromosome Bearing Populations Of Spermatozoa	10208345	February 19, 2019
XY, LLC	Sperm Cell Process System	10522320	October 17, 2005
XY, LLC	Sperm Cell Processing and Preservation Systems	11668148	January 29, 2007
XY, LLC	Efficient Haploid Sorting Flow Cytometer Systems	13546757	July 11, 2012
XY, LLC	Sperm Cell Processing Systems	13765577	February 12, 2013
XY, LLC	Efficient Haploid Cell Sorting Flow Cytometer Systems	13764548	February 11, 2013
XY, LLC	Heterogeneous Inseminate System	15332123	December 3, 2019
XY, LLC	Generating a Fluid Stream in a Microfluidic Device	16259882	January 28, 2019

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
XY, LLC	Heterogeneous Inseminate System	16693075	June 8, 2011
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	6808075	October 26, 2004
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A BUBBLE VALVE FOR REGULATING FLUID FLOW THROUGH A MICROCHANNEL	6877528	April 12, 2005
CYTONOME/ST, LLC	ON CHIP DILUTION SYSTEM	6883957	April 26, 2005
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	6976590	December 20, 2005
CYTONOME/ST, LLC	LATCHING MICRO-REGULATOR	6981518	January 3, 2006
CYTONOME/ST, LLC	ELECTROMAGNETIC PUMP	7033148	April 25, 2006
CYTONOME/ST, LLC	MICROFABRICATED TWO-PIN LIQUID SAMPLE DISPENSING SYSTEM	7041257	May 9, 2006
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A BUBBLE VALVE FOR REGULATING FLUID FLOW THROUGH A MICROCHANNEL	7069943	July 4, 2006
CYTONOME/ST, LLC	IMPLEMENTATION OF MICROFLUIDIC COMPONENTS, INCLUDING MOLECULAR FRACTIONATION DEVICES, IN A MICROFLUIDIC SYSTEM	7094345	August 22, 2006
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	7104405	September 12, 2006
CYTONOME/ST, LLC	LATCHING MICRO-REGULATOR	7134639	November 14, 2006
CYTONOME/ST, LLC	MICROFABRICATED TWO-PIN SYSTEM FOR BIOMOLECULE CRYSTALLIZATION	7153699	December 26, 2006
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	7157274	January 2, 2007
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A VIRTUAL WALL FLUID INTERFACE PORT FOR INTERFACING FLUIDS WITH THE MICROFLUIDIC SYSTEM	7179423	February 20, 2007
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A VIRTUAL WALL FLUID INTERFACE PORT FOR INTERFACING FLUIDS WITH THE MICROFLUIDIC SYSTEM	7211442	May 1, 2007
CYTONOME/ST, LLC	TEMPERATURE CONTROLLED MICROFABRICATED TWO-PIN LIQUID SAMPLE DISPENSING SYSTEM	7258839	August 21, 2007
CYTONOME/ST, LLC	LATCHING MICRO-REGULATOR	7293581	November 13, 2007
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	7298478	November 20, 2007

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<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	7311476	December 25, 2007
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	7355699	April 8, 2008
CYTONOME/ST, LLC	ON CHIP DILUTION SYSTEM	7401972	July 22, 2008
CYTONOME/ST, LLC	IMPLEMENTATION OF MICROFLUIDIC COMPONENTS IN A MICROFLUIDIC SYSTEM	7455770	November 25, 2008
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	7492522	February 17, 2009
CYTONOME/ST, LLC	IMPLEMENTATION OF MICROFLUIDIC COMPONENTS, INCLUDING MOLECULAR FRACTIONATION DEVICES, IN A MICROFLUIDIC SYSTEM	7514000	April 7, 2009
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	7569788	August 4, 2009
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	7576861	August 18, 2009
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	7584857	September 8, 2009
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	7611309	November 3, 2009
CYTONOME/ST, LLC	TEMPERATURE CONTROLLED MICROFABRICATED TWO-PIN LIQUID SAMPLE DISPENSING SYSTEM	7686967	March 30, 2010
CYTONOME/ST, LLC	IMPLEMENTATION OF MICROFLUIDIC COMPONENTS IN A MICROFLUIDIC SYSTEM	7870964	January 18, 2011
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	7963399	June 21, 2011
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	7997831	August 16, 2011
CYTONOME/ST, LLC	ACTUATION OF PARALLEL MICROFLUIDIC ARRAYS	8123044	February 28, 2012
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A BUBBLE VALVE FOR REGULATING FLUID FLOW THROUGH A MICROCHANNEL	8210209	July 3, 2012
CYTONOME/ST, LLC	UNITARY CARTRIDGE FOR PARTICLE PROCESSING	8277764	October 2, 2012
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	8408399	April 2, 2013
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	8529161	September 10, 2013

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<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	8567608	October 29, 2013
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A BUBBLE VALVE FOR REGULATING FLUID FLOW THROUGH A MICROCHANNEL	8623295	January 7, 2014
CYTONOME/ST, LLC	UNITARY CARTRIDGE FOR PARTICLE PROCESSING	8679422	March 25, 2014
CYTONOME/ST, LLC	FLUID STREAM IMAGING APPARATUS	8681335	March 25, 2014
CYTONOME/ST, LLC	PARTICLE SORTING APPARATUS AND METHOD	8705031	April 22, 2014
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	8727131	May 20, 2014
CYTONOME/ST, LLC	PARTICLE PROCESSING SYSTEMS AND METHODS FOR NORMALIZATION/CALIBRATION OF SAME	8731860	May 20, 2014
CYTONOME/ST, LLC	ACTUATION OF PARALLEL MICROFLUIDIC ARRAYS	8863962	October 21, 2014
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	8964184	February 24, 2015
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A BUBBLE VALVE FOR REGULATING FLUID FLOW THROUGH A MICROCHANNEL	9011797	April 21, 2015
CYTONOME/ST, LLC	MULTIPLE FLOW CHANNEL PARTICLE ANALYSIS SYSTEM	9057676	June 16, 2015
CYTONOME/ST, LLC	FLUID STREAM IMAGING APPARATUS	9255874	February 9, 2016
CYTONOME/ST, LLC	ACTUATION OF PARALLEL MICROFLUIDIC ARRAYS	9260693	February 16, 2016
CYTONOME/ST, LLC	ASSEMBLIES AND METHODS FOR REDUCING OPTICAL CROSSTALK IN PARTICLE PROCESSING SYSTEMS	9335247	May 10, 2016
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	9339850	May 17, 2016
CYTONOME/ST, LLC	Multilayer hydrodynamic sheath flow structure	9446912	September 20, 2016
CYTONOME/ST, LLC	FOCAL PLANE SHIFTING SYSTEM	9529203	December 27, 2016
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	9550215	January 24, 2017
CYTONOME/ST, LLC	MULTIPLE FLOW CHANNEL PARTICLE ANALYSIS SYSTEM	9618442	April 11, 2017
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	9752976	September 5, 2017
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	9802767	October 31, 2017
CYTONOME/ST, LLC	UNITARY CARTRIDGE FOR PARTICLE PROCESSING	9823252	November 21, 2017



<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
CYTONOME/ST, LLC	MICROFLUIDIC SYSTEM INCLUDING A BUBBLE VALVE FOR REGULATING FLUID FLOW THROUGH A MICROCHANNEL	9943847	April 17, 2018
CYTONOME/ST, LLC	OPERATORLESS PARTICLE PROCESSING SYSTEMS AND METHODS	9964968	May 8, 2018
CYTONOME/ST, LLC	FLUID HANDLING SYSTEM FOR A FLUID FLOW INSTRUMENT	10025322	July 17, 2018
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	10029263	July 24, 2018
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	10029283	July 24, 2018
CYTONOME/ST, LLC	ACTUATION OF PARALLEL MICROFLUIDIC ARRAYS	10065188	September 4, 2018
CYTONOME/ST, LLC	MICRO-LENS SYSTEMS FOR PARTICLE PROCESSING SYSTEMS	10190960	January 29, 2019
CYTONOME/ST, LLC	MULTIPLE FLOW CHANNEL PARTICLE ANALYSIS SYSTEM	10197493	February 5, 2019
CYTONOME/ST, LLC	LARGE AREA, LOW F-NUMBER OPTICAL SYSTEM	10215995	February 26, 2019
CYTONOME/ST, LLC	FLUID HANDLING SYSTEM FOR A PARTICLE PROCESSING APPARATUS	10221844	March 5, 2019
CYTONOME/ST, LLC	UNITARY CARTRIDGE FOR PARTICLE PROCESSING	10222378	March 5, 2019
CYTONOME/ST, LLC	FLUID HANDLING SYSTEM FOR A FLUID FLOW INSTRUMENT	10025322	July 17, 2018
CYTONOME/ST, LLC	PARTICLE PROCESSING SYSTEMS AND METHODS FOR NORMALIZATION/CALIBRATION OF SAME	10274414	April 30, 2019
CYTONOME/ST, LLC	ASSEMBLIES AND METHODS FOR REDUCING OPTICAL CROSSTALK IN PARTICLE PROCESSING SYSTEMS	10371621	August 6, 2019
CYTONOME/ST, LLC	FLOW CELL	10379029	August 13, 2019
CYTONOME/ST, LLC	MICROFLUIDIC DEVICE	10427159	October 1, 2019
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR MONITORING AND OPTIMIZING MICROFLUIDIC PARTICLE SORTING	10481069	November 19, 2019
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	10520421	December 31, 2019
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	10543992	January 28, 2020

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
CYTONOME/ST, LLC	HYDRODYNAMIC FOCUSING APPARATUS AND METHODS	10583439	March 10, 2020
CYTONOME/ST, LLC	MICROFLUIDIC DEVICE AND SYSTEM USING ACOUSTIC MANIPULATION	10646870	May 12, 2020
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	10689210	June 23, 2020
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	10710120	July 14, 2020
CYTONOME/ST, LLC	UNITARY CARTRIDGE FOR PARTICLE PROCESSING	10794913	October 6, 2020
CYTONOME/ST, LLC	MICROFLUIDIC FLOW THROUGH ELEMENTS AND METHODS OF MANUFACTURE OF SAME	10870175	December 22, 2020
CYTONOME/ST, LLC	OPERATORLESS PARTICLE PROCESSING SYSTEMS AND METHODS	10871790	December 22, 2020
CYTONOME/ST, LLC	DROPLET SORTER	D791338	July 4, 2017
CYTONOME/ST, LLC	DROPLET SORTER	D815754	April 17, 2018
CYTONOME/ST, LLC	THERMAL ACTIVATED MICRO FLUIDIC SWITCHING	14715052	May 18, 2015
CYTONOME/ST, LLC	ACTUATION OF PARALLEL MICROFLUIDIC ARRAYS	16119404	August 31, 2018
CYTONOME/ST, LLC	MICRO LENS SYSTEMS FOR PARTICLE PROCESSING SYSTEMS	16259311	January 28, 2019
CYTONOME/ST, LLC	ASSEMBLIES AND METHODS FOR REDUCING OPTICAL CROSSTALK IN PARTICLE PROCESSING SYSTEMS	16532047	August 5, 2019
CYTONOME/ST, LLC	METHODS FOR CONTROLLING FLUID FLOW IN A MICROFLUIDIC SYSTEM	16584315	September 26, 2019
CYTONOME/ST, LLC	OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM	16721431	December 19, 2019
CYTONOME/ST, LLC	MULTILAYER HYDRODYNAMIC SHEATH FLOW STRUCTURE	16906699	June 19, 2020
CYTONOME/ST, LLC	METHOD AND APPARATUS FOR SORTING PARTICLES	16927414	July 13, 2020
ST REPRODUCTIVE TECHNOLOGIES, LLC	Transportation and/or Storage Device Comprising a Double-Walled Insulating Bulb	8181813	May 22, 2012
ST REPRODUCTIVE TECHNOLOGIES, LLC	Container For Suspending An Insulating Bulb	8387818	March 5, 2013
ST REPRODUCTIVE TECHNOLOGIES, LLC	Water Distribution Methods and System For Livestock Shipping Containers on a Shipping Vessel	8505491	August 13, 2013

<u>Loan Party/Owner</u>	<u>Patents</u>	<u>Application/ Registration Number</u>	<u>Application/ Registration Date</u>
ST REPRODUCTIVE TECHNOLOGIES, LLC	Method for Shipping Livestock	8550035	October 8, 2013
ST REPRODUCTIVE TECHNOLOGIES, LLC	Shipping Containers for Livestock	8720379	May 13, 2014
ST REPRODUCTIVE TECHNOLOGIES, LLC	Portable Cryogenic Container	8956855	February 17, 2015
ST REPRODUCTIVE TECHNOLOGIES, LLC	Floating partition and loft for a livestock shipping container	9102258	August 11, 2015
ST REPRODUCTIVE TECHNOLOGIES, LLC	Floating Partition and Loft For a Livestock Shipping Container	10293736	May 21, 2019
ST REPRODUCTIVE TECHNOLOGIES, LLC	Sensor Apparatus and Associated Systems and Methods	10349632	July 16, 2019
ST REPRODUCTIVE TECHNOLOGIES, LLC	Sensor apparatus and associated systems and methods	10555504	October 31, 2019
ST REPRODUCTIVE TECHNOLOGIES, LLC	CATTLE CONTAINER	D654229	February 14, 2012
ST REPRODUCTIVE TECHNOLOGIES, LLC	FEED PARTITION	D685140	June 25, 2013
ST REPRODUCTIVE TECHNOLOGIES, LLC	Calf Bolus	16297323	March 8, 2019
ST REPRODUCTIVE TECHNOLOGIES, LLC	Animal Environmental and Physiological Monitoring System (Multi-Tag)	16418524	May 21, 2019
ST REPRODUCTIVE TECHNOLOGIES, LLC	Sensor Apparatus and Associated systems and Methods	16725804	December 23, 2019

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