

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
Mingyao XU	08/27/2012
RECEIVING PARTY DATA	
Name:	SUMITOMO HEAVY INDUSTRIES, LTD.
Street Address:	1-1, Osaki 2-chome, Shinagawa-ku
City:	Tokyo
State/Country:	JAPAN
Postal Code:	141-6025
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	13603690
CORRESPONDENCE DATA	
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<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>	
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Address Line 2:	Suite 400
Address Line 4:	Washington, DISTRICT OF COLUMBIA 20007
ATTORNEY DOCKET NUMBER:	12SJ-023
NAME OF SUBMITTER:	Chris Tanner
Total Attachments: 3 source=12SJ-023AssignmentRecordation#page1.tif source=12SJ-023AssignmentRecordation#page2.tif source=12SJ-023AssignmentRecordation#page3.tif	

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PATENT

**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.

<b>1. Name of conveying party(ies)</b> Mingyao XU  Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>2. Name and address of receiving party(ies)</b> Name: <u>SUMITOMO HEAVY INDUSTRIES, LTD.</u> Internal Address: _____ _____ Street Address: <u>1-1, Osaki 2-chome, Shinagawa-ku</u> _____ City: <u>Tokyo</u> State: _____ Country: <u>Japan</u> Zip: <u>141-6025</u> Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>3. Nature of conveyance/Execution Date(s):</b> Execution Date(s) <u>August 27, 2012</u> <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Joint Research Agreement <input type="checkbox"/> Government Interest Assignment <input type="checkbox"/> Executive Order 9424, Confirmatory License <input type="checkbox"/> Other _____		<b>4. Application or patent number(s):</b> <input checked="" type="checkbox"/> This document is being filed together with a new application. A. Patent Application No.(s) _____ B. Patent No.(s) _____  Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>5. Name and address to whom correspondence concerning document should be mailed:</b> Name: <u>IPUSA, PLLC</u> Internal Address: _____ _____ Street Address: <u>1054 31st Street, N.W., Suite 400</u> _____ City: <u>Washington</u> State: <u>DC</u> Zip: <u>20007</u> Phone Number: <u>202-797-4181</u> Fax Number: <u>202-797-8188</u> Email Address: <u>ipusa@ipusapat.com</u>		<b>6. Total number of applications and patents involved:</b> <u>1</u> <b>7. Total fee (37 CFR 1.21(h) &amp; 3.41)</b> \$ <u>40.00</u> <input type="checkbox"/> Authorized to be charged by credit card <input checked="" type="checkbox"/> Authorized to be charged to deposit account <input type="checkbox"/> Enclosed <input type="checkbox"/> None required (government interest not affecting title) <b>8. Payment Information</b> a. Credit Card Last 4 Numbers _____ Expiration Date _____ b. Deposit Account Number <u>50-4424</u> Authorized User Name <u>Christopher M. Tanner</u>	
<b>9. Signature:</b> <u>CM Tanner</u> <u>Sep 5, 2012</u> Signature Date Christopher M. Tanner Name of Person Signing Total number of pages including cover sheet, attachments, and documents: <u>3</u>			

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:  
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

## ASSIGNMENT

**THIS ASSIGNMENT**, by Mingyao XU (hereinafter referred to as "Assignor"), residing at Nishitokyo-shi, Tokyo, Japan;

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

### REGENERATOR, GM REFRIGERATOR, AND PULSE TUBE REFRIGERATOR

set forth in a patent application for Letters Patent of the United States, executed concurrently herewith; and

**WHEREAS**, SUMITOMO HEAVY INDUSTRIES, LTD. (hereinafter referred to as "Assignee"), having offices at 1-1, Osaki 2-chome, Shinagawa-ku, Tokyo 141-6025 JAPAN, is desirous of acquiring the entire right, title and interest in and to said inventions and said application for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefor and thereon;

**NOW, THEREFORE**, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignor has sold, assigned, transferred and set over, and by these presents does sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and application for Letters Patent, and in and to any and all direct and indirect divisions, continuations and continuation-in-part of said application, and any and all Letters Patent in the United States and all foreign countries which may be granted therefor and thereon, and 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 Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to 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 sale and Assignment not been made;

**AND** for the same consideration, Assignor hereby represents and warrants to Assignee, 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 Assignee under the law or that have already been transferred to Assignee, Assignor is the sole and lawful owner of the entire right, title and interest in and to said inventions and application for Letters Patent above-mentioned, and that the same 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 Assignee, 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 said inventions, without charge to Assignee, its successors, legal representatives, and assigns, whenever counsel of Assignee, or counsel of its successors, legal representatives and assigns shall advise; that any proceeding in connection with said inventions, or said patent application for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions in any country, including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of any application 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 that the Director of the United States Patent and Trademark Office issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the said Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns;

AND Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document: All practitioners associated with the Customer Number 77464.

AND Assignor acknowledges an obligation of assignment of this invention to Assignee at the time the invention was made.

August 27, 2012

Date

  
Mingyao XU