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| PATENT ASSIGNMENT COVER SHEET |
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Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5295222

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| PETER KWONG | 09/08/2017 |
| IVELIN GEORGIEV | 09/11/2017 |
| MICHAEL GORDON JOYCE | 09/14/2017 |
| MASARU KANEKIYO | 08/30/2017 |
| ALIAKSANDR DRUZ | 09/11/2017 |
| ULRICH BAXA | 10/03/2017 |
| JOSEPH VAN GALEN | 09/23/2017 |
| RITA CHEN | 09/20/2017 |
| CHENG CHENG | 09/11/2017 |
| JOHN MASCOLA | 09/14/2017 |
| YAROSLAV TSYBOVSKY | 09/18/2017 |
| YONGPING YANG | 09/11/2017 |
| PAUL THOMAS | 10/05/2017 |
| BARNEY GRAHAM | 08/30/2017 |
| SYED MOHAMMAD MOIN | 09/05/2017 |
| JEFFREY BOYINGTON | 09/11/2017 |
| KIZZMEKIA CORBETT | 09/06/2017 |
| RECEIVING PARTY DATA | |
| Name: | THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES |
| Street Address: | 6011 EXECUTIVE BOULEVARD |
| Internal Address: | SUITE 325, MSC 7660 |
| City: | BETHESDA |
| State/Country: | MARYLAND |
| Postal Code: | 20892-7660 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 16312166 |
| CORRESPONDENCE DATA | |
| PATENT | |

Fax Number: (503)595-5301

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: 5035955300

Email: sarah.flugum@klarquist.com

Correspondent Name: GREGORY SCOTT, KLARQUIST SPARKMAN, LLP

Address Line 1: 121 SW SALMON STREET

Address Line 2: SUITE 1600

Address Line 4: PORTLAND, OREGON 97204

| | |
|--------------------------------|---------------|
| ATTORNEY DOCKET NUMBER: | 4239-95672-04 |
|--------------------------------|---------------|

| | |
|---------------------------|-------------------------------|
| NAME OF SUBMITTER: | GREGORY K. SCOTT, PH.D., J.D. |
|---------------------------|-------------------------------|

| | |
|-------------------|--------------------|
| SIGNATURE: | /Gregory K. Scott/ |
|-------------------|--------------------|

| | |
|---------------------|------------|
| DATE SIGNED: | 12/20/2018 |
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Total Attachments: 16

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**ASSIGNMENT FOR NIH/FDA/CDC INVENTIONS AIA
(NIH OR FDA OR CDC AND LEIDOS BIOMEDICAL CO-INVENTORS ONLY)**

WHEREAS, we, Peter Kwong, Ivelin Georgiev, Michael Gordon Joyce, Masaru Kanekiyo, Aliaksandr Druz, Joseph Van Galen, Rita Chen, Cheng Cheng, John Mascola, Yongping Yang, Paul Thomas, Barney Graham, Syed Mohammad Moin, Jeffrey Boyington, and Kizzmekia Corbett, employees and/or contractors of the National Institutes of Health, are each employed and/or contracted by a component of the United States Department of Health and Human Services having an address at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660, and

Ulrich Baxa and Yaroslav Tsybovsky, employees of Leidos Biomedical Research, Inc., a subsidiary of Leidos, Inc., a Delaware corporation having a principal place of business at 1050 Boyles Street, Bldg 428, Frederick, MD 21702-1201

have made certain inventions as described and claimed in:

U.S. Provisional Patent Application No. 62/355,212, filed on June 27, 2016, entitled "SELF-ASSEMBLING INSECT FERRITIN NANOPARTICLES FOR DISPLAY OF CO-ASSEMBLED TRIMERIC ANTIGENS," and

PCT Patent Application No. PCT/US2017/039595, filed on June 27, 2017, entitled "SELF-ASSEMBLING INSECT FERRITIN NANOPARTICLES FOR DISPLAY OF CO-ASSEMBLED TRIMERIC ANTIGENS,"

both of which applications are collectively referred to herein as "**The Patent Application(s)**"; and

WHEREAS, we are the inventors named in **The Patent Application(s)**; and

WHEREAS, the inventions described and claimed in **The Patent Application(s)** were made under conditions such as to entitle **THE UNITED STATES OF AMERICA, as represented by the Secretary, Department of Health and Human Services** [hereinafter **THE GOVERNMENT**] under Executive Order 10096 and its amendments, 35 U.S.C. §§200-201, §§206-207, and §210 and 37 C.F.R. Part 501 to the entire right, title, and interest in such inventions; and

WHEREAS, THE GOVERNMENT is desirous of acquiring all domestic and foreign right, title, and interest in the inventions described and claimed in **The Patent Application(s)**;

NOW, THEREFORE, having the legal obligation to assign our right, title and interest in the inventions described and claimed in **The Patent Application(s)** to **THE GOVERNMENT**, having a place of business at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660 and for consideration, the receipt and sufficiency of which are hereby acknowledged, we hereby assign and transfer to **THE GOVERNMENT**:

the entire right, title, and interest in and to any and all inventions described and claimed in **The Patent Application(s)** and any and all Letters Patent which may be granted thereon, and any and all continuations, divisions, reissues or extensions thereof; and


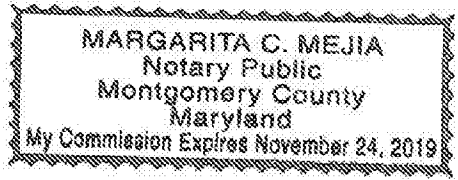
all rights to claim priority on the basis of **The Patent Application(s)** including but not limited to applications filed through the provisions of the Patent Cooperation Treaty ("PCT Applications"); and

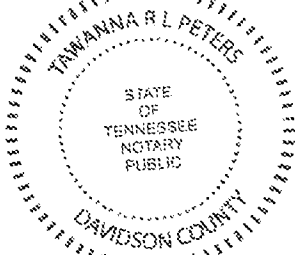
all applications for Letters Patent that may be filed for any and all inventions described and claimed in **The Patent Application(s)** that may be filed in any foreign country and all Letters Patent that may be granted thereon in any foreign country and all extensions, renewals, and reissues thereof; and

any and all such Letters Patent as may be granted in the United States or any foreign country to be held by **THE GOVERNMENT** to the end of the term for which the same would have been held by the inventor(s) had this assignment not been made.

We further agree to make, execute, and deliver to **THE GOVERNMENT**, upon request, any and all papers, documents, affidavits, or other instruments that may be necessary in the prosecution of any application or applications for improvements or reissues of Letters Patent, and to assist **THE GOVERNMENT** in every way as may be requested in protecting said invention.

IN WITNESS WHEREOF we subscribe our hands and seals on the dates shown below:

| | |
|---|--|
| Inventor: Peter Kwong | |
| Date <u>8 Sept 2017</u> |  Inventor Signature |
| County of <u>Montgomery</u> | |
| State of <u>Maryland</u> | |
| Subscribed and sworn to before me this <u>8</u> day of <u>September</u> <u>2017</u> . | |
| Seal | Notary Signature:  |
|  | Notary Public for the State of: <u>Maryland</u> |
| | My Commission Expires: <u>11-24-19</u> |

| | |
|--|---|
| Inventor: Ivelin Georgiev | |
| Date <u>September 11, 2017</u> | <u>[Signature]</u> Inventor Signature |
| County of <u>Davidson</u> | |
| State of <u>Tennessee</u> | |
| Subscribed and sworn to before me this <u>11</u> day of <u>September</u> , <u>2017</u> . | |
| Seal | |
|  | Notary Signature: <u>[Signature]</u> |
| | Notary Public for the State of: <u>Tennessee</u> |
| | My Commission Expires: <u>My Commission Expires</u> <u>May 3, 2021</u> |

| | |
|---|---------------------------------------|
| Inventor: Michael Gordon Joyce | |
| Date _____ | _____ Inventor Signature |
| County of _____ | |
| State of _____ | |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

| | |
|---|---------------------------------------|
| Inventor: Ivelin Georgiev | |
| Date _____ | _____ Inventor Signature |
| County of _____ | |
| State of _____ | |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

| | |
|---|--|
| Inventor: Michael Gordon Joyce | |
| Date <u>09-14-2017</u> | <u><i>Michael Gordon Joyce</i></u> Inventor Signature |
| County of _____ | |
| State of _____ | |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

Inventor: Masaru Kanekiyo

Date Aug 30, 2017 M Kanekiyo
 Inventor Signature

County of Montgomery
 State of Maryland

Subscribed and sworn to before me this 30th day of August, 2017.

Seal

MARGARITA C. MEJIA
 Notary Public
 Montgomery County
 Maryland
 My Commission Expires November 24, 2019

Notary Signature: [Signature]
 Notary Public for the State of: Maryland
 My Commission Expires: 11-24-19

Inventor: Aliaksandr Druz

Date _____
 Inventor Signature _____

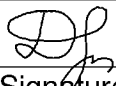
County of _____
 State of _____

Subscribed and sworn to before me this _____ day of _____, _____.


Seal

Notary Signature: _____
 Notary Public for the State of: _____
 My Commission Expires: _____

| | |
|---|---------------------------------------|
| Inventor: Masaru Kanekiyo | |
| Date _____ | _____ Inventor Signature |
| County of _____ | |
| State of _____ | |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

| | |
|---|--|
| Inventor: Aliaksandr Druz | |
| Date <u>09/11/2017</u> |  _____ Inventor Signature |
| County of _____ | |
| State of _____ | |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

Inventor: Ulrich Baxa

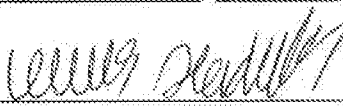
Date 10/03/17 
Inventor Signature

County of Montgomery
State of Maryland

Subscribed and sworn to before me this 3 day of October, 2017.

Seal

LEWIS HENDRICKS
Notary Public - State of Maryland
Montgomery County
My Commission Expires Aug 4, 2021

Notary Signature: 
Notary Public for the State of: Maryland
My Commission Expires: Aug 4th 2021

Inventor: Joseph Van Galen

Date _____ _____
Inventor Signature

County of _____
State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Signature: _____
Notary Public for the State of: _____
My Commission Expires: _____

Inventor: Ulrich Baxa

Date _____

Inventor Signature _____

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

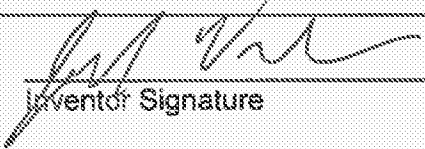
Notary Signature: _____

Notary Public for the State of: _____

My Commission Expires: _____

Inventor: Joseph Van Galen

Date 09/23/2017

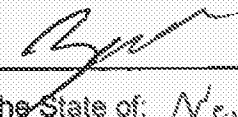

Inventor Signature _____

County of Monroe

State of New York

Subscribed and sworn to before me this 23 day of September, 2017.

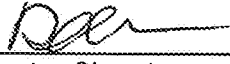
Seal

Notary Signature:  _____

Notary Public for the State of: New York

My Commission Expires: 01/03/2021

Zachary Robert McLymond
Notary Public, State of New York
Reg. #01MC6352749
Qualified in Monroe County
Commission Expires 01/03/2021

| | |
|--|---|
| Inventor: Rita Chen | |
| Date <u>9/20/17</u> | <u></u> Inventor Signature |
| County of <u>USA</u> | |
| State of <u>MD</u> | |
| Subscribed and sworn to before me this <u>20</u> day of <u>September</u> , <u>2017</u> . | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

| | |
|---|---------------------------------------|
| Inventor: Cheng Cheng | |
| Date _____ | _____ Inventor Signature |
| County of _____ | |
| State of _____ | |
| Subscribed and sworn to before me this _____ day of _____, _____. | |
| Seal | |
| | Notary Signature: _____ |
| | Notary Public for the State of: _____ |
| | My Commission Expires: _____ |

Inventor: Rita Chen No longer @ VPE

Date _____

Inventor Signature _____

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____.

Seal


Notary Signature: _____

Notary Public for the State of: _____

My Commission Expires: _____

Inventor: Cheng Cheng

Date 9/11/2017


Inventor Signature _____

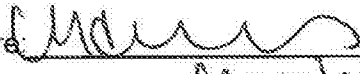
County of Montgomery

State of Maryland

Subscribed and sworn to before me this 11 day of September, 2017.

Seal

MARGARITA C. MEJIA
Notary Public
Montgomery County
Maryland
My Commission Expires November 24, 2019

Notary Signature: 

Notary Public for the State of: Maryland

My Commission Expires: 11-24-19

Inventor: John Mascola

Date 14 Sept 2017 Inventor Signature [Signature]

County of Montgomery
 State of Maryland

Subscribed and sworn to before me this 14 day of September, 2017.

Seal

MARGARITA C. MEJIA
 Notary Public
 Montgomery County
 Maryland
 My Commission Expires November 24, 2019

Notary Signature: [Signature]
 Notary Public for the State of: Maryland
 My Commission Expires: 11.24.19

Inventor: Yaroslav Tsybovsky

Date _____ Inventor Signature _____

County of _____
 State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Signature: _____
 Notary Public for the State of: _____
 My Commission Expires: _____

Inventor: John Mascola

Date _____

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____

Seal

Inventor Signature _____

Notary Signature: _____

Notary Public for the State of: _____

My Commission Expires: _____

Inventor: Yaroslav Tsybovsky

Date 09/17/2017

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____

Seal

Inventor Signature _____

Notary Signature: _____

Notary Public for the State of: _____

My Commission Expires: _____

Inventor: Yongping Yang

Date 9/11/2017 _____
Inventor Signature [Signature] _____

County of Montgomery _____
State of MD _____

Subscribed and sworn to before me this 11 day of September, 2017.

Seal

MARGARITA C. MEJIA
Notary Public
Montgomery County
Maryland
My Commission Expires November 24, 2019

Notary Signature: [Signature] _____
Notary Public for the State of: Maryland _____
My Commission Expires: 11-24-19 _____

Inventor: Paul Thomas

Date _____
Inventor Signature _____

County of _____
State of _____

Subscribed and sworn to before me this _____ day of _____.

Seal

Notary Signature: _____
Notary Public for the State of: _____
My Commission Expires: _____

Inventor: Yongping Yang

Date _____

Inventor Signature

County of _____

State of _____

Subscribed and sworn to before me this _____ day of _____, _____.

Seal

Notary Signature: _____

Notary Public for the State of: _____

My Commission Expires: _____

Inventor: Paul Thomas

Date 2017 October 05

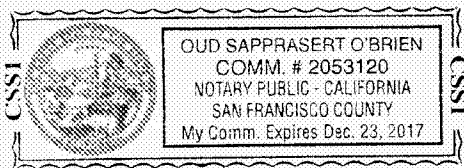
Paul Thomas
Inventor Signature

County of SAN FRANCISCO

State of CALIFORNIA

Subscribed and sworn to before me this 5th day of OCTOBER, 2017.

Seal



Notary Signature: *Oud Sapprasert O'Brien*

Notary Public for the State of: CALIFORNIA

My Commission Expires: 12/23/2017

Inventor: Barney Graham

Date 30 Aug 2017 *Barney Graham*
 Inventor Signature

County of Montgomery
 State of Maryland

Subscribed and sworn to before me this 30th day of August, 2017

Seal

MARGARITA C. MEJIA
 Notary Public
 Montgomery County
 Maryland
 My Commission Expires November 24, 2019

Notary Signature: *Margarita C. Mejia*
 Notary Public for the State of Maryland
 My Commission Expires: 11.24.19

Inventor: Syed Mohammad Moin

Date Sept. 05, 2017 *Syed Mohammad Moin*
 Inventor Signature

County of Montgomery
 State of Maryland

Subscribed and sworn to before me this 5th day of September, 2017

Seal

MARGARITA C. MEJIA
 Notary Public
 Montgomery County
 Maryland
 My Commission Expires November 24, 2019

Notary Signature: *Margarita C. Mejia*
 Notary Public for the State of Maryland
 My Commission Expires: 11.24.19

Inventor: Jeffrey Boyington

Date Sept 11, 2017 Jeffrey C Boyington
Inventor Signature

County of Montgomery
State of Maryland

Subscribed and sworn to before me this 11 day of September 2017

Seal

MARGARITA C. MEJIA
Notary Public
Montgomery County
Maryland
My Commission Expires November 24, 2019

Notary Signature: [Signature]
Notary Public for the State of Maryland
My Commission Expires: 11-24-19

Inventor: Kizzmekia Corbett

Date September 6, 2017 [Signature]
Inventor Signature

County of Montgomery
State of Maryland

Subscribed and sworn to before me this 6th day of September 2017

Seal

MARGARITA C. MEJIA
Notary Public
Montgomery County
Maryland
My Commission Expires November 24, 2019

Notary Signature: [Signature]
Notary Public for the State of Maryland
My Commission Expires: 11-24-19