## 506625345 04/23/2021

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6672154

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
JANICE E. BOERCKER	04/16/2021
JOSEPH G. TISCHLER	04/15/2021
CHASE T. ELLIS	04/21/2021
PAUL D. CUNNINGHAM	04/16/2021
RHONDA M. STROUD	04/20/2021
MICHAEL H. STEWART	04/20/2021
STEVEN C. ERWIN	04/22/2021
SARAH F. BRITTMAN	04/16/2021
PATRICK Y. YEE	04/15/2021

### **RECEIVING PARTY DATA**

Name:	THE GOVERNMENT OF THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY OF THE NAVY
Street Address:	875 NORTH RANDOLPH STREET
Internal Address:	SUITE 1425
City:	ARLINGTON
State/Country:	VIRGINIA
Postal Code:	22203

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	17238265

#### **CORRESPONDENCE DATA**

**Fax Number:** (202)404-7380

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:** 202-404-1558

**Email:** patent.docketing@nrl.navy.mil

Correspondent Name: NAVAL RESEARCH LABORATORY ASSOCIATE COUN

Address Line 1: CODE 1008.2

Address Line 2:4555 OVERLOOK AVENUE, S.W.Address Line 4:WASHINGTON, D.C. 20375-5320

PATENT 506625345 REEL: 056014 FRAME: 0565

ATTORNEY DOCKET NUMBER:	113009-US2
NAME OF SUBMITTER:	JOSLYN BARRITT
SIGNATURE:	/Joslyn Barritt /
DATE SIGNED:	04/23/2021
Total Attachments: 18	
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PATENT REEL: 056014 FRAME: 0566 **ASSIGNMENT BY INVENTORS (US)** 

THIS ASSIGNMENT, made by Janice E. Boercker, Joseph G. Tischler, Chase T.

Ellis, Paul D. Cunningham, Rhonda M. Stroud, Michael H. Stewart, and Steven C. Erwin,

residing in Fairfax, Virginia; Alexandria, Virginia; Silver Spring, Maryland; Baltimore,

Maryland; Washington, DC; Springfield, Virginia; and Alexandria, Virginia, respectively

(the "Assignors");

WHEREAS, Assignors, while employed by the Government of the United States, have

invented certain new and useful improvements in Synthesis of Cu<sub>2-x</sub>S/PbS Core/Shell

Nanocrystals, set forth in U.S. Provisional Patent Application No. 63/014,801 filed on April

24, 2020, and in Cu<sub>2-x</sub>S/PbS Core/Shell Nanocrystals, set forth in an Application for Letters

Patent of the United States filed concurrently herewith (the "Inventions"); and

WHEREAS, The Government of the United States of America, as represented by the

Secretary of the Navy, a Federal Agency (hereinafter referred to as the Government), is

desirous of acquiring the entire right, title and interest in and to the Invention, and in and to

any applications for Letters Patent to be obtained therefor and thereon in the United States and

worldwide (the "Patent Applications"), and in and to any Letters Patent on the Inventions

granted from the Patent Applications, including all regional patents such those from the

European patent organization and all Patent Cooperation Treaty member states;

**WHEREAS**, by acquiring the Assignors' entire right, title, and interest in and to the

invention the Government will be enabled to license the invention and share the income from

the licensing with the Assignors as allowed by law;

**NOW, THEREFORE**, in consideration of the premises and other good and sufficient

consideration, the receipt of which is hereby acknowledged, Assignors hereby assign, transfer,

and set over unto the Government, its successors, legal representatives, and assigns, their entire

right, title, and interest in and to the Invention and the Patent Applications in and to any and all

direct and indirect divisions, continuations, and continuations-in-part of the Patent

Applications; in and to any and all Letters Patent in the United States and worldwide which

may be granted therefor and thereon; in and to any and all reissues, reexaminations, and

extensions of said Letters Patent; and in and to all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Government for its own use and benefit and the use and benefit of its successors, legal representatives, and assigns. This assignment, grant, and transfer is made for and until the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignors had this assignment not been made. This assignment is made nunc pro tunc.

AND for the same consideration, Assignors hereby represent and warrant to the Government, its successors, legal representatives, and assigns that: at the time of execution and delivery of these presents, except for any rights, titles, and/or interests that have arisen to the Government under law or that have already been transferred to the Government, Assignors are the sole and lawful owners of the entire right, title, and interest in and to the abovementioned inventions and application(s) for Letters Patent; that their rights, titles, and/or interest in the above-mentioned inventions and application(s) for Letters Patent are unencumbered; and that Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

AND for the same consideration, Assignors hereby covenant and agree to and with the Government, its successors, legal representatives, and assigns that Assignors will sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of any Letters Patent and applications for Letters Patent for the Invention worldwide, without charge to the Government, its successors, legal representatives, and assigns, whenever counsel of the Government, or counsel of its successors, legal representatives, and assigns, shall advise: that any proceeding in connection with said inventions, or said Patent application(s) for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions including but not limited to interference proceedings, is lawful and desirable; or that any division, continuation, or continuation-in-part of any application(s) for Letters Patent or any reissue, reexamination, or extension of any Letters Patent to be obtained thereon is lawful and desirable.

AND Assignors hereby request the Commissioner of Patent and Trademarks to issue

said Letters Patent of the United States to the Government as Assignee of the Invention and the

Letters Patent to be issued thereon for the sole use and benefit of the Government, its

successors, legal representatives, and assigns.

**AND** Assignors hereby also grant unto the Government the right to claim priority to

the application(s) identified above.

**AND** Assignors hereby further agree to make, execute, and deliver to the Government,

any and all papers, documents, affidavits, statements, or other instruments that may be

necessary in the prosecution of any Patent Application; any continuation, division, or

substitution of any Patent Application; or any application for reissue or extension of any

Letters Patent on the Inventions, and further agree to assist the Government in every way in

protecting the invention as may be requested, provided that any expense arising through such

efforts will be paid by the Government.

**AND** Assignors hereby appoint all practitioners at Customer Number 26384, all of US

Naval Research Laboratory, 4555 Overlook Ave, SW, Code 1008.2, Washington, DC 20375,

jointly, and each of them severally, as our attorneys at law/patent agent(s), with full power of

substitution, delegation and revocation, to prosecute the Patent Applications, to make

alterations and amendments therein, and to transact all business in the U. S. Patent and

Trademark Office connected therewith and in all other Patent Cooperation Treaty member

states with respect to any and all Letters Patent which may be granted therefor and thereon, and

with respect to any and all reissues, reexaminations and extensions of said Letters Patent, and

all rights under the International Convention for the Protection of Industrial Property, the same

to be held and enjoyed by the Government.

Navy Case 113009 Page 3 of 5

**PATENT** 

REEL: 056014 FRAME: 0569

4/16/21 Date:	/Janice E. Boercker/ Signature:
	Signature:  Janice E. Boercker, Assignor
Date:	Signature:  Joseph G. Tischler, Assignor
Date:	Signature: Chase T. Ellis, Assignor
Date:	Signature: Paul D. Cunningham, Assignor
Date:	Signature: Rhonda M. Stroud, Assignor

Date:	Signature:
	Signature:  Janice E. Boercker, Assignor
04/15/2021 Date:	/Joseph Tischler/ Signature:  Joseph G. Tischler, Assignor
Date:	Signature:  Chase T. Ellis, Assignor
Date:	Signature: Paul D. Cunningham, Assignor
Date:	Signature:  Rhonda M. Stroud, Assignor

Date:	Signature:
	Signature:  Janice E. Boercker, Assignor
Date:	Signature:  Joseph G. Tischler, Assignor
	Joseph G. Tischier, Assignor
	/Chase Ellis/
Date: 21 APR 2021	Signature: /Chase Ellis/ Chase T. Ellis, Assignor
	Chase 1. Ems, Assignor
Date:	Signature: Paul D. Cunningham, Assignor
	Paul D. Cunningnam, Assignor
Date:	Signature: Rhonda M. Stroud, Assignor
	Rhonda M. Stroud, Assignor

Date:	Signature:
	Signature:  Janice E. Boercker, Assignor
_	a.
Date:	Signature:  Joseph G. Tischler, Assignor
	Voseph G. Tisemer, Tiseigner
Date:	Signature:
	Chase T. Ellis, Assignor
4/16/2021	
	/Paul D. Cunningham/
Date:	Signature: Paul D. Cunningham, Assignor
	Tuta D. Cummignum, Assignor
Date:	Signature:
	Signature: Rhonda M. Stroud, Assignor

Date:	Signature:
	Signature:  Janice E. Boercker, Assignor
Date:	Signature:
	Joseph G. Tischler, Assignor
Date:	Signature
Date.	Signature: Chase T. Ellis, Assignor
Date:	Signature:
	Signature: Paul D. Cunningham, Assignor
4/20/2021	/Dhomdo Ctroud/
Date:	/Rhonda Stroud/ Signature:
	Signature:  Rhonda M. Stroud, Assignor

04/20/2021	
Date:	/Michael H. Stewart/ Signature: Michael H. Stewart, Assignor
Date:	Signature: Steven C. Erwin, Assignor
Date:	Signature:  Kerry L. Broome Associate Counsel, IP Naval Research Laboratory; Authorized Representative for
	Assignee, The Government of the United States of America

Date:	Signature:
	Michael H. Stewart, Assignor
4/16/2021	
	/Steven Erwin/
Date:	Signature:
	Steven C. Erwin, Assignor
Date: 04/22/2021	Signature: Xerry Z. Brooms
	Kerry L. Broome
	Associate Counsel, IP
	Naval Research Laboratory;
	Authorized Representative for
	Assignee, The Government of the
	United States of America

ASSIGNMENT BY INVENTOR

THIS ASSIGNMENT, made by Sarah F. Brittman, residing in Washington, DC

(hereinafter referred to as Assignor);

WHEREAS, Assignor has invented certain new and useful improvements in Synthesis

of Cu<sub>2-x</sub>S/PbS Core/Shell Nanocrystals, set forth in U.S. Provisional Patent Application No.

63/014,801 filed on April 24, 2020, and in Cu<sub>2-x</sub>S/PbS Core/Shell Nanocrystals, set forth in

an Application for Letters Patent of the United States filed concurrently herewith (the

"Inventions"); and

WHEREAS, The Government of the United States of America, as represented by the

Secretary of the Navy, a Federal Agency (hereinafter referred to as the Government), is

desirous of acquiring the entire right, title and interest in and to the Invention, and in and to

any applications for Letters Patent to be obtained therefor and thereon in the United States and

worldwide (the "Patent Applications"), and in and to any Letters Patent on the Invention

granted from the Patent Applications, including all regional patents such those from the

European patent organization and all Patent Cooperation Treaty member states;

**WHEREAS**, by acquiring the Assignor's entire right, title, and interest in and to the

invention the Government will be enabled to license the invention and share the income from

the licensing with Assignor as allowed by law; and

WHEREAS, Assignor has certain rights in the invention under the Naval Research

Laboratory Postdoctoral Fellow Program administered by the National Research Council;

**NOW, THEREFORE**, in consideration of the premises and other good and sufficient

consideration, the receipt of which is hereby acknowledged, Assignor hereby assigns, transfers,

and sets over unto the Government, its successors, legal representatives, and assigns, their

entire right, title, and interest in and to the Invention and the Patent Applications in and to any

and all direct and indirect divisions, continuations, and continuations-in-part of the Patent

Applications; in and to any and all Letters Patent in the United States and worldwide which

may be granted therefor and thereon; in and to any and all reissues, reexaminations, and

extensions of said Letters Patent; and in and to all rights under the International Convention

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PATENT

REEL: 056014 FRAME: 0577

for the Protection of Industrial Property, the same to be held and enjoyed by the Government for its own use and benefit and the use and benefit of its successors, legal representatives, and assigns. This assignment, grant, and transfer is made for and until the full end of the term or

terms for which Letters Patent may be granted and/or extended, as fully and entirely as the

same would have been held and enjoyed by Assignor had this assignment not been made. This

assignment is made nunc pro tunc.

AND for the same consideration, Assignor hereby represents and warrants to the

Government, its successors, legal representatives, and assigns that: at the time of execution

and delivery of these presents, except for any rights, titles, and/or interests that have arisen to

the Government under law or that have already been transferred to the Government, Assignor

is the sole and lawful owners of the Assignor's entire right, title, and interest in and to the

above-mentioned inventions and application(s) for Letters Patent; that such rights, titles, and/or

interest in the above-mentioned inventions and application(s) for Letters Patent are

unencumbered; and that Assignor has good and full right and lawful authority to sell and

convey the same in the manner herein set forth.

**AND** for the same consideration, Assignor hereby covenants and agrees to and with the

Government, its successors, legal representatives, and assigns that Assignor will sign all papers

and documents, take all lawful oaths and do all acts necessary or required to be done for the

procurement, maintenance, enforcement, and defense of any Letters Patent and applications for

Letters Patent for the Invention worldwide, without charge to the Government, its successors,

legal representatives, and assigns, whenever counsel of the Government, or counsel of its

successors, legal representatives, and assigns, shall advise: that any proceeding in connection

with said inventions, or said Patent application(s) for Letters Patent, or any proceeding in

connection with any Letters Patent or applications for Letters Patent for said inventions

including but not limited to interference proceedings, is lawful and desirable; or that any

division, continuation, or continuation-in-part of any application(s) for Letters Patent or any

reissue, reexamination, or extension of any Letters Patent to be obtained thereon is lawful and

desirable.

AND Assignor hereby requests the Commissioner of Patent and Trademarks to issue

said Letters Patent of the United States to the Government as Assignee of the Invention and the

Letters Patent to be issued thereon for the sole use and benefit of the Government, its

successors, legal representatives, and assigns.

AND Assignor hereby also grants unto the Government the right to claim priority to

the application(s) identified above.

**AND** Assignor hereby further agrees to make, execute, and deliver to the Government,

any and all papers, documents, affidavits, statements, or other instruments that may be

necessary in the prosecution of any Patent Application; any continuation, division, or

substitution of any Patent Application; or any application for reissue or extension of any

Letters Patent on the Inventions, and further agrees to assist the Government in every way in

protecting the invention as may be requested, provided that any expense arising through such

efforts will be paid by the Government.

**AND** Assignor hereby appoints all practitioners at Customer Number 26384, all of US

Naval Research Laboratory, 4555 Overlook Ave, SW, Code 1008.2, Washington, DC 20375,

jointly, and each of them severally, as our attorneys at law/patent agent(s), with full power of

substitution, delegation and revocation, to prosecute the Patent Applications, to make

alterations and amendments therein, and to transact all business in the U. S. Patent and

Trademark Office connected therewith and in all other Patent Cooperation Treaty member

states with respect to any and all Letters Patent which may be granted therefor and thereon, and

with respect to any and all reissues, reexaminations and extensions of said Letters Patent, and

all rights under the International Convention for the Protection of Industrial Property, the same

to be held and enjoyed by the Government.

**AND** Assignor hereby grants all practitioners at Customer Number 26384 the power to

insert on this Assignment any further identification which may be necessary or desirable in

order to comply with the rules of any foreign patent office for recordation of this document.

16 April 2021

/Sarah Brittman/

Date:

Signature:

Sarah F. Brittman, Assignor

Date:	04/22/2021	Signature: LIMY L. Brooms	
		ย	

Kerry L. Broome
Associate Counsel, IP
Naval Research Laboratory;
Authorized Representative for
Assignee, The Government of the
United States of America

ASSIGNMENT BY INVENTOR

THIS ASSIGNMENT, made by Patrick Y. Yee, residing in Washington, DC

(hereinafter referred to as Assignor);

WHEREAS, Assignor has invented certain new and useful improvements in Synthesis

of Cu<sub>2-x</sub>S/PbS Core/Shell Nanocrystals, set forth in U.S. Provisional Patent Application No.

63/014,801 filed on April 24, 2020, and in Cu<sub>2-x</sub>S/PbS Core/Shell Nanocrystals, set forth in

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WHEREAS, The Government of the United States of America, as represented by the

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WHEREAS, by acquiring the Assignor's entire right, title, and interest in and to the

invention the Government will be enabled to license the invention and share the income from

the licensing with Assignor as allowed by law; and

WHEREAS, Assignor has certain rights in the invention under the Naval Research

Laboratory Postdoctoral Fellow Program administered by the National Research Council;

**NOW, THEREFORE**, in consideration of the premises and other good and sufficient

consideration, the receipt of which is hereby acknowledged, Assignor hereby assigns, transfers,

and sets over unto the Government, its successors, legal representatives, and assigns, their

entire right, title, and interest in and to the Invention and the Patent Applications in and to any

and all direct and indirect divisions, continuations, and continuations-in-part of the Patent

Applications; in and to any and all Letters Patent in the United States and worldwide which

may be granted therefor and thereon; in and to any and all reissues, reexaminations, and

extensions of said Letters Patent; and in and to all rights under the International Convention

for the Protection of Industrial Property, the same to be held and enjoyed by the Government

for its own use and benefit and the use and benefit of its successors, legal representatives, and

assigns. This assignment, grant, and transfer is made for and until the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the

same would have been held and enjoyed by Assignor had this assignment not been made. This

assignment is made nunc pro tunc.

**AND** for the same consideration, Assignor hereby represents and warrants to the

Government, its successors, legal representatives, and assigns that: at the time of execution

and delivery of these presents, except for any rights, titles, and/or interests that have arisen to

the Government under law or that have already been transferred to the Government, Assignor

is the sole and lawful owners of the Assignor's entire right, title, and interest in and to the

above-mentioned inventions and application(s) for Letters Patent; that such rights, titles, and/or

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unencumbered; and that Assignor has good and full right and lawful authority to sell and

convey the same in the manner herein set forth.

**AND** for the same consideration, Assignor hereby covenants and agrees to and with the

Government, its successors, legal representatives, and assigns that Assignor will sign all papers

and documents, take all lawful oaths and do all acts necessary or required to be done for the

procurement, maintenance, enforcement, and defense of any Letters Patent and applications for

Letters Patent for the Invention worldwide, without charge to the Government, its successors,

legal representatives, and assigns, whenever counsel of the Government, or counsel of its

successors, legal representatives, and assigns, shall advise: that any proceeding in connection

with said inventions, or said Patent application(s) for Letters Patent, or any proceeding in

connection with any Letters Patent or applications for Letters Patent for said inventions

including but not limited to interference proceedings, is lawful and desirable; or that any

division, continuation, or continuation-in-part of any application(s) for Letters Patent or any

reissue, reexamination, or extension of any Letters Patent to be obtained thereon is lawful and

desirable.

**AND** Assignor hereby requests the Commissioner of Patent and Trademarks to issue

said Letters Patent of the United States to the Government as Assignee of the Invention and the

Letters Patent to be issued thereon for the sole use and benefit of the Government, its

successors, legal representatives, and assigns.

Navy Case 113009 Page 2 of 4

PATENT

REEL: 056014 FRAME: 0582

**AND** Assignor hereby also grants unto the Government the right to claim priority to the application(s) identified above.

**AND** Assignor hereby further agrees to make, execute, and deliver to the Government,

any and all papers, documents, affidavits, statements, or other instruments that may be necessary in the prosecution of any Patent Application; any continuation, division, or

substitution of any Patent Application; or any application for reissue or extension of any

Letters Patent on the Inventions, and further agrees to assist the Government in every way in

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efforts will be paid by the Government.

AND Assignor hereby appoints all practitioners at Customer Number 26384, all of US

Naval Research Laboratory, 4555 Overlook Ave, SW, Code 1008.2, Washington, DC 20375,

jointly, and each of them severally, as our attorneys at law/patent agent(s), with full power of

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alterations and amendments therein, and to transact all business in the U. S. Patent and

Trademark Office connected therewith and in all other Patent Cooperation Treaty member

states with respect to any and all Letters Patent which may be granted therefor and thereon, and

with respect to any and all reissues, reexaminations and extensions of said Letters Patent, and

all rights under the International Convention for the Protection of Industrial Property, the same

to be held and enjoyed by the Government.

**AND** Assignor hereby grants all practitioners at Customer Number 26384 the power to

insert on this Assignment any further identification which may be necessary or desirable in

order to comply with the rules of any foreign patent office for recordation of this document.

April 15, 2021

/ Patrick Yee /

Date:

Signature:

Patrick Y. Yee, Assignor

Date:	04/22/2021	Signature:	Xerry	1 L.	Broome

Kerry L. Broome
Associate Counsel, IP
Naval Research Laboratory;
Authorized Representative for
Assignee, The Government of the
United States of America

Navy Case 113009 Page 4 of 4

**RECORDED: 04/23/2021**