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PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KOTA NAKASHIMA	10/26/2018
AKIRA YOSHIMURA	10/31/2018
SEIICHIRO TANI	10/26/2018

RECEIVING PARTY DATA

Name:	JX NIPPON MINING & METALS CORPORATION	
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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16302478

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ATTORNEY DOCKET NUMBER:	5526-0152PUS1	
NAME OF SUBMITTER:	TUYET ANH NGUYEN	
SIGNATURE:	/TUYET ANH NGUYEN/	

PATENT REEL: 047546 FRAME: 0979 505197804

 DATE SIGNED:
 11/16/2018

 Total Attachments: 3
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PATENT REEL: 047546 FRAME: 0980 SN: 16/302,478

Filed on November 16, 2018

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ASSIGNMENT

International Application No: PCT/JP2017/018091

Filed:

May 12, 2017

Title:

METHOD FOR RECOVERING A MINOR METAL AND/OR RARE-EARTH

METAL

For good and valuable consideration, the receipt and sufficiency of which are hereby agreed, each of the undersigned hereby assigns to JX Nippon Mining & Metals Corporation and TOHO TITANIUM CO., LTD. ("Assignees") and its successors and assigns the entire right, title, and interest in and to the inventions of the undersigned disclosed in the application listed above, and in any and all other applications anywhere in the world which the undersigned may file and/or be named as an inventor of, solely or jointly, on said inventions, in any and all patents which may be obtained on any of said applications and in any and all reissues, reexaminations, supplemental examinations, inter partes reviews, oppositions, post-grant reviews, supplementary protection certificates and/or extensions thereof, including, without limitation, the right to bring suit and to claim and retain all damages and/or seek other remedies for the past, present, and future infringement of any of the foregoing, the right of priority, including without limitation to claim priority benefit of or to said patent applications, and requests the Commissioner for Patents in the United States and similar authorities outside the United States to issue said patents to and in the names of the Assignees.

Each of the undersigned authorizes the attorneys of record in the application listed above to insert in this assignment the title, filing date, and application number of the application listed above when officially known.

Each of the undersigned states that the application listed above is or was made or authorized to be made by him or her. Each of the undersigned believes himself or herself to be the original sole inventor or an original joint inventor with another undersigned of a claimed invention in the application listed above. Each of the undersigned acknowledges that any willful false statement made by him or her in

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this paragraph is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five years, or both.

Except in favor of Assignees, each of the undersigned warrants that: (i) he or she is the owner of all his or her right, title, and interest herein assigned and has the right to make this unconditional and irrevocable assignment to Assignees without obtaining any approval or permission of a third party; and (ii) there are no outstanding encumbrances, liens, prior assignments, licenses, or other obligations or restrictions on the right, title, and interest herein assigned.

Upon the request of Assignees and at no expense to the undersigned, each of the undersigned hereby agrees to execute any and all applications on said inventions, including without limitation for the reissue, reexamination, supplementary protection certificate or extension thereof and any oath, declaration, or affidavit relating thereto that said Assignees may deem necessary or expedient, and to cooperate to the best of the ability of the undersigned with and perform any and all affirmative acts requested by Assignees to prepare, file, prosecute, maintain, defend, enforce and vest in Assignees the right, title, and interest assigned herein, including without limitation, preparing and executing statements and giving and producing evidence in support thereof, whereby said right, title, and interest will be held and enjoyed by said Assignees to the full end of the term for which said patents may be granted as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

Date: _	October 26. 2018	Kopa Nakashima
_		Kota NAKASHIMA
Date:	October 3/, 2018	UJ
	-	Akira YOSHIMURA

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