PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Akitaka SOENO	07/17/2013

RECEIVING PARTY DATA

Name:	TOYOTA JIDOSHA KABUSHIKI KAISHA
Street Address:	1, Toyota-cho, Aichi-ken
City:	Toyota-shi
State/Country:	JAPAN
Postal Code:	471-8571

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13982519

CORRESPONDENCE DATA

Fax Number: 2022204201

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 202-220-4200

Email: mwhite@kenyon.com
Correspondent Name: Shawn W. O'Dowd
Address Line 1: 1500 K Street NW

Address Line 2: Suite 700

Address Line 4: Washington, DISTRICT OF COLUMBIA 20005-1257

ATTORNEY DOCKET NUMBER:	12394/69
NAME OF SUBMITTER:	Michelle White
Signature:	/Michelle White/
Date:	07/30/2013

Total Attachments: 5

PATENT REEL: 030902 FRAME: 0802 OF \$40.00 13982519

502438500

source=12394-69_Assignment#page1.tif source=12394-69_Assignment#page2.tif source=12394-69_Assignment#page3.tif source=12394-69_Assignment#page4.tif source=12394-69_Assignment#page5.tif

ASSIGNMENT FOR US PATENT APPLICATIONS AND US PATENTS

WHEREAS, the undersigned inventor, Akitaka SOENO of Toyota-shi, Aichi-ken, Japan (hereinafter referred to as "the Assignor"), has invented certain new and useful improvements in "SEMICONDUCTOR DEVICE", and is the joint owner of the entire right, title and interest in and to said improvements;

WHEREAS, TOYOTA JIDOSHA KABUSHIKI KAISHA, a corporation duly organized under the laws of Japan, and having a principal place of business at 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title and interest of the Assignor in and to said improvements;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the Assignor has sold, assigned, transferred, and set over, does hereby sell, assign, transfer, and set over, unto the Assignee, its successors, and legal representatives, the entire right, title, and interest of the Assignor in and to the above-mentioned improvements, the above-mentioned entire right, title and interest of the Assignor includes the entire right, title and interest in and to PCT patent application designating U.S. filed on November 21, 2012, the serial No. of which is PCT/JP2012/080159, in and to any and all US Patents that may be granted therefor and thereon, in and to any and all applications claiming priority to said applications, in and to any divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Patents, 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 behalf and the use and behalf of its successors, and legal representatives to the full end of the term or terms for which Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignor had this sale and assignment not been made;

AND for the same consideration, the Assignor hereby covenants to and agrees with the Assignee, its successors and legal representatives, that, at the time of execution and delivery of these presents, the Assignor is the sole and lawful owner of their entire right, title, and interest in and to the improvements set forth in said above-mentioned application, and that the same right, title, and interest are unencumbered, and that the Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignor hereby covenants to and agrees with the Assignee, its successors, and legal representatives that the Assignor will, whenever counsel of the Assignee, or the counsel of its successors, and legal representatives, shall advise that any proceeding in connection with said improvements, or any proceeding in connection with US Patents for said improvements in the United States of America, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Patents, or any reissue or extension of any Patents to be obtained thereon, is lawful and desirable, 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 Patents for said improvements, without charge to the Assignee, its successors, and legal representatives, but at the cost and expense of the Assignee, their successors, and legal representatives;

AND Assignor hereby authorizes the Assignee, its successors and legal

representatives, or anyone it may number of said US patent appl available:						
US Patent Application Serial No.		Filing Date	;			
AND the Assignor hereby requests the Commissioner of Patents and Trademarks to issue any and all said US Patents that may be granted upon any of the above-mentioned applications, in the name of the Assignee, for the sole use and behalf of the Assignee, its successors, and legal representatives.						
Date: 17/Jul. /2013	Name of Assignor_	Akitaka S	SOENO			

ASSIGNMENT FOR US PATENT APPLICATIONS AND US PATENTS

WHEREAS, the undersigned inventor, Toshimasa YAMAMOTO of Ichinomiya-shi, Aichi-ken, Japan (hereinafter referred to as "the Assignor"), has invented certain new and useful improvements in "SEMICONDUCTOR DEVICE", and is the joint owner of the entire right, title and interest in and to said improvements;

WHEREAS, DENSO CORPORATION, a corporation duly organized under the laws of Japan, and having a principal place of business at 1-1, Showa-cho, Kariya-shi, Aichi-ken, 448-8661 Japan (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title and interest of the Assignors in and to said improvements;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the Assignor has sold, assigned, transferred, and set over, does hereby sell, assign, transfer, and set over, unto the Assignee, its successors, and legal representatives, the entire right, title, and interest of the Assignor in and to the above-mentioned improvements, the above-mentioned entire right, title and interest of the Assignor includes the entire right, title and interest in and to PCT patent application designating U.S. filed on November 21, 2012, the serial No. of which is PCT/JP2012/080159, in and to any and all US Patents that may be granted therefor and thereon, in and to any and all applications claiming priority to said applications, in and to any divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Patents, 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 behalf and the use and behalf of its successors, and legal representatives to the full end of the term or terms for which Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignor had this sale and assignment not been made;

AND for the same consideration, the Assignor hereby covenants to and agrees with the Assignee, its successors and legal representatives, that, at the time of execution and delivery of these presents, the Assignor is the sole and lawful owner of their entire right, title, and interest in and to the improvements set forth in said above-mentioned application, and that the same right, title, and interest are unencumbered, and that the Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignor hereby covenants to and agrees with the Assignee, its successors, and legal representatives that the Assignor will, whenever counsel of the Assignee, or the counsel of its successors, and legal representatives, shall advise that any proceeding in connection with said improvements, or any proceeding in connection with US Patents for said improvements in the United States of America, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Patents, or any reissue or extension of any Patents to be obtained thereon, is lawful and desirable, 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 Patents for said improvements, without charge to the Assignee, its successors, and legal representatives, but at the cost and expense of the Assignee, their successors, and legal representatives;

AND Assignor hereby authorizes the Assignee, its successors and legal representatives, or anyone it may properly designate, to insert below the filing date and serial

number of said US patent applicavailable:	cation, when said filing date and serial number become
US Patent Application Serial No.	Filing Date;
issue any and all said US Patent	y requests the Commissioner of Patents and Trademarks to s that may be granted upon any of the above-mentioned Assignee, for the sole use and behalf of the Assignee, its es.
Date: Auly 19. 2013	Name of Assignor Joshimasa Janamo to Toshimasa YAMAMOTO
7 1	TochimacaYAMAMOTO

ASSIGNMENT FOR US PATENT APPLICATIONS AND US PATENTS

WHEREAS, the undersigned corporation, DENSO CORPORATION, a corporation duly organized under the laws of Japan, and having a principal place of business at 1-1, Showa-cho, Kariya-shi, Aichi-ken, 448-8661 Japan (hereinafter referred to as "the Assignor"), is the joint owner of the entire right, title and interest in and to certain new and useful improvements in "SEMICONDUCTOR DEVICE, for which PCT patent application was filed on November 21, 2012 to which serial number PCT/JP2012/080159 has been assigned; and

WHEREAS, TOYOTA JIDOSHA KABUSHIKI KAISHA, a corporation duly organized under the laws of Japan, and having a principal place of business at 1, Toyota-cho, Toyota-shi, Aichi-ken, 471-8571 Japan, (hereinafter referred to as "the Assignee") is the joint owner of the entire right, title and interest in and to said certain new and useful improvements in "SEMICONDUCTOR DEVICE", has filed the above PCT patent application jointly with the Assignor, and is desirous of acquiring the entire right, title and interest of the Assignor, in and to US patent applications based on said PCT patent application designating United States of America, and in and to any US Patents to be obtained from said US Patent applications.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the Assignor has sold, assigned, transferred, and set over, does hereby sell, assign, transfer, and set over, unto the Assignee, its successors, and legal representatives, the entire right, title and interest of the Assignor, in and to said US patent applications and in and to said US Patents.

AND the Assignor hereby authorizes the Assignee, its successors, and legal representatives, or anyone it may properly designate, to insert below the filing date and serial number of said patent application, when said filing date and serial number become available:

4 3 773		1	9	, +	Yes 4		•		_11:	3 110
AND	the Assi	gnor her	by rec	quests (JS patei	nt omice to) issuc	any and	an sai	a us
Patents that ma	ay be gra	inted upo	n any	of the	above-m	entioned a	applica	ations, in t	he nar	ne of
the Assignee,	for the	sole us	and	behalf	of the	Assignee,	its !	successors,	and	legal
representatives						_				

US Patent Application Serial No. ______ Filing Date ______;

Date: July 16, 20/6

Yoshihiro SUZUKI

Intellectual Property Division DENSO CORPORATION