

# PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
<b>CONVEYING PARTY DATA</b>											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">Name</th> <th style="width: 30%;">Execution Date</th> </tr> </thead> <tbody> <tr> <td>Yoshinori Jin-No</td> <td>07/15/2009</td> </tr> <tr> <td>Hirokazu Oota</td> <td>07/17/2009</td> </tr> <tr> <td>Yukihito Sasaki</td> <td>07/09/2009</td> </tr> <tr> <td>Shinsuke Suganuma</td> <td>07/09/2009</td> </tr> </tbody> </table>		Name	Execution Date	Yoshinori Jin-No	07/15/2009	Hirokazu Oota	07/17/2009	Yukihito Sasaki	07/09/2009	Shinsuke Suganuma	07/09/2009
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Name:</td> <td>Sumitomo Metal Mining Co., Ltd</td> </tr> <tr> <td>Street Address:</td> <td>11-3, Shimbashi 5-chome, Minato-ku</td> </tr> <tr> <td>City:</td> <td>Tokyo</td> </tr> <tr> <td>State/Country:</td> <td>JAPAN</td> </tr> <tr> <td>Postal Code:</td> <td>105-8716</td> </tr> </table>		Name:	Sumitomo Metal Mining Co., Ltd	Street Address:	11-3, Shimbashi 5-chome, Minato-ku	City:	Tokyo	State/Country:	JAPAN	Postal Code:	105-8716
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<b>CORRESPONDENCE DATA</b>											
Fax Number: (202)478-7380 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 2024787370 Email: jarmstrong@eapdlaw.com Correspondent Name: Edwards Angell Palmer & Dodge LLP Address Line 1: P.O. Box 55874 Address Line 4: Boston, MASSACHUSETTS 02205											
ATTORNEY DOCKET NUMBER:	84265(302727)										
NAME OF SUBMITTER:	James E. Armstrong IV										
Total Attachments: 3 source=12-458598#page1.tif											

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**PATENT**  
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## ASSIGNMENT BY INVENTORS

**THIS ASSIGNMENT**, made by Yoshinori Jin-No; Hirokazu Oota; Yukihito Sasaki; and Shinsuke Suganuma (hereinafter referred to as Assignors), residing at c/o SUMITOMO METAL MINING CO., LTD., 11-3, Shimbashi 5-chome, Minato-ku, Tokyo 105-8716 JAPAN; c/o SUMITOMO METAL MINING CO., LTD., 11-3, Shimbashi 5-chome, Minato-ku, Tokyo 105-8716 JAPAN; c/o Niihama Research Laboratories, SUMITOMO METAL MINING CO., LTD., 17-5, Isoura-cho, Niihama-shi, Ehime 792-0002 JAPAN; and c/o Niihama Research Laboratories, SUMITOMO METAL MINING CO., LTD., 17-5, Isoura-cho, Niihama-shi, Ehime, 792-0002 JAPAN, respectively;

**WHEREAS**, Assignors have invented certain new and useful improvements in COUNTERCURRENT DIRECT-HEATING-TYPE HEAT EXCHANGER, set forth in a Patent application for Letters Patent of the United States, filed herewith ; and

**WHEREAS**, Sumitomo Metal Mining Co., Ltd., a corporation organized under and pursuant to the laws of Japan having its principal place of business at 11-3, Shimbashi 5-chome, Minato-ku, Tokyo, 105-8716 JAPAN (hereinafter referred to as Assignee), 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 therefore and thereon.

**NOW, THEREFORE**, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignors have sold, assigned, transferred and set over, and by these presents do 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 continuations-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 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 Assignors, had this sale and assignment not been made.

**AND** for the same consideration, Assignors hereby represent and warrant 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 law or that have already been transferred to Assignee, Assignors are the sole and lawful owners of the entire right, title and interest in and to the said inventions and application for Letters Patent above-mentioned, and that the same 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 Assignee, 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 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** Assignors hereby request the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns.

**AND** Assignors hereby grant 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:

EDWARDS ANGELL PALMER & DODGE LLP

All practitioners at Customer Number 21874

AND Assignors acknowledge an obligation of assignment of this invention to Assignee at the time the invention was made.

Date: July 15, 2009

Signature: Yoshinori Jin-No  
Yoshinori Jin-No

Date: July 17, 2009

Signature: Hirokazu Oota  
Hirokazu Oota

Date: July 9, 2009

Signature: Yukihito Sasaki  
Yukihito Sasaki

Date: July 9, 2009

Signature: Shinsuke Suganuma  
Shinsuke Suganuma