503988541 09/01/2016

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Takuya KADOGUCHI	08/10/2016
Arata HARADA	08/22/2016
Takahiro HIRANO	08/23/2016
Masayoshi NISHIHATA	08/10/2016
Keita FUKUTANI	08/23/2016
Tomomi OKUMURA	08/10/2016

RECEIVING PARTY DATA

Name:	Toyota Jidosha Kabushiki Kaisha		
Street Address:	1, Toyota-cho		
City:	Toyota-shi, Aichi		
State/Country:	Japan		
Postal Code:	471-8571		
Name:	Denso Corporation		
Name: Street Address:	Denso Corporation 1-1, Showa-cho		
Street Address:	1-1, Showa-cho		

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15123145

CORRESPONDENCE DATA

Fax Number: (703)836-2787

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.

Phone: 703-836-6400 Email: email@oliff.com **Correspondent Name:** JAMES A. OLIFF Address Line 1: **OLIFF PLC**

Address Line 2: P.O. BOX 320850

Address Line 4: ALEXANDRIA, VIRGINIA 22320-4850

REEL: 039616 FRAME: 0949 503988541

PATENT

ATTORNEY DOCKET NUMBER:	172840
NAME OF SUBMITTER:	VERN HYSLOP
SIGNATURE:	/Vern Hyslop/
DATE SIGNED:	09/01/2016
Total Attachments: 4	
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PATENT REEL: 039616 FRAME: 0950

ASSIGNMENT

	Insert	(1)	Takuya KADOGUCHI	(2)	Arata HARADA
(1-8)	Legal Name(s)	(3)	Takahiro HIRANO	(4)	Masayoshi NISHIHATA
	of Inventor(s)	(5)	Keita FUKUTANI	(6)	Tomomi OKUMURA
		(7)		(8)	
		the un	sideration of the sum of one dollar (\$1.00) ar dersigned, the receipt and sufficiency of whic , and hereby does assign, transfer and set over	ch are	er good and valuable consideration paid to each of hereby acknowledged, each undersigned agrees to
(9)	Insert Name of Assignee	(9)	(1) TOYOTA JIDOSHA KABUSHIK	XI KA	ISHA and (2) DENSO CORPORATION
(10)	Insert Address of Assignee	(10)	(1) 1, Toyota-cho, Toyota-shi, Aichi (2) 1-1, Showa-cho, Kariya-shi, Aich		-
(11)	Insert Identification	the en invent contin	tire right, title and interest for the United Stati tion, and in all applications for patent including	tes of Ang any pplicat on the	•
()	such as Title, Case Number, or Foreign	h as Title, Case			
	Application Number	(Atto	mey Docket No.		filed on even date herewith or as
		(Atto	mey booker No.	/s	med on even date herewith or as
(12)	Alternative	(12)	U.S. Application Number		
	Identification for	 .			
	filed applications	filed			
declared and goin claims o reexamin resulting entire in this assignment.	te separate assignments in cor 2) Each undersigned agrees concerning any application o g forward with such interfere 3) Each undersigned agrees r provisions of the Internation 4) Each undersigned agrees nation a grant of a valid Unite 5) Each undersigned author from said application(s) to the terest herein assigned, and the gument is binding on Assigno 6) Each undersigned hereby	to execute to execute to execute to execute to execute to perfid States and execute said.	an with such applications and patents as the A rate all papers necessary in connection with the forthe invention and to cooperate with the post-grant proceeding. The all papers and documents and perform a vention for Protection of Industrial Property form all affirmative acts which may be neces a patent to the Assignee. It requests the Commissioner of the U.S. Pat Assignee, as Assignee of the entire interest, she has not executed, and will not execute, ssignor's heirs, successors, assigns and lega the firm of OLIFF PLC the power to insert of	Assign any in Assign Assign act or sing sary to ent an and co any again this on this	nterference or post-grant proceeding which may be gree in every way possible in obtaining evidence t which may be necessary in connection with nilar agreements, o obtain, maintain or confirm by reissue or d Trademark Office to issue any and all patents ovenants that he or she has full right to convey the greement(s) in conflict herewith, and agrees that

PATENT REEL: 039616 FRAME: 0951 In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

Date	August 10,20/6	Inventor Signature	Takuya Kadozuchi Takuya KADOGUCHI	(SEAL)
Date	August 22, 2016	Inventor Signature	Arata HARADA Arata HARADA	_ (SEAL)
Date	August 70/6 Aug. 23, 20/6 Aug. 23, 20/6 T.H	Inventor Signature	Takahiro Hinano Takahiro HIRANO	(SEAL)
Date		Inventor Signature	Masayoshi NISHIHATA	(SEAL)
Date	August 23, 2016	Inventor Signature	Keita Fukutani Keita FUKUTANI	(SEAL)
Date		Inventor Signature	Tomorni OKUMUR A	(SEAL)

This assignment should preferably be signed before: (a) a Notary Public if within the U.S.A. (b) a U.S. Consul if outside the U.S.A. If neither, then it should be signed before at least two witnesses who also sign here:

ASSIGNMENT

	Insert	(1)	Takuya KADOGUCHI	(2)	Arata HARADA
(1-8)	Legal Name(s)	(3)	Takahiro HIRANO	(4)	Masayoshi NISHIHATA
	of Inventor(s)	(5)	Keita FUKUTANI	(6)	Tomomi OKUMURA
		(7)		(8)	
		the unc	sideration of the sum of one dollar (dersigned, the receipt and sufficienc and hereby does assign, transfer an	y of which are l	r good and valuable consideration paid to each of hereby acknowledged, each undersigned agrees to
(9)	Insert Name of Assignee	(9)	(1) TOYOTA JIDOSHA KAE	BUSHIKI KA	ISHA and (2) DENSO CORPORATION
(10)	Insert Address of Assignee	(10)	(1) 1, Toyota-cho, Toyota-shi (2) 1-1, Showa-cho, Kariya-s		•
		the ent invent contin	ire right, title and interest for the Union, and in all applications for patent	ited States of A t including any reissue applicat	eirs, successors, assigns and legal representatives, America as defined in 35 U.S.C. §100, in the and all provisional, non-provisional, divisional, ion(s), and all Letters Patent, extensions, reissues invention known as
(11)	Insert Identification such as Title, Case	(11)	TERMINAL CONNE	CTION ST	TRUCTURE AND
	Number, or Foreign Application Number		SEMICONDUCTOR.	APPARA'	ΓUS
		(Attor	ney Docket No.),	filed on even date herewith or as
(12)	Alternative Identification for	(12)	U.S. Application Number		
	filed applications	filed			

Each undersigned agrees to execute all papers necessary in connection with any application and/or patent for the invention and also
to execute separate assignments in connection with such applications and patents as the Assignee may deem necessary.

2) Each undersigned agrees to execute all papers necessary in connection with any interference or post-grant proceeding which may be declared concerning any application or patent for the invention and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference or post-grant proceeding.

3) Each undersigned agrees to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

4) Each undersigned agrees to perform all affirmative acts which may be necessary to obtain, maintain or confirm by reissue or reexamination a grant of a valid United States patent to the Assignee.

5) Each undersigned authorizes and requests the Commissioner of the U.S. Patent and Trademark Office to issue any and all patents resulting from said application(s) to the said Assignee, as Assignee of the entire interest, and covenants that he or she has full right to convey the entire interest herein assigned, and that he or she has not executed, and will not execute, any agreement(s) in conflict herewith, and agrees that this assignment is binding on Assignor and Assignor's heirs, successors, assigns and legal representatives.

6) Each undersigned hereby grants the firm of OLIFF PLC the power to insert on this assignment any further identification that 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.

PATENT REEL: 039616 FRAME: 0953 In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

Date		Inventor Signature		_ (SEAL)
			Takuya KADOGUCHI	
Date		Inventor Signature	•	(SEAL)
			Arata HARADA	_ ` ` ` ` ` ` `
Date		Inventor Signature		(SEAL)
		-	Takabiro HIRANO	
Date	August 10.2016	Inventor Signature	Masayoshi Nishihata	(SEAL)
24.0		Michigan Dignature	Masayoshi NISHIHATA	_ (SEAL)
Date		Inventor Signature		(SEAL)
			Keita FUKUTANI	_ (52125)
	August 10. 2016		-9 · M	
Date	Kinguar 10. 2018	Inventor Signature	Jamoms Okumuza	(SEAL)
			Tomomi OKUMURA	

This assignment should preferably be signed before: (a) a Notary Public if within the U.S.A. (b) a U.S. Consul if outside the U.S.A. If neither, then it should be signed before at least two witnesses who also sign here: