

PATENT ASSIGNMENT

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| SUBMISSION TYPE: | NEW ASSIGNMENT | | | | | | |
|--|---------------------------------------|---------------|----------------|---------------------|------------|----------------|------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT | | | | | | |
| CONVEYING PARTY DATA | | | | | | | |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Heinz Lendenmann</td> <td>12/03/2012</td> </tr> <tr> <td>Vesa Osterholm</td> <td>12/03/2012</td> </tr> </tbody> </table> | | Name | Execution Date | Heinz Lendenmann | 12/03/2012 | Vesa Osterholm | 12/03/2012 |
| Name | Execution Date | | | | | | |
| Heinz Lendenmann | 12/03/2012 | | | | | | |
| Vesa Osterholm | 12/03/2012 | | | | | | |
| RECEIVING PARTY DATA | | | | | | | |
| Name: | ABB Research Ltd. | | | | | | |
| Street Address: | Affolternstrasse 44 | | | | | | |
| City: | CH-8050 Zurich | | | | | | |
| State/Country: | SWITZERLAND | | | | | | |
| PROPERTY NUMBERS Total: 1 | | | | | | | |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13715597</td> </tr> </tbody> </table> | | Property Type | Number | Application Number: | 13715597 | | |
| Property Type | Number | | | | | | |
| Application Number: | 13715597 | | | | | | |
| CORRESPONDENCE DATA | | | | | | | |
| Fax Number: | 2033271096 | | | | | | |
| <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> | | | | | | | |
| Phone: | 203-324-6155 | | | | | | |
| Email: | ccobb@ssjr.com | | | | | | |
| Correspondent Name: | Wesley W. Whitmyer, Jr. | | | | | | |
| Address Line 1: | 986 Bedford Street | | | | | | |
| Address Line 2: | St. Onge Steward Johnston & Reens LLC | | | | | | |
| Address Line 4: | Stamford, CONNECTICUT 06905 | | | | | | |
| ATTORNEY DOCKET NUMBER: | 04189-P0120A | | | | | | |
| NAME OF SUBMITTER: | Wesley W. Whitmyer, Jr. | | | | | | |
| <p>Total Attachments: 3 source=Assignment to ABB Research Ltd#page1.tif source=Assignment to ABB Research Ltd#page2.tif source=Assignment to ABB Research Ltd#page3.tif</p> | | | | | | | |

OP \$40.00 13715597

Assignment

WHEREAS, We, the undersigned inventors, have made certain inventions or discoveries (or both) as set forth in an application for Letters Patent of the United States of America, entitled **SYNCHRONOUS RELUCTANCE MACHINE USING ROTOR FLUX BARRIERS AS COOLING CHANNELS**, bearing U.S. Patent Application No. 13/715,597 and filed on December 14, 2012;

WHEREAS, ABB Research Ltd., a company organized and existing under the laws of Switzerland, and having an office and place of business at Affolternstrasse 44; CH-8050 Zurich, Switzerland, and, together with its successors and assigns is hereinafter called "Assignee", and is desirous of acquiring the title, rights, benefits and privileges hereinafter recited;

NOW THEREFORE, for valuable consideration furnished by Assignee to us, receipt and sufficiency of which we hereby acknowledge, we hereby, without reservation:

1. Assign, transfer and convey to Assignee the entire right, title and interest in and to said inventions and discoveries, said application for Letters Patent of the United States of America, any and all other applications for Letters Patent on said inventions and discoveries in any and all countries, including all divisional, renewal, substitute, continuation and convention applications based in whole or in part upon said inventions or discoveries, or upon said applications, and any and all Letters Patent, reissues and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent;

2. Authorize Assignee to file patent applications in any or all countries on any or all of said inventions and discoveries in our names or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or otherwise;

3. Authorize and request the Commissioner of Patents of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patents to Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

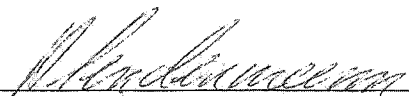
4. Warrant that we have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that we have good right to assign the same to Assignee without encumbrance;

5. Bind our heirs, legal representatives and assigns, as well as ourselves, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to us or them, all acts reasonably serving to assure that said inventions and discoveries, said patent applications and said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and

enjoyed by us, our heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents, including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to us relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in our control or in the control of our heirs, legal representatives or assigns, which may be useful for establishing the facts of our conceptions, disclosures, and reduction to practice of said inventions and discoveries.

IN WITNESS WHEREOF, we, Heinz Lendenmann and Vesa Osterholm, have hereunto set our hands and affixed our seals.

2012-12-03
Date


Heinz Lendenmann
Foreningsgatan 27
S-722 18 Vasteras, Sweden

Declaration of Witness

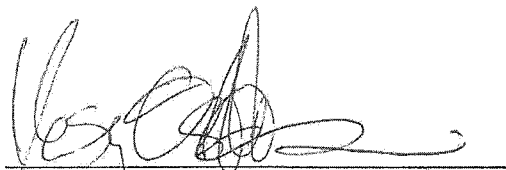
I declare that I was personally present and did see Heinz Lendenmann, who is personally known to me to be the person named in this assignment, duly sign and execute the same.

Declared at Vasteras, on _____.


Signature of Witness

SVEN BJELM
Name of Witness

3/12 2012.
Date


Vesa Osterholm
Norra Billstagatan 9
S-722 40 Vasteras, Sweden

Declaration of Witness

I declare that I was personally present and did see Vesa Osterholm, who is personally known to me to be the person named in this assignment, duly sign and execute the same.

Declared at Vasteras, on 2012-12-03.


Signature of Witness

HEINZ LEIDENBRAND
Name of Witness