PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
TARO NISHIGUCHI	02/05/2018
YU SAITOH	02/28/2018
HIROFUMI YAMAMOTO	02/05/2018

RECEIVING PARTY DATA

Name:	SUMITOMO ELECTRIC INDUSTRIES, LTD.
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City:	OSAKA
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Postal Code:	541-0041

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16745672

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NAME OF SUBMITTER:	KYOKO MACKILLOP
SIGNATURE:	/Kyoko MacKillop/
DATE SIGNED: 01/17/2020	
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4

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PATENT REEL: 051544 FRAME: 0442 505869925

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PATENT REEL: 051544 FRAME: 0443

VERIFICATION OF TRANSLATION

I, Tadashige Itoh, a Patent Attorney of Tokyo, Japan having my office at 16th Floor, Marunouchi MY PLAZA (Meiji Yasuda Seimei Building), 1-1, Marunouchi 2-chome, Chiyoda-ku, Tokyo 100-0005 Japan do solemnly and sincerely declare that the English-language translation(s) in the attached combined declaration and assignment(s) is correct, true and faithful translation(s) to the best of my knowledge and belief.

Dated January 17, 2020

Tadashige Itoh

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PATENT REEL: 051544 FRAME: 0444

COMBINED DECLARATION AND ASSIGNMENT

特許出願宣言書及び譲渡証

本譲渡証は、	(1)	、及び(2)	に
居所を有する			•
(1)	、及び(2)	(以下、	譲渡人)
によるもので			
	に出願された、		
	特許証のための		された以下
の発明の名称	を有する発明を	なし:	
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(出願	番号:		
1-11034	н ,		
一方、		に営業所	を有する、
		(以下、譲受人)	
	特許証のための.		
られる全ての	米国特許証に関	する全ての権利、	権原、及
び利益の取得	を希望し、		

そのためここに、受領を確認した5ドル及び有効にして 価値ある他の対価と引き換えに、譲渡入は、譲受人なら びにその承継人、法定代理人及び(更なる) 譲受人に対 して、上記発明及び特許証のための上記出願、及び上記 特許出願の全ての直接的及び間接的な分割出願、継続出 願、継続審査及び一部継続出願、それらに基づく合衆国 及びにあらゆる全ての外国において付与される全ての特 許証、当該特許証の再発行、再審査及び延長についての 全ての権利、権原及び利益と、工業所有権保護に関する 国際条約上の全ての権利とを、本譲渡が実施されなかっ た場合に譲渡人が保持・享受したであろう場合と完全に 同様に、特許証の存続期間及び/又は延長期間が満了す るまでの間、譲受人自らの使用及び利益のために、また その承継人、法定代理人及び(更なる)譲受人の使用及 び利益のために譲受人により保持・享受されるように、 売却、譲渡、移転、設定しており、本書面によりこれを 証する。

更に、同一の対価に対し、本書面の署名及び交付にあたり、譲渡人は、法律に基づき譲受人に対して発生する及

THIS ASSIGNMENT, by (1) Taro NISHIGUCHI, (2) Yu SAITOH, and (3) Hirofumi YAMAMOTO, (hereinafter referred to as "Assignors"), residing at (1) Itami-shi, Hyogo, Japan, (2) Osaka-shi, Osaka, Japan, and (3) Itami-shi, Hyogo, Japan, respectively;

WHEREAS, Assignors have made an invention entitled:

SEMICONDUCTOR STACK,

(Application No	
filed	$\overline{}$

set forth in a patent application for Letters Patent of the United States, either previously filed or executed concurrently herewith; and

WHEREAS, SUMITOMO ELECTRIC INDUSTRIES, LTD. (hereinafter referred to as "Assignee"), having offices at 5-33 Kitahama 4-chome, Chuo-ku, Osaka-shi, Osaka 541-0041 Japan, is desirous of acquiring the entire right, title and interest in and to said invention and said application for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefor and thereon;

NOW, THEREFORE, in consideration of Five Dollars (\$5.00) 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 invention and application for Letters Patent, and in and to any and all direct and indirect divisions, continuations, continued prosecutions, 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 the 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

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び/又は既に譲受人に移転された全ての権利、権原及び 利益を除き、譲渡人は上記発明及び特許証のための上記 出願についての全ての権利、権原及び利益の唯一の法的 所有者であり、それは妨げられるものではなく、更に、 譲渡人は当該発明及び特許証のための出願を本譲渡証に 記載された方法により売却及び移転することができる有 効にして完全な権利及び法的な権威を有することを、譲 受人及びにその承継人、法定代理人及び(更なる)譲受 人に対して表明し、保証する。

更に、同一の対価に対し、譲渡人は、譲受人の代理人又 はその承継人、法定代理人及び (更なる) 譲受人の代理 人が求めるときは、譲受人ならびにその承継人、法定代 理人及び(更なる)譲受人に対して費用を請求すること なく、上記発明に関する全ての特許証及び特許証のため の出願の獲得、維持、行使及び防衛のために必要な全て の書類に署名し、全ての法的な誓約をし、全ての必要な 行為を実行すること、限定されない一例としてインター フェアレンス手続きを含む上記発明、又は特許証のため の上記特許出願に関連する全ての手続、又は上記発明に ついての全ての国の全ての特許証又は上記発明に関する 特許証のための出願に関する全ての手続きは合法で望ま しいこと、特許証のための全ての出願の全ての分割出 願、継続出願、継続審査又は一部継続出願、又は全ての 特許証の全ての再発行出願、再審査又は延長は合法で望 ましいことを、譲渡人は譲受人ならびにその承継人、法 定代理人及び(更なる)譲受人に対して約束及び同意す る。

譲渡人はここに、譲受人並びにその承継人、法定代理人 及び(更なる)譲受人による単独での使用及び利益のた め、上記発明及び上記発行される特許証の譲受人として 上記米国特許証を譲受人宛に発行することを、米国特許 商標庁長官に要請する。

譲渡人は本書類を米国特許商標庁へ登録するための規則 に従うために必要な又は望ましい更なる特定のための情 報を本譲渡証に挿入する権限を以下のものに与える:カ スタマーナンバー77464に関連づけられている全ての有 資格者。

譲渡人は、本発明がなされた時点において当該発明を譲受人へ譲渡する義務があったことを認める。

私/我々は以上の証として以下の適切な欄に署名を行 ち 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 the 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 said invention 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 invention, 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 invention, or said patent application for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said invention in any country, including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation, continued prosecutions, 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 that the Director of the United States Patent and Trademark Office issue said Letters Patent of the United States to Assignee, as Assignee of said invention and the said 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: All practitioners associated with the Customer Number 77464.

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

IN TESTIMONY WHEREOF, I/WE have set our hand(s) in the appropriate space below.

宣言書	<u>Declaration</u>
下記発明者である私は、以下を宣言します。	As a below named inventor, I hereby declare that:
本宣言は、以下を対象とする:	This declaration is directed to:
□ 添付の出願、あるいは □ 米国出願番号又は PCT 国際出願番号 □ として、 □ の日に提出された出	The attached application, or United States application or PCT international application number PCT/JP2016/073603 August 10, 2016
上記の出願は私自身、あるいは私が権限を授与したも よって行われたものです。	The above-identified application was made or authorized to be made by me.
私は本出願に記載の発明に関する原初の発明者、ある 原初の共同発明者です。	I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
本宣誓書において故意に虚偽の申し立てを行った場合 18U.S.C.1001 により、罰金あるいは最高五(5)年の禁固 あるいはその両方による罰則の対象となることを承知 います。	I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.
注:本書面に必要な情報やサインは英語右欄のみに記 日本語左欄は英語原本理解のための参考情報。	for this form in the English column only. The Japanese column is reference information to aid understanding of the English.
Date (日付):	Tebrary 5, 2018
Legal Name of Inventor(発明者氏名): Signature(発明者署名):	Taro NISHIĞUCHI Taro Nishiguchi
Date (日付):	Februry 28, 20/8 Yu SAITOM
Legal Name of Inventor(発明者氏名):	Yu SAITOM
Signature(発明者署名):	Yu SaitoN
Date (日付):	Februry 6, 2018
Legal Name of Inventor(発明者氏名):	Hirofumi YAMAMOTO
Signature(発明者署名):	Hirofuni TAMAMOTO

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RECORDED: 01/17/2020