

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT														
NATURE OF CONVEYANCE:	ASSIGNMENT														
<b>CONVEYING PARTY DATA</b>															
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Gilbert M. Brown</td> <td>12/13/2011</td> </tr> <tr> <td>Timothy J. McIntyre</td> <td>12/12/2011</td> </tr> <tr> <td>Xiago-Guang Sun</td> <td>12/12/2011</td> </tr> <tr> <td>Mariappan Parans Paranthaman</td> <td>12/12/2011</td> </tr> <tr> <td>Sheng Dai</td> <td>12/12/2011</td> </tr> <tr> <td>Nancy J. Dudney</td> <td>12/12/2011</td> </tr> </tbody> </table>		Name	Execution Date	Gilbert M. Brown	12/13/2011	Timothy J. McIntyre	12/12/2011	Xiago-Guang Sun	12/12/2011	Mariappan Parans Paranthaman	12/12/2011	Sheng Dai	12/12/2011	Nancy J. Dudney	12/12/2011
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Sheng Dai	12/12/2011														
Nancy J. Dudney	12/12/2011														
<b>RECEIVING PARTY DATA</b>															
Name:	UT-Battelle, LLC														
Street Address:	One Bethel Valley Road														
Internal Address:	4500N, MS-6258														
City:	Oak Ridge														
State/Country:	TENNESSEE														
Postal Code:	37831-6258														
<b>PROPERTY NUMBERS Total: 1</b>															
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13247417</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13247417										
Property Type	Number														
Application Number:	13247417														
<b>CORRESPONDENCE DATA</b>															
Fax Number:	(865)574-0381														
Phone:	(865) 574-0393														
Email:	bowmanke@ornl.gov														
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>															
Correspondent Name:	Edna I. Gergel														
Address Line 1:	One Bethel Valley Road														
Address Line 2:	4500N, MS-6258														
Address Line 4:	Oak Ridge, TENNESSEE 37831-6258														

CH \$40.00 13247417

ATTORNEY DOCKET NUMBER:	2617 UTB
NAME OF SUBMITTER:	Karen E. Bowman
Total Attachments: 8 source=2167 UTB Assignment#page1.tif source=2167 UTB Assignment#page2.tif source=2167 UTB Assignment#page3.tif source=2167 UTB Assignment#page4.tif source=2167 UTB Assignment#page5.tif source=2167 UTB Assignment#page6.tif source=2167 UTB Assignment#page7.tif source=2167 UTB Assignment#page8.tif	

# RECORDATION FORM COVER SHEET PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

**1. Name of conveying party(ies)**  
 Gilbert M. Brown  
 Timothy J. McIntyre  
 Xiago-Guang Sun  
 Mariappan Parans Paranthaman

Sheng Dai  
 Nancy J. Dudney

Additional name(s) of conveying party(ies) attached?  Yes  No

**2. Name and address of receiving party(ies)**  
 Name: UT-Battelle, LLC  
 Internal Address: 4500N, MS-6258  
 Street Address: One Bethel Valley Road  
 City: Oak Ridge  
 State: TN  
 Country: USA Zip: 37831-6258

Additional name(s) & address(es) attached?  Yes  No

**3. Nature of conveyance/Execution Date(s):**  
 Execution Date(s) 12/13/2011

Assignment  Merger  
 Security Agreement  Change of Name  
 Joint Research Agreement  
 Government Interest Assignment  
 Executive Order 9424, Confirmatory License  
 Other \_\_\_\_\_

**4. Application or patent number(s):**  This document is being filed together with a new application.

A. Patent Application No.(s)  
13/247,417

B. Patent No.(s)

Additional numbers attached?  Yes  No

**5. Name and address to whom correspondence concerning document should be mailed:**  
 Name: Edna I. Gergel  
 Internal Address: UT-Battelle, LLC  
 Street Address: One Bethel Valley Road  
4500N, MS-6258  
 City: Oak Ridge  
 State: TN Zip: 37831-6258  
 Phone Number: (865) 574-0393  
 Fax Number: (865) 574-0381  
 Email Address: gergelei@ornl.gov

**6. Total number of applications and patents involved:** 1

**7. Total fee (37 CFR 1.21(h) & 3.41)** \$ 40.00

Authorized to be charged by credit card  
 Authorized to be charged to deposit account  
 Enclosed  
 None required (government interest not affecting title)

**8. Payment Information**

a. Credit Card Last 4 Numbers \_\_\_\_\_  
 Expiration Date \_\_\_\_\_

b. Deposit Account Number 13-1958  
 Authorized User Name Karen E. Bowman

**9. Signature:** \_\_\_\_\_ /Edna I. Gergel/ \_\_\_\_\_ 12/21/2011  
 Signature Date

Edna I. Gergel, Reg. No. 50819  
 Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 8

## ASSIGNMENT

WHEREAS, we the below-named inventors whose residences are as stated below, have an interest in an invention entitled:

### **HIGH ENERGY DENSITY ALUMINUM BATTERY**

(hereinafter referred to as "Subject Invention") for which are described in United States Patent Application No. 13/247,417 filed on September 28, 2011, and

WHEREAS, UT-BATTELLE, LLC, a limited liability company of the State of Tennessee, having an office at One Bethel Valley Road, P. O. Box 2008, Oak Ridge, Tennessee 37831-6258, hereinafter referred to as "ASSIGNEE," is desirous of acquiring our entire right, title and interest of the undersigned in the same;

NOW, THEREFORE, in accordance with the terms of our employment agreement with ASSIGNEE and for good and valuable consideration, the receipt of which is hereby acknowledged, we hereby assign and transfer to ASSIGNEE and its successors in interest our entire right, title and interest in the Subject Invention to all rights of priority thereto pursuant to the International Convention for the Protection of Industrial Property, and in any Letters Patent on the Subject Invention that may be granted in the United States of America and in any and all foreign countries, including any and all Letters Patent that are divisions, reissues, continuations, substitutions or extensions of any Letters Patent or patent applications therefor on the Subject Invention.

We hereby authorize and request the Commissioner of the United States Patent and Trademark Office and the officials of any and all foreign countries to issue any and all of said Letters Patent, when granted, to the ASSIGNEE.

Further, we hereby agree to communicate to said ASSIGNEE or its representatives any facts known to us respecting said Subject Invention, to testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, substitution, renewal and reissue applications, to execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, and to make all rightful oaths and generally do everything possible to aid said ASSIGNEE and its representatives to obtain and enforce proper protection for said Subject Invention in the United States of America and in any and all foreign countries.

We further agree that the terms, covenants and conditions of this assignment shall inure to the benefit of ASSIGNEE, its successors, assigns, and legal representatives, and shall be binding on us, our heirs, legal representatives, and assigns.

Full Name of First Inventor: **Gilbert M. Brown**

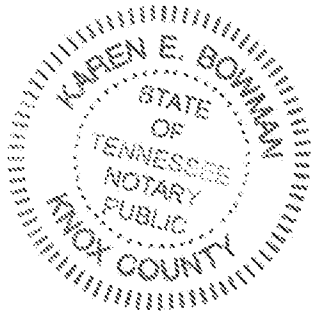
Signature: *Gilbert M Brown* Date: 12/13/2011

Residence: 1306 Kensington Drive, Knoxville, Tennessee 37922

State of Tennessee )  
County of Roane )

On this 13<sup>th</sup> day of December, 2011, before me, a Notary Public in and for the County and State aforesaid, appeared **GILBERT M. BROWN**, to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.



*Karen E. Bowman*  
Notary Public

SEAL

My Commission Expires: ~~My Commission Expires~~ May 4, 2014

Full name of inventor: Timothy J. McIntyre

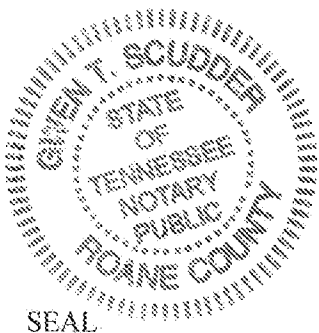
Signature: [Handwritten Signature] Date: 12/12/11

Residence: 208 Lawton Boulevard, Knoxville, Tennessee 37934

State of Tennessee )  
County of Roane )

On this 12 day of December, 2011, before me, a Notary Public in and for the County and State aforesaid, appeared **TIMOTHY J. MCINTYRE** to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.



[Handwritten Signature]  
Notary Public

My Commission Expires:

My Commission Expires Thursday, August 14, 2012.

Full name of inventor: **Xiago-Guang Sun**

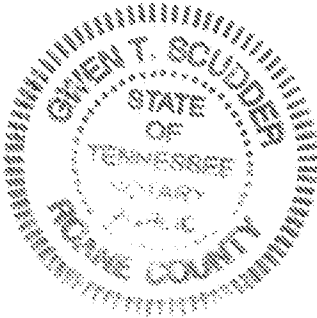
Signature: *Xiago-Guang Sun* Date: 12/12/11

Residence: 10724 Olive Grove Lane, Knoxville, Tennessee 37934

State of Tennessee )  
County of Roane )

On this 12 day of December, 2011, before me, a Notary Public in and for the County and State aforesaid, appeared **XIAGO-GUANG SUN** to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.



*Owen T. Scudder*  
Notary Public

SEAL

My Commission Expires:

My Commission Expires Thursday, August 14, 2012.

Full name of inventor: Mariappan Parans Paranthaman

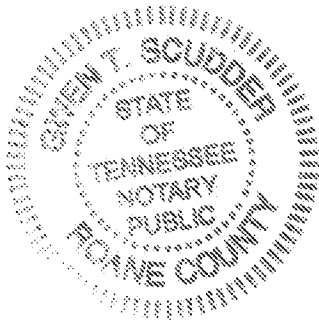
Signature: M. Paranthaman Date: 12/12/2011

Residence: 654 Spring Branch Lane, Knoxville, Tennessee 37934

State of Tennessee )  
County of Boone )

On this 12 day of December, 2011, before me, a Notary Public in and for the County and State aforesaid, appeared **MARIAPPAN PARANS PARANTHAMAN**, to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.



Chen T. Scuddey  
Notary Public

SEAL

My Commission Expires:

My Commission Expires Thursday, August 14, 2012.



Full name of inventor: Sheng Dai

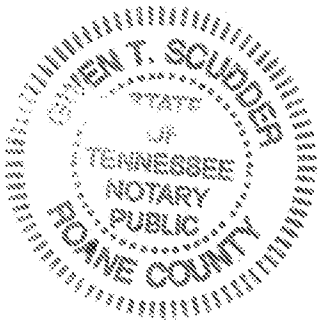
Signature: Sheng Dai Date: 12/12/2011

Residence: 698 Brochardt Boulevard, Knoxville, Tennessee 37934

State of Tennessee )  
County of Roane )

On this 12 day of December, 2011, before me, a Notary Public in and for the County and State aforesaid, appeared **SHENG DAI** to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.



Green T. Souders  
Notary Public

SEAL

My Commission Expires:

My Commission Expires Thursday, August 14, 2012.

Full name of inventor: Nancy J. Dudney

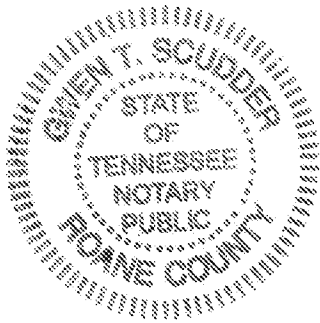
Signature: Nancy J. Dudney Date: 12/12/2011

Residence: 11634 South Monticello Drive, Knoxville, Tennessee 37934

State of Tennessee )  
County of ROANE )

On this 12 day of December, 2011, before me, a Notary Public in and for the County and State aforesaid, appeared **NANCY J. DUDNEY**, to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.



Owen T. Scudder  
Notary Public

SEAL

My Commission Expires:

My Commission Expires Thursday, August 14, 2012.