Mail Stop: Assignment Recordation Services Director of the U.S. Patent and Trademark Office P.O. Box 1450		RECORDATION FORM PATENTS		HEET U.S. DEPARTI Pat	U.S. DEPARTMENT OF COMMERCI Patent and Trademark Offic	
Ale	exandria, VA 22313-1450			Attorney Docket No.	<u>158093</u>	
Plea	ase record the attached document.					
Tota	al number of pages including cover sl	neet, attachments, and docum	ent: 4			
1.	A. Name of conveying parties:		2. A.	Name and address of receiv	ing party:	
	[1] Yosuke OTA [2] Yoshiro HIROSE [3] Naonori AKAE [4] Yushin TAKASAW	Ά		HITACHI KOKUSA 14-1, SOTOKANDA CHIYODA-KU, TOI 1018980 JAPAN	4-CHOME,	
	B. Additional name(s) of convey	ing party(ies) attached?  ☐ Yes ☑ No	В.	Additional name(s) & addre	ss(es) attached? Yes ⊠ No	
3.	A. Nature of conveyance:					
		] Merger				
	Security Agreement	Change of Name				
	Other					
	B. Execution Date: [1] - 07/1	7/2013;				
	[2] - 07/18/2013; [3] - 08/03	·				
	[4] - 07/29/2013					
4.	A. Patent Application No. 13/97	16,673	В.	Patent No.(s)		
		Additional numbers attac	hed? 🗌 Y	es ⊠ No		
	MET	CHOD OF MANUFACTHOD OF PROCESSING APPARAT	NG SUBS			
5.	Name and address of party to whom concerning document should be ma	correspondence	6. Tota	l number of applications and	patents involved: 1	
	Name: James A. Oliff  Address: Oliff & Berring P.O. Box 3208	 E, PLC		lease charge Deposit Acotal fee (37 CFR 3.41) in t		
Alexandria, VA 223 Phone Number: 703-8 Fax Number: 703-83 Email: <u>email@olif</u>		320-4850 -836-6400 36-2787		dit any overpayment or chargosit account number 15-0461		
9.	Statement and signature.  To the best of my knowledge and be	ilief, the foregoing informatio	n is true and	l correct and any attached co	py is a true copy of the	
9.	To the best of my knowledge and be original document,	ue	n is true and	d correct and any attached co	py is a true copy of the	
9.	To the best of my knowledge and be original document,	,075 5,748	n is true and	Date: <u>August 27, 2013</u>	py is a true copy of the	

## **ASSIGNMENT**

	Insert	(1)	Yosuke OTA	(2)	Yoshiro HIROSE	
(1-8)	Legal Name(s)	(3)	Naonori AKAE	(4)	Yushin TAKASAWA	
•	of Inventor(s)	(5)		(6)		
	.,	(7)	(m) ( , , ) ( , , )	(8)		
		the unde	deration of the sum of one dollar ( ersigned, the receipt and sufficience and hereby does assign, transfer an	y of which are	or good and valuable consideration phereby acknowledged, each undersi	oaid to each of gned agrees to
(9)	Insert Name of Assignee	(9)	HITACHI KOKUŞAT ELECTRIC	OINC,		
(10)	Insert Address of Assignee	(10)	14-1, Sotokanda 4-chome, Chiyo	da-ku, Tokyo	1018980 Japan	
	Assignt V	the entire inventle continue	re right, title and interest for the Un on, and in all applications for paten	nited States of a t including any reissue applica	neirs, successors, assigns and legal re America as defined in 35 U.S.C. §10 and all provisional, non-provisionation(s), and all Letters Patent, extens invention known as	00, in the d, divisional,
(11)	Insert Identification such as Title, Case	(11)	METHOD OF MANUFACTURE	NG SEMICO	NDUCTOR DEVICE, METHOD O	F
	Number, or Foreign	•	PROCESSING SUBSTRATE AT	ND SUBSTRA	TE PROCESSING APPARATUS	
	Application Number	(Attorn	ey Docket No. 158093	),	filed on even date herewith or as	
(12)	Alternative	(12)	U.S. Application Number 13	/976,673		
	Identification for					
	filed applications	filed	August 27, 2013		pplication and/or patent for the inv	
entire i this ass identifi	nterest herein assigned, and ignment is binding on Assig 6) Each undersigned here cation that may be necessary tion of this document.	that he or signor and Asseby grants to you desirab	he has not executed, and will not signor's heirs, successors, assigns he firm of Ollff & Berridge, P	execute, any a and legal repr LCthe power t es of the Unite	o insert on this assignment any furt d States Patent and Trademark Off	nd agrees mar
Date	July 17, 2	.013	Inventor Signature	tosu	le OTA	(SEAL)
Date			Inventor Signature			(SEAL)
Date						
Date						(00.41)
Date			Taranton Stanotonio	.,		(77.11)
Date						(00.45)
Date				.,,		(SEAL)
Date						(SEAL)
	This assignment should p	referably be efore at leas	t two witnesses who also sign her	ic if within the	U.S.A. (b) a U.S. Consul if outsid	e the U.S.A. If
Date	<b>L</b>		Witness			

Witness

Date

PATENT REEL: 031262 FRAME: 0457

## ASSIGNMENT

	Insert	(1)	Yosuke OTA	(2)	Yoshiro HIROSE				
(1-8)	Legal Name(s)	(3)	Naonori AKAE	(4)	Yushin TAKASAWA				
•	of Inventor(s)	(5)		(6)					
		(7)		(8)					
	T	the un	sideration of the sum of one dollar dersigned, the receipt and sufficient and hereby does assign, transfer an	cy of which are t ad set over to	r good and valuable consideratio nereby acknowledged, each unde	n paid to each of asigned agrees to			
(9)	Insert Name of Assignee	(9)	HITACHI KOKUSAI ELECTRI						
(10)	Insert Address of Assignee	(10)	14-1, Sotokanda 4-chome, Chiy						
		the ent	(hereinafter designated as the Assignee) and Assignee's heirs, successors, assigns and legal representatives, the entire right, title and interest for the United States of America as defined in 35 U.S.C. §100, in the invention, and in all applications for patent including any and all provisional, non-provisional, divisional, continuation, international, substitute and reissue application(s), and all Letters Patent, extensions, reissues and reexamination certificates that may be granted on the invention known as						
(11)	Insert Identification such as Title, Case	(11)	METHOD OF MANUFACTUR						
	Number, or Foreign				TE PROCESSING APPARATU				
	Application Number	(Attor	mey Docket No. 158093	),:	filed on even date herewith or a	s			
(12)	Alternative Identification for	(12)	U.S. Application Number 1	3/976,673					
	filed applications	filed	August 27, 2013						
resulting entire in this associated	ination a grant of a valid Ur 5) Each undersigned auti g from said application(s) to interest herein assigned, and signment is binding on Assigned 6) Each undersigned here ication that may be necessar ation of this document.	nited State horizes and o the said, that he or gnor and A eby grants y or desire	orm all affirmative acts which may spatent to the Assignee. It requests the Commissioner of the Assignee, as Assignee of the entire the has not executed, and will not assignor's heirs, successors, assign the firm of OLIFF & BERRIDGE, table in order to comply with the runche undersigned on the date(s) op	e U.S. Patent an e interest, and co t execute, any ag s and legal repre PLCthe power to les of the United	d Trademark Office to Issue any ovenants that he or she has full preement(s) in conflict herewith sentatives.  Insert on this assignment any for the states Patent and Trademark Conference or the states of the states	y and all patents right to convey the , and agrees that further			
<b>.</b>			Inventor Signature			(SEAL)			
Date	July 18	2013		Yoshiro	Hirose	(SEAL)			
Date Date	August 8		Tildentot Signature			(SEAL)			
Date						(SEAL)			
Date			<b></b> .		Milh.	(SEAL)			
Date			Inventor Signature			(SEAL)			
Date			Inventor Signature			(SEAL)			
Date			Inventor Signature			(SEAL)			
neithe	This assignment should per, then it should be signed b	preferably ofore at le	be signed before: (a) a Notary Put ast two witnesses who also sign he	ollo if within the ere:	: U.S.A. (b) a U.S. Consul if out	iside the U.S.A. If			
Date	<b>ya</b>		Witness						
Date			Witness						

PATENT **REEL: 031262 FRAME: 0458** 

## ASSIGNMENT

	Insert	(1)	Yosuke OTA	(2)	Yoshiro HIROSE		
(8-1)	Legal Name(s)	(3)	Naonori AKAE	(4)	Yushin TAKASAWA		
	of Inventor(s)	(5)	111	(6)			
		(7)	,	(8)			
		In consideration of the sum of one dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned, the receipt and sufficiency of which are hereby acknowledged, each undersigned agrees to assign, and hereby does assign, transfer and set over to					
(9)	Insert Name of Assignee	(9)	HITACHI KOKUSAI ELE	CTRIC INC.			
(10)	Insert Address of Assignee	(10) 14-1, Sotokanda 4-chome, Chiyoda-ku, Tokyo 1018980 Japan					
		the ent invent contin	tire right, title and interest for lon, and in all applications for	the United States of a patent including any to and 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, tion(s), and all Letters Patent, extensions, reissues invention known as		
(11)	Insart Identification such as Title, Case Number, or Foreign Application Number	(11)	METHOD OF MANUFAC	TURING SEMICON	NDUCTOR DEVICE, METHOD OF		
			PROCESSING SUBSTRA	TE AND SUBSTRA	TE PROCESSING APPARATUS		
		(Attor	ney Docket No. 158093	),	filed on even date herewith or as		
(12)	Alternative	(12)	U.S. Application Number	13/976,673			
	Identification for		-				
	filed applications	filed	August 27, 2013		<u> </u>		
	1) Each understand own	4					

1) Each undersigned agrees to execute all papers accessary 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 door necessary.

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

declared concoming 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 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 & BERRIDGE, PLCthe 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.

recordation of this document.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

Dille		inventor Signature		(SEAL)
Date		Inventor Signature		(SEAL)
Date		Inventor Signature	1	(SEAL)
Date	July 29 - 2013	Inventor Signature	Tushin Tatrasawa	(SEAL)
Date	de Marie - Later - Lat	Inventor Signature	·	(SEAL)
Date	Adaption of the Control of the Contr	Inventor Signature	Para - 1	(SEAL)
Date -		Inventor Signature		(SEAL)
Date		Inventor Signature		(SEAL)
neither,	This assignment should preferably be sign then it should be signed before at least two		blic if within the U.S.A. (b) a U.S. Consul if outside there: ${f c}$	ie U.S.A. I(
Date	kannan and an angert and an an	Witness		
Date		Witness		

**PATENT** REEL: 031262 FRAME: 0459