

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
Manabu MANABE	05/07/2013
RECEIVING PARTY DATA	
Name:	JX Nippon Mining & Metals Corporation
Street Address:	6-3, Otemachi 2-chome, Chiyoda-ku
City:	Tokyo
State/Country:	JAPAN
Postal Code:	100-8164
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	13990481
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NAME OF SUBMITTER:	THIEN HOANG-CHAU
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Date:	05/30/2013
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OP \$40.00 13990481

A S S I G N M E N T

WHEREAS, I, Manabu MANABE, a citizen of Japan residing at c/o Technology Development Center, JX Nippon Mining & Metals Corporation, 1-2, Shirogane-cho 1-chome, Hitachi-shi, Ibaraki 317-0056, Japan, hereinafter generally referred to as "ASSIGNOR", have invented a certain new and useful improvements in

METHOD OF LEACHING COPPER FROM COPPER SULFIDE ORE

for which I have on May 7, 2013 executed an application for Letters Patent of the United States under 35 U.S.C. 371 resulting from the International Application No. PCT/JP2011/078577 filed on December 9, 2012, and

WHEREAS, JX Nippon Mining & Metals Corporation, a Japanese Corporation having a place of business at 6-3, Otemachi 2-chome, Chiyoda-ku, Tokyo 100-8164 Japan, hereinafter generally referred to as "ASSIGNEE", is desirous of acquiring said invention and said application for Letters Patent,

NOW, THEREFORE, in good and valuable consideration paid to me by said ASSIGNEE, the full receipt and sufficiency of all of which are hereby acknowledged, and intending to be legally bound hereby, I, the undersigned ASSIGNOR, hereby agree to sell, assign, transfer and convey, and by these presents do sell, assign, transfer and convey unto the above named ASSIGNEE, the whole and entire right, title and interest

in and to said invention as described in the above patent application, for the territory of the United States and its possessions and territories and for all foreign countries, and

in and to the above patent application and any and all United States Letters Patent which may be granted on said patent application and all United States and all foreign Letters Patent which may be granted on said invention including divisions, reissues, and continuations;

said invention, patent application and Letters Patent to be held and enjoyed by the above named ASSIGNEE, for ASSIGNEE's own use and behoof, and for ASSIGNEE's legal representatives and assigns to the full end of the term or terms for which said Letters Patent may be granted, as fully and entirely as the same would have been held by the undersigned ASSIGNOR had this assignment and sale not been made; and for the aforesaid considerations ASSIGNOR hereby covenants, agrees and undertakes to execute whenever requested by the above named ASSIGNEE, all patent applications, assignments, lawful oaths and any other papers which ASSIGNEE may deem necessary or desirable for securing to ASSIGNEE or for maintaining for ASSIGNEE all the Letters Patent hereby assigned or agreed to be assigned; all without further compensation to the undersigned ASSIGNOR.

Executed at Ibaraki

this 7 day of
May, 2013

真鍋 学 (L.S.)
Manabu MANABE