# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3864018

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
KEIICHI UMEDA	04/27/2016
ATSUSHI HONDA	04/27/2016
MORITO AKIYAMA	04/26/2016
KEIKO NISHIKUBO	04/26/2016
TOSHIMI NAGASE	04/25/2016

### **RECEIVING PARTY DATA**

Name:	MURATA MANUFACTURING CO., LTD.
Street Address:	10-1, HIGASHIKOTARI 1-CHOME
City:	NAGAOKAKYO-SHI, KYOTO-FU
State/Country:	JAPAN
Postal Code:	617-8555
Name:	NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY
Street Address:	3-1, KASUMIGASEKI 1-CHOME
City:	CHIYODA-KU, TOKYO
State/Country:	JAPAN
Postal Code:	100-8921

## **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	15149519

### CORRESPONDENCE DATA

**Fax Number:** (212)484-3990

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:** 212-484-3900

**Email:** patentdocket@arentfox.com, inga.hildreth@arentfox.com

Correspondent Name: ARENT FOX LLP Address Line 1: 1675 BROADWAY

Address Line 4: NEW YORK, NEW YORK 10019

ATTORNEY DOCKET NUMBER: 036434.00010

PATENT 503817369 REEL: 038515 FRAME: 0192

NAME OF SUBMITTER:	INGA HILDRETH
SIGNATURE: /ih/	
DATE SIGNED:	05/09/2016
	This document serves as an Oath/Declaration (37 CFR 1.63).
Total Attachments: 5	
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PATENT REEL: 038515 FRAME: 0193

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT	
Title of Invention	PIEZOELECTRIC THIN FILM, MANUFACTURING METHOD THEREFOR, AND PIEZOELECTRIC ELEMENT
As the below	v named inventor, I declare that:
This declara	ation is directed to:
	x The attached application, or
	United States application or PCT international application number filed on
The above-identified application was made or authorized to be made by me.	
I believe tha	t I am the original inventor or an original joint inventor of a claimed invention in the application.
I have review	wed and understand the contents of the above-identified application, including the claims.
me to be ma material info	
material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.  For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, as assignor, hereby sell, assign and set over to Murata Manufacturing Co., Ltd., having an address at 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto-fu 617-8555, Japan, and National Institute of Advanced Industrial Science and Technology, having an address at 3-1, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo 100-8921, Japan; as assignees, the entire right, title and interest for the United States and all other countries in and to all inventions disclosed and/or claimed in the above-identified application, all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States and all other countries, including all rights of priority from the filing of said application, and all rights for past infringement, and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said inventions or resulting therefrom to said assignees herein, as assignees of the entire interest therein; and the undersigned for myself and my legal representatives, heirs and assigns ob hereby agree and covenant without further remuneration, to execute and deliver all divisional, continuation, reissue and other applications for Patent on said inventions and all assignments thereof to said assignees or their sassigns, to communicate to said assignees or their representatives all facts known to the undersigned respecting said inventions, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to assist assignees, their successors, assigns and nominees to obtain patent protecti	
LEGAL NAME OF INVENTOR	
Inventor:	Keiichi Umeda Date: Apri \ 27. 2016
Signature:	Kerichi Vmeda

AFDOCS/13165791.1

# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT Title of PIEZOELECTRIC THIN FILM, MANUFACTURING METHOD THEREFOR, AND PIEZOELECTRIC Invention **ELEMENT** As the below named inventor, I declare that: This declaration is directed to: x The attached application, or United States application or PCT international application number filed on The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I have reviewed and understand the contents of the above-identified application, including the claims. I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application. For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, as assignor, hereby sell, assign and set over to Murata Manufacturing Co., Ltd., having an address at 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto-fu 617-8555, Japan, and National Institute of Advanced Industrial Science and Technology, having an address at 3-1, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo 100-8921, Japan; as assignees, the entire right, title and interest for the United States and all other countries in and to all inventions disclosed and/or claimed in the above-identified application, all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States and all other countries, including all rights of priority from the filing of said application, and all rights for past infringement, and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said inventions or resulting therefrom to said assignees herein, as assignees of the entire interest therein; and the undersigned for myself and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all divisional, continuation, reissue and other applications for Patent on said inventions and all assignments thereof to said assignees or theirs assigns, to communicate to said assignees or their representatives all facts known to the undersigned respecting said inventions, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to assist assignees, their successors, assigns and nominees to obtain patent protection for said inventions in the United States and all other countries, the expenses incident to said applications to be borne and paid by said assignees. The undersigned hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment. All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both, and may jeopardize the validity of the application or any patent issuing thereon. LEGAL NAME OF INVENTOR Inventor: Atsushi Honda Signature:

AFDOCS/13165920.1

I	
DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT	
Title of Invention	PIEZOELECTRIC THIN FILM, MANUFACTURING METHOD THEREFOR, AND PIEZOELECTRIC ELEMENT
As the below	v named inventor, I declare that:
This declara	ition is directed to:
	X The attached application, or
	United States application or PCT international application number filed on
The above-i	dentified application was made or authorized to be made by me.
	It I am the original inventor or an original joint inventor of a claimed invention in the application.
I have revie	wed and understand the contents of the above-identified application, including the claims.
me to be ma material info	ge the duty to disclose to the United States Patent and Trademark Office all information known to aterial to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, ormation which became available between the filing date of the prior application and the national or tional filing date of the continuation-in-part application.
For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, as assignor, hereby sell, assign and set over to Murata Manufacturing Co., Ltd., having an address at 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto-fu 617-8555, Japan; and National Institute of Advanced Industrial Science and Technology, having an address at 3-1, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo 100-8921, Japan; as assignees, the entire right, title and interest for the United States and all other countries in and to all inventions disclosed and/or claimed in the above-identified application, all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States and all other countries, including all rights of priority from the filing of said application, and all rights for past infringement, and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said inventions or resulting therefrom to said assignees herein, as assignees of the entire interest therein; and the undersigned for myself and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all divisional, continuation, reissue and other applications for Patent on said inventions and all assignments thereof to said assignees or their assigns, to communicate to said assignees or their representatives all facts known to the undersigned respecting said inventions, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawfuf papers, make all rightful oaths, and to do generally everything necessary to assist assignees, their successors, assigns and nominees to obtain patent protection for said inventions in the United States and all other countries, the expenses incident to said applications to be borne and paid by said assignees.	
The undersigned hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.	
All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both, and may jeopardize the validity of the application or any patent issuing thereon.	
LEGAL NAM	ME OF INVENTOR
Inventor:	Morito Akiyama Date: Apr. 26/20/6
Signature:	Mori to Mijana

AFDOCS/13165927.1

DEC	LARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
	APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT
Title of Invention	PIEZOELECTRIC THIN FILM, MANUFACTURING METHOD THEREFOR, AND PIEZOELECTRIC ELEMENT
As the belo	w named inventor, I declare that:
This declar	ation is directed to:
. [	X The attached application, or
1	United States application or PCT international application numberfiled on
The above-	identified application was made or authorized to be made by me.
I believe th	at I am the original inventor or an original joint inventor of a claimed invention in the application.
I have revie	ewed and understand the contents of the above-identified application, including the claims.
me to be m material inf	dge the duty to disclose to the United States Patent and Trademark Office all information known to aterial to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, ormation which became available between the filing date of the prior application and the national or ational filing date of the continuation-in-part application.
For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, as assignor, hereby sell, assign and set over to <b>Murata Manufacturing Co.</b> , <b>Ltd.</b> , having an address at 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto-fu 617-855, Japan; and <b>National Institute of Advanced Industrial Science and Technology</b> , having an address at 3-1, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo 100-8921, Japan; as assignees, the entire right, title and interest for the United States and all other countries in and to all inventions disclosed and/or claimed in the above-identified application, all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States and all other countries, including all rights of priority from the filing of said application, and all rights for past infringement, and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said inventions or resulting therefrom to said assignees herein, as assignees of the entire interest therein; and the undersigned for myself and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all divisional, continuation, reissue and other applications for Patent on said inventions and all assignments thereof to said assignees or their sassigns, to communicate to said assignees or their representatives all facts known to the undersigned respecting said inventions, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to assist assignees, their successors, assigns and nominees to obtain patent protection for said inventions in the United States and all other countries, the expenses incident to said applications to be borne and paid by said assignees.	
are believe statements	nts made herein of my own knowledge are true, all statements made herein on information and belief d to be true, and further that these statements were made with the knowledge that willful false and the like are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) orth, and may jeopardize the validity of the application or any patent issuing thereon.
LEGALNA	ME OF INVENTOR
Inventor:	Keiko Nishikubo Date: April 26, 20/6
Signature:	Keiker Mishelsuber

AFDOCS/13165933.1

# DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT Title of PIEZOELECTRIC THIN FILM, MANUFACTURING METHOD THEREFOR, AND PIEZOELECTRIC Invention ELEMENT As the below named inventor, I declare that: This declaration is directed to: x The attached application, or United States application or PCT international application number filed on The above-identified application was made or authorized to be made by me. believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I have reviewed and understand the contents of the above-identified application, including the claims. I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application. For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, as assignor, hereby sell, assign and set over to Murata Manufacturing Co., Ltd., having an address at 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto-fu 617-8555, Japan; and National Institute of Advanced Industrial Science and Technology, having an address at 3-1, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo 100-8921, Japan; as assignees, the entire right, title and interest for the United States and all other countries in and to all inventions disclosed and/or claimed in the above-identified application, all original, divisional, continuation, substitute or reissue applications and patents applied for or granted therefor in the United States and all other countries, including all rights of priority from the filing of said application, and all rights for past infringement, and the Commissioner of Patents and Trademarks is hereby authorized and requested to issue all patents on said inventions or resulting therefrom to said assignees herein, as assignees of the entire interest therein; and the undersigned for myself and my legal representatives, heirs and assigns do hereby agree and covenant without further remuneration, to execute and deliver all divisional, continuation, reissue and other applications for Patent on said inventions and all assignments thereof to said assignees or theirs assigns, to communicate to said assignees or their representatives all facts known to the undersigned respecting said inventions, whenever requested, to testify in any interferences or other legal proceedings in which any of said applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to assist assignees, their successors, assigns and nominees to obtain patent protection for said inventions in the United States and all other countries, the expenses incident to said applications to be borne and paid by said assignees. The undersigned hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment. All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both, and may jeopardize the validity of the application or any patent issuing thereon. LEGAL NAME OF INVENTOR Inventor: Toshimi Nagase Toshimi Nagase Signature:

AFDOCS/13165934.1

PATENT REEL: 038515 FRAME: 0198