

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:

NEW ASSIGNMENT

NATURE OF CONVEYANCE:

ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Jiguang Zhang	02/05/2009
Jun Liu	02/05/2009
Zhenguo Yang	02/05/2009
Guanguang Xia	02/05/2009
Leonard S. Fifield	02/05/2009
Donghai Wang	02/05/2009
Daiwon Choi	02/05/2009
Gordon L. Graff	02/05/2009
Larry R. Pederson	02/05/2009

RECEIVING PARTY DATA

Name:	Battelle Memorial Institute
Street Address:	P.O. Box 999
Internal Address:	M/S K1-53
City:	Richland
State/Country:	WASHINGTON
Postal Code:	99352

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	12368711

CORRESPONDENCE DATA

Fax Number: (509)375-4487

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 509-375-6866

Email: allan.tuan@pnl.gov

Correspondent Name: BATTELLE MEMORIAL INSTITUTE ATTN: IP SER

Address Line 1: P. O. BOX 999

PATENT

REEL: 022236 FRAME: 0136

500777717

CH \$40.00 12368711

Address Line 2:	M/S K1-53
Address Line 4:	RICHLAND, WASHINGTON 99352

ATTORNEY DOCKET NUMBER:	16176-B
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NAME OF SUBMITTER:	Allan C. Tuan
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<p>Total Attachments: 12</p> <p>source=assignment#page1.tif</p> <p>source=assignment#page2.tif</p> <p>source=assignment#page3.tif</p> <p>source=assignment#page4.tif</p> <p>source=assignment#page5.tif</p> <p>source=assignment#page6.tif</p> <p>source=assignment#page7.tif</p> <p>source=assignment#page8.tif</p> <p>source=assignment#page9.tif</p> <p>source=assignment#page10.tif</p> <p>source=assignment#page11.tif</p> <p>source=assignment#page12.tif</p>

ASSIGNMENT OF PATENT RIGHTS

Jiguang Zhang
Jun Liu
Zhenguo Yang
Guanguang Xia
Leonard S. Fifield
Donghai Wang
Daiwon Choi
Gordon L. Graff
Larry R. Pederson

To
Battelle Memorial Institute

WHEREAS, we, Jiguang Zhang of Richland, County of Benton, State of Washington; Jun Liu of Richland, County of Benton, State of Washington; Zhenguo Yang of Richland, County of Benton, State of Washington; Guanguang Xia of Pasco, County of Franklin, State of Washington; Leonard S. Fifield of Richland, County of Benton, State of Washington; Donghai Wang of Richland, County of Benton, State of Washington; Daiwon Choi of Kennewick, County of Benton, State of Washington, Gordon L. Graff of West Richland, County of Benton, State of Washington; and Larry R. Pederson of Kennewick, County of Benton, State of Washington; hereinafter INVENTORS, have made certain inventions related to, **NANOWIRE SYNTHESIS FROM VAPOR AND SOLID SOURCES**, including those, described and claimed in various disclosures including:

U.S. Patent Application No. 12/368,711, filed February 10, 2009 Entitled: **NANOWIRE SYNTHESIS FROM VAPOR AND SOLID SOURCES**

For which we are about to make application for Letters Patent of the United States; collectively referred to hereinafter as INVENTIONS;

WHEREAS Battelle Memorial Institute, a corporation of Ohio, organized and existing under the laws of the State of Ohio, and having a place of business in the City of Richland, Washington, is desirous of acquiring all right, title, and interest in the said INVENTIONS and in all patents or patent applications sought or obtained therefor;

NOW, THEREFORE, be it known to all those who may be concerned, that for and in consideration of the sum of One Dollar (\$1.00) each, and other good and valuable considerations, the receipt of which is hereby acknowledged, We the INVENTORS have each sold, assigned, and transferred, and by these presents do sell, assign and transfer unto the said Battelle Memorial Institute, the entire right, title, and interest in and to the INVENTIONS shown, described, or claimed herein, and the full and exclusive right, title, and interest to any and all patents and patent applications that show, describe or claim said INVENTIONS including but not limited to those applications referenced herein, and in and to any extensions, continuations, including continuations in part, reissues, divisions, or renewals thereof; and We each do hereby authorize and request the Commissioner of Patents or other proper Officer, to issue such Letters Patent, or any of them to the said Battelle Memorial Institute, as the assignee of my entire right, title, and interest in and to the same for the sole use and benefit of the said Battelle Memorial Institute, and its successors or assigns.

We each further covenant and agree that we each will, at the request and expense of the said Battelle Memorial Institute, execute such other and further assurances of title as may be necessary or proper to fully convey the interest herein sought to be conveyed; and that each of us will, at the request and expense of the said Battelle Memorial

Institute, execute such application papers as may be desired by the said Battelle Memorial Institute, for the filing of any division or renewal of the application herein conveyed, or for reissues or extensions (including continuations or continuations in part applications), or any Letters Patent that may be granted upon said application, and will execute such Supplemental Oaths and Preliminary Statements, or other papers as desired by the said Battelle Memorial Institute.

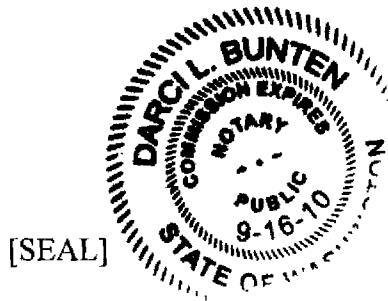
We each further assign unto the said Battelle Memorial Institute, the whole right, title, and interest to the invention disclosed in the application throughout all countries foreign to the United States, and do hereby authorize the said Battelle Memorial Institute to apply for patents therefor in its own name in countries where such procedure is proper and to claim the benefit of International Conventions and agree to execute applications of the said invention in the several countries where it is necessary that the same be executed by the inventors, and to execute assignments of such applications and the patents to be obtained therefor to the said Battelle Memorial Institute, the assignee herein, as well as all other necessary papers.

Executed at Richland, State of Washington this 5 day of February, 2009.

Jiguang Zhang
Jiguang Zhang

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Jiguang Zhang who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



Darci L. Buntin
Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

Jun Liu
Jun Liu

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Jun Liu who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.

[SEAL]



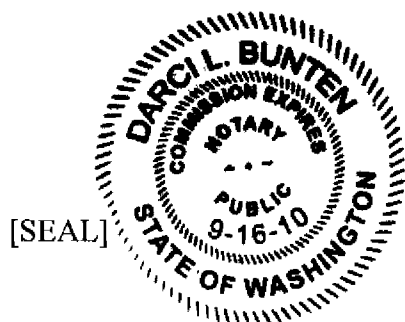
Darci L. Buntin
Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

Zhenguó Yang
Zhenguo Yang

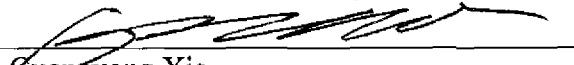
STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Zhenguó Yang who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



Darci L. Buntin
Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

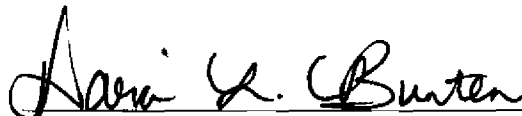

Guanguang Xia

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Guanguang Xia who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.

[SEAL]



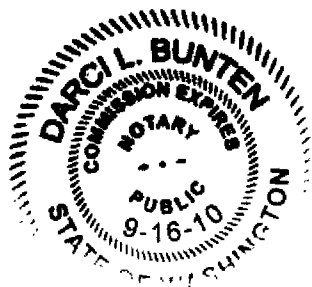

Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

Leonard S. Fifield
Leonard S. Fifield

STATE OF WASHINGTON)
) ss.
COUNTY OF Benton)

This 5th day of February, 2009, before me personally came the above-named Leonard S. Fifield who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



[SEAL]

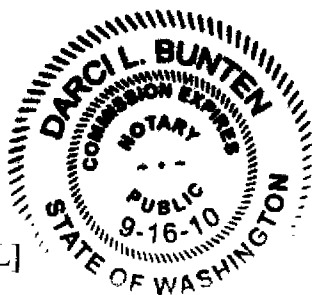
Darci L. Buntan
Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

[Signature]
Donghai Wang

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Donghai Wang who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



[SEAL]

[Signature]
Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

Daiwon Choi
Daiwon Choi

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Daiwon Choi who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



[SEAL]

Darci L. Buntin
Notary Public for the State of Washington.
My commission expires: 9/16/10.

Executed at Richland, State of Washington this 5th day of February, 2009.

Gordon L. Graff
Gordon L. Graff

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Gordon L. Graff who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.

[SEAL]



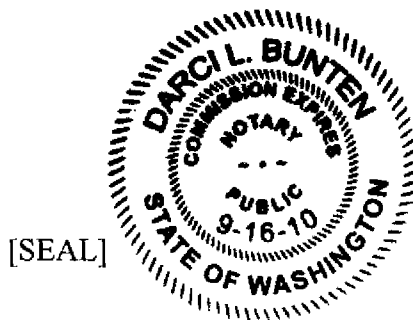
Darcil L. Buntin
Notary Public for the State of Washington.
My commission expires: 9/16/10

Executed at Richland, State of Washington this 5th day of February, 2009.

Larry R. Pederson
Larry R. Pederson

STATE OF WASHINGTON)
) ss.
County of Benton)

This 5th day of February, 2009, before me personally came the above-named Larry R. Pederson who executed the foregoing instrument in my presence, and who acknowledged to me that he executed the same of his own free will for the purposes set forth therein.



Darci L. Bunten
Notary Public for the State of Washington.
My commission expires: 9/16/10.