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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/387,625	04/11/2012	Shigenobu Nakamura	SAIKYO-PT002	9829

3624 7590 04/03/2015
VOLPE AND KOENIG, P.C.
UNITED PLAZA
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER

SAN MARTIN, JAYDI A

ART UNIT	PAPER NUMBER
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2837

NOTIFICATION DATE	DELIVERY MODE
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04/03/2015

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eoffice@volpe-koenig.com

Office Action Summary	Application No. 13/387,625	Applicant(s) NAKAMURA, SHIGENOBU	
	Examiner JAYDI SAN MARTIN	Art Unit 2837	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 3/19/2015.
 - A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) Claim(s) 1-11 is/are pending in the application.
 - 5a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 6) Claim(s) _____ is/are allowed.
- 7) Claim(s) 1-4, 6-8 is/are rejected.
- 8) Claim(s) 5 is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on 4/11/12 is/are: a) accepted or b) objected to by the Examiner.
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) All b) Some** c) None of the:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 4/9, 3/12/14;9/4/13;1/27/12.
- 3) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 4) Other: _____.

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DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Election/Restrictions

2. Applicant's election without traverse of Claims 1-8 in the reply filed on 3/19/2015 is acknowledged.

Specification

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Multi-layer Piezoelectric Element with Stress Relaxing

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 and 6-8 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Okamura et al. (WO 2008/072768, also published as JP2004-297043, machine translation is provided).

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- Regarding claim 1, Okamura shows a multi-layer piezoelectric element (1), comprising: a stacked body in which piezoelectric layers (3) and internal electrode layers (5) are alternately laminated and a stress relaxing layer (15) is disposed at part of portions between the piezoelectric layers; and an external electrode (9) configured to bond to a side face of the stacked body so as to make electrical connection with the internal electrode layers, wherein the internal electrode layers are not exposed on the side face except for a region bonded to the external electrode, but the stress relaxing layer exposes on the side face of the stacked body.
- Regarding claim 2, the stress relaxing layer contains more voids than the internal electrode layers. Refer to Fig. 4 and its description.
- Regarding claim 3, the stress relaxing layer includes metal portions that are independent of each other.
- Regarding claim 4, a plurality of stress relaxing layers are arranged at a predetermined interval in a stacked direction of the stacked body. Refer to fig. 9, 13 and/or 15.
- Regarding claim 6, a non-formed region where the stress relaxing layer is not formed exists between the piezoelectric layers.
- Regarding claim 7, the stress relaxing layer is divided by the non-formed region between the piezoelectric layers.
- Regarding claim 8, an outer lead member is bonded via a conductive bonding member to a surface of the external electrode (not shown, but essential for applying the driving voltage).

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Allowable Subject Matter

7. Claim 5 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The references of the Prior Art of Record fail to teach or suggest either alone or in obvious combination the limitations as set forth in claim 5, and specifically comprising the limitation of the external electrode having a slit formed in a portion of the external electrode corresponding to a location of the stress relaxing layer.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. San Martin whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shawki Ismail can be reached on 571-272-3985. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jaydi San Martin/
Primary Examiner
Art Unit 2837

March 31, 2015