

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
TERUMASA MORIYAMA	12/13/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	JX NIPPON MINING & METALS CORPORATION
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<b>City:</b>	CHIYODA-KU, TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	1008164
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15888413
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(508)898-2020
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
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<b>ATTORNEY DOCKET NUMBER:</b>	763P055
<b>NAME OF SUBMITTER:</b>	KEVIN S. LEMACK
<b>SIGNATURE:</b>	/Kevin S. Lemack/
<b>DATE SIGNED:</b>	02/06/2018
<b>Total Attachments: 2</b>	
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## ASSIGNMENT

Application No.:

Filed:

Title: SURFACE-TREATED COPPER FOIL, COPPER FOIL HAVING CARRIER,  
LAMINATED MATERIAL, METHOD FOR PRODUCING PRINTED WIRING  
BOARD, AND METHOD FOR PRODUCING ELECTRONIC APPARATUS

For good and valuable consideration, the receipt and sufficiency of which are hereby agreed, the undersigned hereby assigns to *JX Nippon Mining & Metals Corporation*, 1-2, Otemachi 1-chome, Chiyoda-ku, Tokyo, 1008164, JAPAN and its successors and assigns ("Assignee") the entire right, title and interest in and to the inventions of such 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 request the Commissioner for Patents in the United States and similar authorities outside the United States to issue said patents to and in the name of the Assignee.

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

The undersigned states that the application listed above is or was made or authorized to be made by himself. The undersigned believes himself to be the original inventor of a claimed invention in the application listed above. The undersigned acknowledges that any willful false statement made by him in 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 Assignee, the undersigned warrants that: (i) he is the owner of all its rights, title and interests herein assigned and has the right to make this unconditional and irrevocable assignment to Assignee 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 rights, title and interests herein assigned.

Upon the request of Assignee and at no expense to the undersigned, 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 Assignee 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 Assignee to prepare, file, prosecute, maintain, defend, enforce and vest in Assignee the rights, title and interests assigned herein, including without limitation, preparing and executing statements and giving and producing evidence in support thereof, whereby said rights, title and interests will be held and enjoyed by said Assignee 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.

On behalf of Assignee,  
JX Nippon Mining &  
Metals Corporation

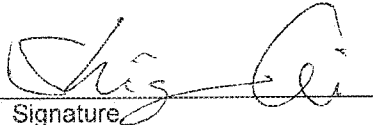
Shigeru Oi

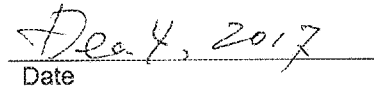
Name

President, JX Nippon Mining & Metals Corporation

Title

hereby confirms Assignee's acceptance of all rights, privileges, title and interests conveyed by this assignment.

  
Signature

  
Date

Date: December 13, 2017

  
Terumasa MORIYAMA