



PATENT
Express Mail # ED 322051824 US
Docket No. 2011180



NEW APPLICATION – UTILITY

Transmitted herewith for filing is the patent application of Chun Hsien HSIN, et al
for “Substrate Structure for an Image Sensor”.

1. Type of Application

This application is an original utility application.

2. Benefit of Prior Application

Applicant claims no benefit of prior application.

3. Filing Fee Calculation

CLAIMS AS FILED

Basic Fee =		\$150.00
Total claims: 6 - 20 =	x \$25.00 =	0.00
Ind.: 2 - 3 =	x \$100.00 =	0.00
Multiple Dependent: 0 x	\$ 180.00 =	0.00

Basic Filing Fee Calculation = \$150.00

4. Small Entity Statement

Applicant is entitled to Small Entity Status.

5. Fee Payment Being Made at This Time:

Required Filing Fees:

Basic Filing Fee	\$150.00
Search Fee	\$250.00
Examination Fee	<u>\$100.00</u>
Total Fees	\$500.00

Credit Card payment form 2038 is enclosed herewith. Authorization is hereby
given to charge any underpayment of fees therein to deposit account number 16-2497.

New Application Transmittal, page 1 of 2

KTI_GEN_00000112

6. Papers Enclosed Which are Required for Filing Date under 37 CFR 1.53(b)

- _4_ Pages of specification
- _2_ Pages of claims
- _1_ Page of abstract
- _3_ Sheets of Formal Drawings

7. Declaration or Oath

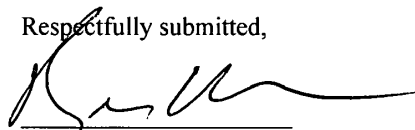
A combined Declaration and Power of Attorney executed by each inventor is enclosed herewith.

8. Customer Number

Please associate this application with Customer Number 000047625.

9. Certificate of Mailing (CFR 37 1.10): I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as Express Mail in an envelope addressed to: Mail Stop New Applications, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

Respectfully submitted,



Ralph Willgohe
PRO-TECHTOR INTERNATIONAL
20775 Norada Court
Saratoga, CA 95070-3018

Date: May 18, 2005

Registration Number: 48,800
Telephone: (408) 358-0489

New Application Transmittal, page 2 of 2

KTI_GEN_00000113



PATENT
Express Mail # ED 322051824 US
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NEW APPLICATION – UTILITY

Transmitted herewith for filing is the patent application of Chun Hsien HSIN, et al
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3. Filing Fee Calculation

CLAIMS AS FILED

Basic Fee =		\$150.00
Total claims: 6 - 20 = x \$25.00 =		0.00
Ind.: 2 - 3 = x \$100.00 =		0.00
Multiple Dependent: 0 x \$ 180.00 =		<u>0.00</u>

Basic Filing Fee Calculation = \$150.00

4. Small Entity Statement

Applicant is entitled to Small Entity Status.

5. Fee Payment Being Made at This Time:

Required Filing Fees:

Basic Filing Fee	\$150.00
Search Fee	\$250.00
Examination Fee	<u>\$100.00</u>
Total Fees	\$500.00

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given to charge any underpayment of fees therein to deposit account number 16-2497.

New Application Transmittal, page 1 of 2

KTI_GEN_00000114

6. Papers Enclosed Which are Required for Filing Date under 37 CFR 1.53(b)

- _4_ Pages of specification
- _2_ Pages of claims
- _1_ Page of abstract
- _3_ Sheets of Formal Drawings

7. Declaration or Oath

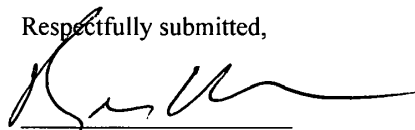
A combined Declaration and Power of Attorney executed by each inventor is enclosed herewith.

8. Customer Number

Please associate this application with Customer Number 000047625.

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Respectfully submitted,



Ralph Willgohe
PRO-TECHTOR INTERNATIONAL
20775 Norada Court
Saratoga, CA 95070-3018

Date: May 18, 2005

Registration Number: 48,800
Telephone: (408) 358-0489

New Application Transmittal, page 2 of 2

KTI_GEN_00000115

SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR

PACKAGE AND METHOD FOR MANUFACTURING THE SAME

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

5 The invention relates to a substrate structure for an image sensor package and method for manufacturing the same, and particular to a substrate structure for forming a frame layer on the substrate of the image sensor, the reliability of the image sensor may be promoted.

DESCRIPTION OF THE RELATED ART

10 Referring to FIG. 1, it is an image sensor structure includes a substrate 10, a frame layer 18, a photosensitive chip 26, a plurality of wires 28, and a transparent layer 34.

 The substrate 10 has a first surface 12 on which plurality of first electrodes 15 are formed, and a second surface 14 on which plurality of second electrodes 16 are formed. The first electrodes 15 are corresponding to electrically connect to the second electrodes 16 by the conductive wires 17, which are located at the side of the substrate. The frame layer 18 has an upper surface 20 and a lower surface 22 adhered to the first surface 12 of the substrate 10 to form a cavity 24 together with the substrate 10. The photosensitive chip 26 is arranged within the chamber 24,
20 and is mounted to the first surface 12 of the substrate 10. Each wire 28 has a first

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terminal 30 and a second terminal 32. The first terminals 30 are electrically connected to the photosensitive chip 26, and the second terminals 32 are electrically connected to the first electrodes 15 of the substrate 10. The transparent layer 34 is adhered to the upper surface 20 of the frame layer 18.

5 Therefore, in the process of manufacturing the substrate 10 and frame layer 18, particles and wet air from atmosphere will enter the internal of the product through between the each of first electrode, so that the reliability of the product may be reduced.

SUMMARY OF THE INVENTION

10 An objective of the invention is to provide a substrate structure for manufacturing an image sensor package and method for manufacturing the same capable of increasing the reliability of the image sensor package.

 To achieve the above-mentioned object, the invention provides includes a bottom base and a frame layer. The bottom base has an upper surface formed with
15 a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, an insulation layer is coated between each of the first electrode, so as to the upper surface of the bottom base is smooth. A frame layer is arranged on the upper surface of the bottom base to form a cavity together with the bottom base, so that the reliable of the image sensor may be promoted.

20 BRIEF DESCRIPTION OF THE DRAWINGS

 FIG. 1 is a schematic illustration showing an image sensor structure.

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FIG. 2 is a top- view illustration showing a bottom base of a substrate for an image sensor package.

FIG. 3 is a cross-sectional view illustration showing a substrate for an image sensor package.

5 FIG. 4 is a first schematic illustration showing a method for manufacturing a substrate structure.

FIG. 5 is a second schematic illustration showing a method for manufacturing a substrate structure.

DETAILED DESCRIPTION OF THE INVENTION

10 Please refer to FIG.2 and FIG.3, a substrate structure for manufacturing an image sensor package of the present invention includes a bottom base 40 and frame layer 42.

The bottom base 40 has an upper surface 44 formed with a plurality of first electrodes 48, and a lower surface 46 formed with a plurality of second electrodes 50. Each of the first electrodes 48 is corresponding to electrically connect to the second electrode 50. An insulation layer 52 is coated between each of the first electrode 48, so as to the upper surface 44 of the bottom base 40 is smooth. In the embodiment, the insulation layer 52 is green paint coated between each of first electrode 48.

20 The frame layer 42 is arranged on the upper surface 44 of the bottom base 40 to form a cavity 54 together with the bottom base 40.

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Please refer to FIG.2 and FIG.3 and 4. A method for manufacturing a substrate of an image sensor package, the method includes the steps of :

Providing a bottom base 40 having an upper surface 44 formed with a plurality of first electrodes 48. Each of the first electrodes 48 is corresponding to
5 electrically connect to the second electrode 50. An insulation layer 52 is coated between each of the first electrode 48, so as to the upper surface 44 of the bottom base 40 is smooth. In the embodiment, the insulation layer 52 is green paint coated between each of first electrode 48.

Providing a plurality of frame layer 42 arranged on the upper surface 44 of
10 the bottom base 40 to form a plurality of cavity 54 together with the bottom base 40.

Providing a glue film 56 located on the lower surface 46 of the bottom base 40 to fix the bottom base 40.

Cutting the each of the frame layer 42 to form a single substrate.

15 While the invention has been described by the way of an example and in terms of a preferred embodiment, it is to be understood that the invention is not limited to the disclosed embodiment. On the contrary, it is intended to cover various modifications. Therefore, the scope of the appended claims should be accorded the broadest interpretation so as to encompass all such modifications.

WHAT IS CLAIMED IS:

1. A substrate structure for an image sensor package, the substrate structure comprising ;

5 a bottom base having an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, an insulation layer is coated between each of the first electrode, so as to the upper surface of the bottom base is smooth ;

a frame layer arranged on the upper surface of the bottom base to form a cavity together with the bottom base.

10 2. The substrate structure for an image sensor package according to claim 1, wherein the each of first electrode is corresponding to electrically connect to the second electrode.

3. The substrate structure for an image sensor package according to claim 1, wherein the insulation layer is green paint.

15 4. A method for manufacturing a substrate of an image sensor package, the method comprising ;

Providing a bottom base having an upper surface formed with a plurality of first electrodes, an insulation layer is coated between each of the first electrode, so as to the upper surface of the bottom base is smooth ;

20 Providing a plurality of frame layer arranged o the upper surface

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of the bottom base to form a plurality of cavity together with the bottom base ;

Providing a glue film located on the lower surface of the bottom base to
fix the bottom base ; and

Cutting the each of the frame layer to form a single substrate.

5 5. The method for manufacturing a substrate of an image sensor package
according to claim4, wherein the each of first electrode is corresponding to
electrically connect to the second electrodes.

6. The method for manufacturing a substrate of an image sensor package
according to claim4, wherein the insulation layer is green paint.

10

15

ABSTRACT OF THE DISCLOSURE

A substrate structure for an image sensor package, the substrate structure includes a bottom base and a frame layer. The bottom base has an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, an insulation layer is coated between each of the
5 first electrode, so as to the upper surface of the bottom base is smooth. A frame layer is arranged on the upper surface of the bottom base to form a cavity together with the bottom base.

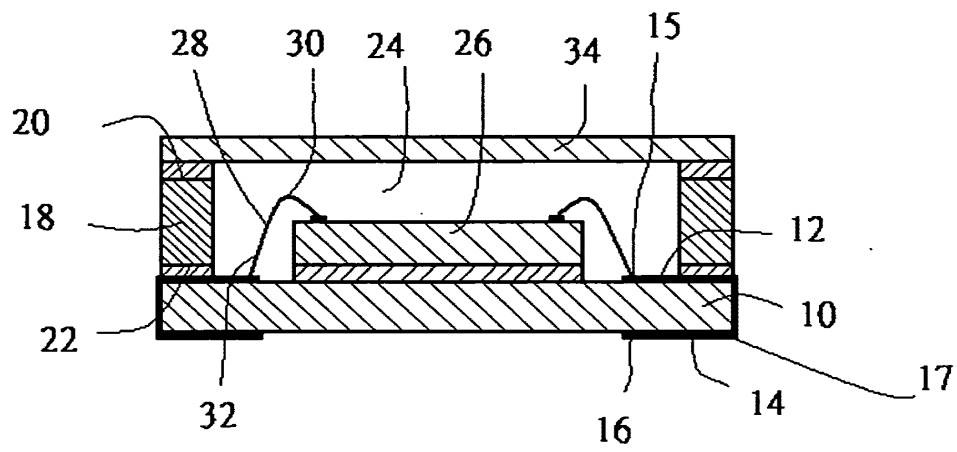


FIG.1(Prior Art)

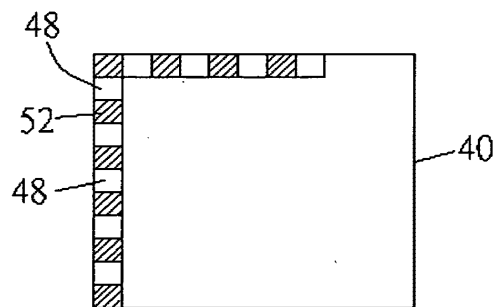


FIG.2

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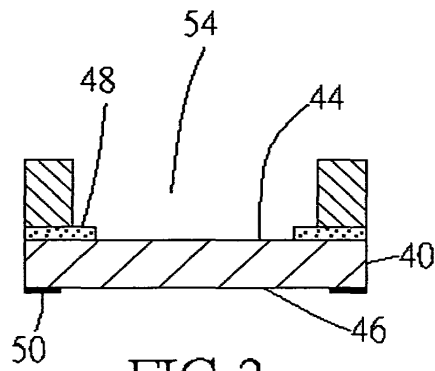


FIG.3

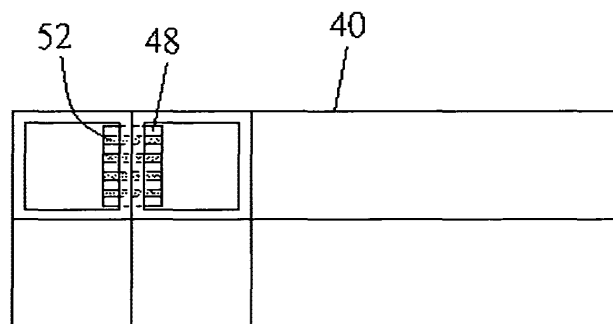
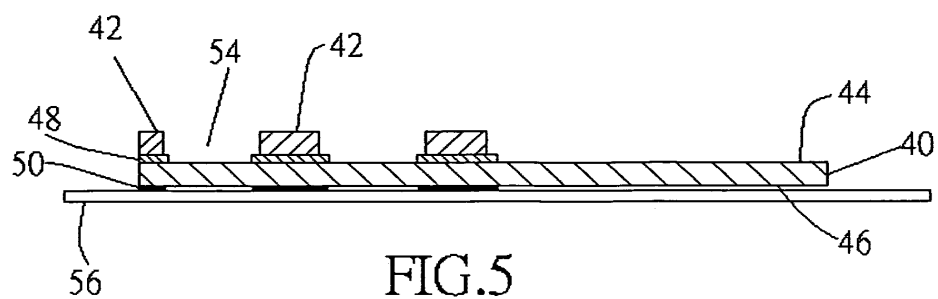


FIG.4

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COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below under my name. I believe I am the sole (if only one name appears below), or a joint (if more than one name appears), original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: Substrate Structure for an Image Sensor Package and Method for Manufacturing the Same

X The specification for the above-entitled invention is filed herewith.

_____ The specification for the above-entitled invention was filed previously with application serial number _____, filed on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Office all information known to the person to be material to patentability of this application as defined in 37, C.F.R. Section 1.56(a).

PRIORITY CLAIM

X There is no claim of priority.

_____ Claim of priority is based on the following: _____

POWER OF ATTORNEY

As a named inventor, I hereby appoint the following attorney to prosecute this application and to transact all related business in the Patent and Trademark Office:

*Ralph Willgohs, Registration Number 48,800
PRO-TECHTOR INTERNATIONAL SERVICES
20775 Norada Court, Saratoga, CA 95070-3018
Telephone: (408) 358-0489*

I authorize my attorney to accept and follow instructions from Genuinel Paten and Trademark Office in Hsinchu, Taiwan regarding any matter related to this application or any patent that my issue from this application. This authorization shall remain valid until such time as I may revoke it in writing.

(continued)

PATENT
Docket No. 2011180

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made 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 so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, Section 1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 5/5 '05

Chung Hsien HSIN

1.

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Inventor's Citizenship: Taiwan

Date: 5/5 '05

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Inventor's Citizenship: Taiwan

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Inventor's Citizenship: Taiwan

Date: 5/5 '05

Chief Lin

4.

Inventor's Printed Name: Chief Lin

Inventor's residence and No.84, Taiho Road, Chupei, Hsinchu Hsien,

Post Office Address: Taiwan

Inventor's Citizenship: Taiwan

.. Check this box if the number of inventor is over four and attach additional page of their information.

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

05/20/2005 JBALINAN 00000004 11131727

01 FC:2011	150.00 OP
02 FC:2111	250.00 OP
03 FC:2311	100.00 OP

Best Available Copy

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002 — 489-257/80033

KTI_GEN_00000128

PATENT APPLICATION FEE DETERMINATION RECORD

Effective December 8, 2004

11/31/27

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	6	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	6 minus 20 = *	
INDEPENDENT CLAIMS	2 minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus **	=
	Independent	* Minus ***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐		

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus **	=
	Independent	* Minus ***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐		

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus **	=
	Independent	* Minus ***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐		

- * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 - ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 - *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
- The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SMALL ENTITY
TYPE ☐

OR
OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	150.00
X\$ 25=	
X100=	
+180=	
TOTAL	150

RATE	FEE
BASIC FEE	300.00
X\$50=	
X200=	
+360=	
TOTAL	

SMALL ENTITY

OR
OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
X\$ 25=	
X100=	
+180=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$50=	
X200=	
+360=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$ 25=	
X100=	
+180=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$50=	
X200=	
+360=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$ 25=	
X100=	
+180=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$50=	
X200=	
+360=	
TOTAL ADDIT. FEE	



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	2011180	5555
47625	7590	06/30/2006		
PRO-TECTOR INTERNATIONAL SERVICES 20775 NORADA CT. SARATOGA, CA 95070			EXAMINER TRAN, THANH Y	
			ART UNIT 2822	PAPER NUMBER

DATE MAILED: 06/30/2006

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

Office Action Summary	Application No. 11/131,727	Applicant(s) HSIN ET AL.	
	Examiner Thanh Y. Tran	Art Unit 2822	

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ 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

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

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ 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).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
a) ☐ All b) ☐ Some * c) ☐ None of:
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) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) ☐ Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 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 –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakazawa (U.S. 2005/0193548).

As to claim 1, Nakazawa discloses in figures 9-10C a substrate structure for an image sensor package, the substrate structure comprising: a bottom base (10) having an upper surface formed with a plurality of first electrodes (“conductor layer” 4a), and a lower surface formed with a plurality of second electrodes (“external terminal” 3) (see paragraph [0065]), an insulation layer (“flat plate-shaped substrate 10b) is coated between each of the first electrode (4a), so as to the upper surface of the bottom base (10) is smooth; a frame layer (“seal ring” 17) arranged on the upper surface of the bottom base (10) to form a cavity together with the bottom base (10).

As to claim 2, Nakazawa discloses in figures 9-10C a substrate structure for an image sensor package, wherein the each of first electrode (“conductor layer” 4a) is corresponding to electrically connect to the second electrode (“external terminal” 3) (see paragraph [0106]).

As to claim 3, Nakazawa discloses in figures 9-10C a substrate structure for an image sensor package, wherein the insulation layer (insulation layer of substrate 15) is green paint (“ceramic green sheet”) (see paragraphs [0078] & [0149]).

KTI_GEN_00000132

Art Unit: 2822

As to claim 4, Nakazawa discloses in figures 9-10C a substrate structure and a corresponding method for an image sensor package, the method comprising: providing a bottom base (10) having an upper surface formed with a plurality of first electrodes ("conductor layer" 4a), an insulation layer ("flat plate-shaped substrate" 10b) is coated between each of the first electrodes (4a), so as to the upper surface of the bottom base (10) is smooth; providing a plurality of frame layer ("seal rings" 17) arranged on the upper surface of the bottom base (10) to form a plurality of cavity together with bottom base (10); providing a glue film ("adhesive" such as solder, see [0065]) located on the lower surface (at external terminal 3) of the bottom base (10) to fix the bottom base (10); and cutting the each of the frame layer (17) to form a single substrate (see figures 10a-10c and paragraph [0151]).

As to claim 5, Nakazawa discloses in figures 9-10C a substrate structure and a corresponding method for an image sensor package, wherein the each of first electrode (4a) is corresponding to electrically connect to the second electrodes ("external terminal" 3) (see paragraph [0106]).

As to claim 6, Nakazawa discloses in figures 9-10C a substrate structure and a corresponding method for an image sensor package, wherein the insulation layer (insulation layer of substrate 15) is green paint ("ceramic green sheet") (see paragraphs [0078] & [0149]).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

KTI_GEN_00000133

Application/Control Number: 11/131,727
Art Unit: 2822

Page 4

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

TYT


Zandra V. Smith
Supervisory Patent Examiner
24 June 2006

KTI_GEN_00000134

Notice of References Cited	Application/Control No. 11/131,727	Applicant(s)/Patent Under Reexamination HSIN ET AL.	
	Examiner Thanh Y. Tran	Art Unit 2822	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-			
*	B	US-2005/0193548	09-2005	Nakazawa, Toshio	029/594
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	11/131,727		HSIN ET AL.	
	Examiner		Art Unit	
	Thanh Y. Tran		2822	

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date						
Final	Original	6/21/06						
	1	✓						
	2	✓						
	3	✓						
	4	✓						
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UNITED STATES PATENT AND TRADEMARK OFFICE

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Bib Data Sheet

CONFIRMATION NO. 5555

SERIAL NUMBER 11/131,727	FILING OR 371(c) DATE 05/18/2005 RULE	CLASS 257	GROUP ART UNIT 2822	ATTORNEY DOCKET NO. 2011180
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APPLICANTS
 Chung Hsien Hsin, Hsinchu Hsien, TAIWAN; *yes* *TYT*
 Yves Huang, Hsinchu Hsien, TAIWAN;
 Kevin Chang, Hsinchu Hsien, TAIWAN;
 Chief Lin, Hsinchu Hsien, TAIWAN;

**** CONTINUING DATA ******* *NONE* *TYT*

**** FOREIGN APPLICATIONS ******* *NONE* *TYT*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
**** 06/14/2005**

Foreign Priority claimed ☐ yes ☒ no	STATE OR COUNTRY TAIWAN	SHEETS DRAWING 3	TOTAL CLAIMS 6	INDEPENDENT CLAIMS 2
35 USC 119 (a-d) conditions met ☐ yes ☒ no ☐ Met after				
Verified and Acknowledged <i>[Signature]</i> Examiner's Signature	<i>TYT</i> Initials			

ADDRESS
000047625

TITLE
Substrate structure for an image sensor package and method for manufacturing the same

FILING FEE RECEIVED 500	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees
		☐ 1.16 Fees (Filing)
		☐ 1.17 Fees (Processing Ext. of time)
		☐ 1.18 Fees (Issue)
		☐ Other _____
		☐ Credit

Search Notes

Application/Control No.

11/131,727

Examiner

Thanh Y. Tran

Applicant(s)/Patent under
Reexamination

HSIN ET AL.

Art Unit

2822

SEARCHED

Class	Subclass	Date	Examiner
257	666	6/21/2006	TYT
257	685	6/21/2006	TYT
257	688	6/21/2006	TYT
257	723	6/21/2006	TYT

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
East search	6/21/2006	TYT

KTI_GEN_00000138

ITN

Amendment

Pro-TECHTOR INTERNATIONAL SERVICES
20775 Norada Court
Saratoga, CA 95070-3018
Docket No. 2011180
Customer No: 47625



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Hsin et al
Serial No. 11/131,727
Filed: 5/18/2005
For: "Substrate Structure for an Image Sensor Package and Method for
Manufacturing the Same"

Certificate of Mailing

Date: October 27, 2006

I hereby certify that the attached document, 13 pages, is being deposited with the United States Postal Service as first class mail with sufficient postage under 37 CFR 1.8 on the date indicated above addressed to: Mail Stop Amendment, Commissioner of Patents, PO Box 1450 Washington, D.C. 22313-1450.

by: Ralph H. Willgoos
Registration Number: 48,800

Examiner: Tran, Thanh Y

Group Art Unit: 2822

Amendment

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 22313-1450

Sir:

Transmitted herewith is an amendment prepared by Assignee in the above-identified application.

- ☒ Applicant hereby petitions for a one month extension of time to respond. Authorization is hereby granted to charge the fees for the extension of time to respond to Deposit Account # 16-2497.
- ☒ Small entity status of this application under 37 CFR §§1.9 and 1.27 has been established previously.
- ☐ A statement to establish small entity status under 37 CFR §§1.9 and 1.27 is enclosed.

The claims fee has been calculated as shown below:

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
TOTAL	6	MINUS *	20	= 0
INDEP.	2	MINUS **	3	= 0
[] FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				

* Minimum of 20

* Minimum of 3

☒ No claims fee is due.

SMALL ENTITY

RATE	ADDIT. FEE
X25=	\$ 0
X100=	\$ 0
+180=	\$ 0
TOTAL ADDIT. FEE	\$ 0

OR

OTHER THAN A
SMALL ENTITY

RATE	ADDIT. FEE
X50=	\$
X200=	\$
+360=	\$
TOTAL ADDIT. FEE	\$

OR

Respectfully Submitted,

Ralph Willgoos
Reg. No. 48,800

KTI_GEN_00000139

Appl. No. 11/131,727
Amdt. dated October 19, 2006
Reply to Office action of 06/30/2006



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No:	11/131,727	Docket No:	2011180
Filing Date:	05/18/2005	Applicant:	Hsin et al.
Examiner:	TRAN, THANH Y	Art Unit:	2822
Confirmation No.	5555		

Title SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR
PACKAGE AND METHOD FOR MANUFACTURING THE
SAME

To: THE ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231

RESPONSE TO OFFICE ACTION

5 Dear Sir:

In response to the Office Action dated 06/30/2006, Applicant submits the following amendments and remarks.

This reply includes:

- 10 Amendment to the specification;
Amendment to the abstract;
Amendment to the drawing;
Amended Claim Set; and
Remarks.

Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 5, with the following rewritten paragraph:

5 -- The invention relates to a substrate structure for an image sensor package and a method for manufacturing the same, and ~~more particularly~~ to a substrate structure ~~having for forming~~ a frame layer ~~formed on the substrate of the an image sensor to enhance~~, the reliability of the image sensor may be promoted. --

10 Please replace the three paragraphs beginning at page 1, line 10, with the following rewritten paragraphs:

 -- Referring to FIG. 1, ~~it is an~~ image sensor structure includes a substrate 10, a frame layer 18, a photosensitive chip 26, a plurality of wires 28, and a transparent layer 34.

15 The substrate 10 has a first surface 12 on which a plurality of first electrodes 15 are formed, and a second surface 14 on which a plurality of second electrodes 16 are formed. The first electrodes 15 are ~~corresponding to~~ electrically connected to the corresponding second electrodes 16 by the conductive wires 17, which are located at the side of the substrate. The frame layer 18 has an upper surface 20 and a lower surface 22 adhered to the first surface 12 of the substrate 10 to form a cavity 24 together with the substrate 10.
20 The photosensitive chip 26 is arranged within the ~~chamber~~ cavity 24, and is mounted to the first surface 12 of the substrate 10. Each wire 28 has a first terminal 30 and a second terminal 32. The first terminals 30 are electrically connected to the photosensitive chip 26, and the second terminals 32 are
25 electrically connected to the first electrodes 15 of the substrate 10. The transparent layer 34 is adhered to the upper surface 20 of the frame layer 18.

30 Therefore, in the process of manufacturing the substrate 10 and the frame layer 18, particles and wet air from atmosphere will enter ~~the internal of the product through passages between the each of first electrodes, so that the~~ reliability of the product may be reduced.

Please replace the two paragraphs beginning at page 2, line 10, with the following rewritten paragraphs:

5 -- An objective of the invention is to provide a substrate structure for ~~manufacturing~~ an image sensor package and a method for manufacturing the same capable of increasing the reliability of the image sensor package.

10 To achieve the above-mentioned object, the invention provides a substrate structure, which includes a bottom base and a frame layer. The bottom base has an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between ~~each of the first electrodes and in contact with the upper surface of the bottom base,~~ so as to the upper surface of the bottom base is smooth. A The frame layer is arranged on and in contact with the first electrodes and the insulation layer the upper surface of the bottom base to form a cavity together
15 with the bottom base, ~~so that the reliable of the image sensor may be promoted.~~ -

Please replace the three paragraphs beginning at page 2, line 21, with the following rewritten paragraphs:

20 -- FIG. 1 is a schematic illustration showing an image sensor structure according to the prior art.

FIG. 2 is a ~~top view illustration top view~~ showing a bottom base of a substrate structure for an image sensor package according to the invention.

25 FIG. 3 is a cross-sectional view ~~illustration~~ showing ~~a the~~ substrate structure for ~~an the~~ image sensor package. --

Please replace the paragraph beginning at page 3, line 7, with the following rewritten paragraph:

30 -- FIG. 5 is a second schematic illustration showing a method for manufacturing ~~a the~~ substrate structure. --

Please replace the eight paragraphs beginning at page 3, line 10, with the following rewritten paragraphs:

5 -- Please refer to FIGS. 2 and 3, ~~FIG..2 and FIG..3~~, a substrate structure for manufacturing an image sensor package of the present invention includes a bottom base 40 and a frame layer 42.

10 The bottom base 40 has an upper surface 44 formed with a plurality of first electrodes 48, and a lower surface 46 formed with a plurality of second electrodes 50. Each of the first electrodes 48 is ~~corresponding to~~ electrically connected to the corresponding second electrode 50. An insulation layer 52 is coated between ~~each of the first electrodes 48 and in contact with the upper surface 44 of the bottom base 40~~, so as to smooth the first electrodes 48 on the upper surface 44 of the bottom base 40 is smooth. In the embodiment, the insulation layer 52 is composed of green paint coated between each of the first electrodes 48.

15 The frame layer 42 is arranged on and in contact with the first electrodes 48 and the insulation layer 52 the upper surface 44 of the bottom base 40 to form a cavity 54 together with the bottom base 40.

20 Please refer to ~~FIG..2 and FIG..3 and 4~~. A FIGS. 2 to 4, a method for manufacturing a-substrate structures of an image sensor packages, the method includes the following steps, of--

25 First, ~~Providing a bottom base 40 having an upper surface 44 formed with a plurality of first electrodes 48~~ is provided. Each of the first electrodes 48 is ~~corresponding to~~ electrically connected to the corresponding second electrode 50. An insulation layer 52 is then coated between ~~each of the first electrodes 48 and in contact with the upper surface 44 of the bottom base 40~~, so as to smooth the first electrodes 48 on the upper surface 44 of the bottom base 40 is smooth. In the embodiment, the insulation layer 52 is composed of green paint coated between each of the first electrodes 48.

30 Next, ~~Providing a plurality of a frame layer 42~~ is arranged on and in contact with the upper surface 44 of the bottom base 40 to form a plurality of cavity

cavities 54 together with the bottom base 40.

~~Then, Providing a glue film 56 is fixed onto located on the lower surface 46~~
of the bottom base 40 ~~to fix the bottom base 40.~~

~~The last step is to cut from Cutting the each of the frame layer 42 to the glue~~
5 film 56 to form a single the substrate structures.

Amendment to the abstract:

Please replace the paragraph beginning at page 7, line 2, with the following rewritten paragraph:

-- A substrate structure for an image sensor package, ~~the substrate structure~~
5 includes a bottom base and a frame layer. The bottom base has an upper surface
formed with a plurality of first electrodes, and a lower surface formed with a
plurality of second electrodes, ~~an~~ ^{An} insulation layer is coated between each of
the first electrodes and in contact with the upper surface of the bottom base, ~~so as~~
10 ~~to the upper surface of the bottom base is smooth.~~ A frame layer is arranged on
and in contact with the first electrodes and the insulation layer ~~the upper surface of~~
~~the bottom base~~ to form a cavity together with the bottom base. --

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

5 Claim 1 (Currently Amended): A substrate structure for an image sensor package, the substrate structure comprising:—

 a bottom base having an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between each of the first electrodes and in
10 contact with the upper surface of the bottom base; ~~so as to the upper surface of the bottom base is smooth—~~

 a frame layer arranged on and in contact with the first electrodes and the insulation layer the upper surface of the bottom base to form a cavity together with the bottom base.

15 Claim 2 (Currently Amended): The substrate structure ~~for an image sensor package~~ according to claim 1, wherein the ~~each of first electrodes are~~ is corresponding to electrically connected to the second electrodes, respectively.

 Claim 3 (Currently Amended): The substrate structure ~~for an image sensor package~~ according to claim 1, wherein the insulation layer is composed of green
20 paint.

 Claim 4 (Currently Amended): A method for manufacturing a substrate structures of an image sensor packages, the method comprising:—

~~Providing~~ providing a bottom base having an upper surface formed with a plurality of first electrodes;

25 coating, ~~an insulation layer is coated between each of the first electrodes and in contact with the upper surface of the bottom base;~~ ~~so as to the upper surface of the bottom base is smooth—~~

~~Providing a plurality of arranging a frame layer arranged o on and in contact with the first electrodes and the insulation layer the upper surface of the bottom~~
30 base to form a plurality of cavity cavities together with the bottom base;—

~~Providing fixing a glue film located on onto a~~ the lower surface of the bottom base; ~~to fix the bottom base~~ and

~~Cutting the each of cutting from the frame layer to the glue film~~ to form ~~the a~~ single-substrate structures.

- 5 Claim 5 (Currently Amended): The method ~~for manufacturing a substrate of an image sensor package~~ according to claim 4, wherein the ~~each of~~ first electrodes ~~are~~ ~~is corresponding to~~ electrically connected to the second electrodes formed on the lower surface of the bottom base, respectively.

- 10 Claim 6 (Currently Amended): The method ~~for manufacturing a substrate of an image sensor package~~ according to claim 4, wherein the insulation layer is composed of green paint.

Appl. No. 11/131,727
Amdt. dated October 19, 2006
Reply to Office action of 06/30/2006

Amendments to the Drawings:

The attached sheet labeled "Replacement Sheet" includes changes to FIG. 3.

In the amended FIG. 3, symbol 42 is added to indicate the frame layer corresponding to FIG. 5. So, the feature has been originally shown in the
5 drawing and is thus added to make the invention clearer without adding new matters.

REMARKS/ARGUMENTS

The specification and drawing have been correspondingly amended without adding new matters and will be explained as below.

5 In the specification, the changes include the following features without adding new matters.

1. Some grammar errors have been corrected.

2. The insulation layer 52 can smooth the first electrodes 48 on the upper surface 44 of the bottom base 40. The original specification has wrongly described
10 that the upper surface 44 of the bottom base 40 is smooth due to the insulation layer 52. One of ordinary skill in the art may easily understand that the upper surface 44 cannot be smoothed by the insulation layer 52 because the upper surface 44 is a continuous surface and it is unnecessary to smooth the upper surface 44. In addition, the invention is to prevent the particles and wet air from
15 entering the product through between the first electrodes (see page 2, lines 5-8 of this application). So, one of ordinary skill in the art may easily understand that the first electrodes have to be smoothed to eliminate the passages between the first electrodes according to the prior art problem and the logic error in the wrongly described specification. Thus, no new matter should be considered added.

20 3. The insulation layer 52 is coated between the first electrodes 48 and in contact with the upper surface 44 of the bottom base 40. This feature has been originally shown in FIGS. 2 and 4 and will be derived according to the logic error of the wrongly described specification.

4. The frame layer 42 is arranged on and in contact with the first electrodes
25 48 and the insulation layer 52 to form a cavity 54 together with the bottom base 40. This feature has been originally shown in FIGS. 2 and 4 in conjunction to FIG. 3.

5. The last step is to cut from the frame layer 42 to the glue film 56 to form the substrate structures. This feature has been originally shown in FIG. 5.

30

Claims 1-6 are now present in this application. Claims 1-6 have been amended according to the amended specification.

Claim rejections 35 U.S.C. 102

5 The examiner rejects claims 1-6 under 35 U.S.C. 102(e) as being anticipated by Nakazawa (U.S. 2005/0193548)

 Claim 1 has been amended to include the features of:

1. the insulation layer is coated between the first electrodes and **in contact with** the upper surface of the bottom base; and
- 10 2. the frame layer is arranged **on and in contact with** the first electrodes and the insulation layer to form a cavity together with the bottom base.

 In the!548 patent, the bottom layer (10) includes layers (10a) and (10b). The examiner admitted insulation layer (10b) is **not** coated on and in contact with the upper surface of the bottom base (10), and the frame layer 17 is **not** arranged on
15 and in contact with the insulation layer.

 In this claimed invention, since the first electrodes are smoothed, the insulation layer is in contact with the upper surface of the bottom base and the frame layer is in contact with the first electrodes and the insulation layer. Considerations of the amended claim 1 and its dependent claims 2-3 are therefore
20 politely requested.

 Claim 4 has been amended to include the features of:

1. the insulation layer is coated between the first electrodes and **in contact with** the upper surface of the bottom base;
- 25 2. the frame layer is arranged **on and in contact with** the first electrodes and the insulation layer to form a cavity together with the bottom base; and
3. cutting from the frame layer to the glue film to form the substrate structures.

 In the!548 patent, the bottom layer (10) includes layers (10a) and (10b). The
30 examiner admitted insulation layer (10b) is **not** coated on and in contact with the upper surface of the bottom base (10), and the frame layer 17 is **not** arranged on

Appl. No. 11/131,727
Amdt. dated October 19, 2006
Reply to Office action of 06/30/2006

and in contact with the insulation layer.

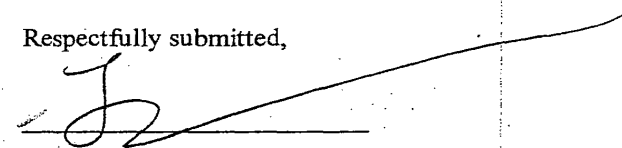
In this claimed invention, since the first electrodes are smoothed, the insulation layer is in contact with the upper surface of the bottom base and the frame layer is in contact with the first electrodes and the insulation layer.

- 5 Considerations of the amended claim 4 and its dependent claims 5-6 are therefore politely requested

In light of the above-mentioned amendments and remarks, Applicant now asserts that all of the grounds for rejection have been traversed or overcome by amendments, and that all of the present claims are in condition for immediate
10 allowance. Applicant therefore requests reconsideration of the objections and rejections, and solicits allowance of the present claims at an early date.

Thank you for your consideration.

Respectfully submitted,

15 Date: 20/10/06 

Joe Liu

Title of Officer: President of Kingpak Technology Inc.,
the Assignee of this application

20 Address: No. 84, Taiho Road, Chupei, Hsinchu Hsien, Taiwan

Replacement Sheet

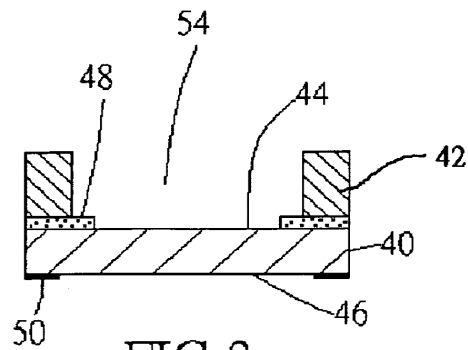


FIG. 3

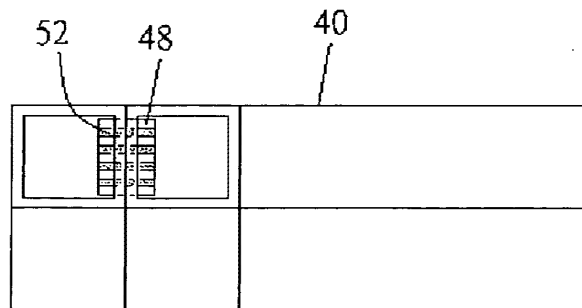


FIG. 4

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Document code: WFEE

United States Patent and Trademark Office
Sales Receipt for Accounting Date: 11/17/2006

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		01	FC : 2251	60.00	DA	

KTI_GEN_00000153

PATENT APPLICATION FEE DETERMINATION RECORD

Effective December 8, 2004

11/3/27

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	6	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	6 minus 20 =	*
INDEPENDENT CLAIMS	2 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	103100	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR
Total	• 6	Minus	** 20 = 0
Independent	• 2	Minus	*** 3 = 0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR
Total	•	Minus	** =
Independent	•	Minus	*** =
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR
Total	•	Minus	** =
Independent	•	Minus	*** =
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

- * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 - ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 - *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
- The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	150.00	OR	BASIC FEE	300.00
X\$ 25=		OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL	150	OR	TOTAL	

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 25=		OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 25=		OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X\$ 25=		OR	X\$50=	
X100=		OR	X200=	
+180=		OR	+360=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	



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APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/131,727	05/18/2005	Chung Hsien Hsin	2011180

CONFIRMATION NO. 5555

000047625
PRO-TECHTOR INTERNATIONAL SERVICES
20775 NORADA CT.
SARATOGA, CA95070

Title: Substrate structure for an image sensor package and method for manufacturing the same

Publication No. US-2006-0275943-A1

Publication Date: 12/07/2006

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 703-305-3028.

Pre-Grant Publication Division, 703-605-4283

KTI_GEN_00000155

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	257999	(substrate board PCB carrier) with (ring frame)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:23
S2	1241604	(substrate board PCB carrier) with (conductor\$2 pattern\$4 contact\$2 pad\$2 electrode\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/21 22:08
S3	468761	(substrate board PCB carrier) with (dielectric insulating insulator)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S4	20937	S1 and S2 and S3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S5	529658	(substrate board PCB carrier) with (dielectric insulating insulator insulation)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S6	22804	S1 and S2 and S5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S7	175801	(substrate board PCB carrier) with (cut\$4 dicing dice)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:15
S8	4612	S6 and S7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:44

1/22/07 1:58:31 AM

Page 1

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EAST Search History

S9	4041	@ad <= "20050518" and S8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:49
S10	373884	"257"/\$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:17
S11	1779	S9 and S10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:48
S12	59290	(substrate board PCB carrier) with (through-hole or (through adj hole))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:48
S13	173823	(substrate board PCB carrier) with frame	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:36
S14	3170	S2 and S12 and S13	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:49
S15	2879	@ad <= "20050518" and S14	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S16	1243	S5 and S15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:50

EAST Search History

S17	2514	257/723.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:50
S18	29	S16 and S17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:50
S19	1	("5386342").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/21 21:55
S20	2263	361/760.ccls. or 361/761.ccls.	US-PGPUB; USPAT	OR	OFF	2007/01/21 21:56
S21	311	S20 and S1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:56
S22	286	S2 and S21	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:57
S23	140	S22 and S5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:57
S24	47	S23 and S7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:57
S25	47	@ad <= "20050518" and S24	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:59

EAST Search History

S26	144	(thanh near2 tran) and (solder\$4 adhesive adhesion)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:58
S27	142	@ad <= "20050518" and S26	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S28	5	("4770641" "5474458" "5491303" "5969952" "6404043").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/21 22:08
S29	327675	(ring frame) near4 (conductor\$2 pattern\$4 contact\$2 pad\$2 electrode\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/21 22:09
S30	1826	S29 and S1 and S2 and S5 and S7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:09
S31	1598	@ad <= "20050518" and S30	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S32	148031	"361"/\$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S33	177	S31 and S32	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:11

EAST Search History

S34	709	S31 and S10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S35	709	@ad <= "20050518" and S34	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S36	222458	(substrate board PCB carrier) with (lid cap cover)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:34
S37	300	S36 and S35	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:24
S38	174375	(substrate board PCB carrier) with (encapsulat\$4 seal\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:34
S39	34542	S36 and S38	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S40	11638	S5 and S39	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S41	10346	@ad <= "20050518" and S40	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35

EAST Search History

S42	9154	S41 and S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S43	165729	(substrate board PCB carrier) with cut\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:36
S44	2164	S42 and S43	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:36
S45	891	257/704.ccls.	US-PGPUB; USPAT	OR	OFF	2007/01/21 22:37
S46	30	S44 and S45	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:37



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	2011180	5555
47625 7590 01/26/2007 PRO-TECHTOR INTERNATIONAL SERVICES 20775 NORADA CT. SARATOGA, CA 95070			EXAMINER TRAN, THANH Y	
			ART UNIT	PAPER NUMBER
			2822	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/26/2007	PAPER	

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

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	11/131,727	CHUNG HSIEN HSIN	
	Examiner	Art Unit	
	Thanh Y. Tran	2822	

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 31 October 2006.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ 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

4) ☒ Claim(s) 1-6 is/are pending in the application.

 4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-6 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ 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).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ 5) ☐ Notice of Informal Patent Application 6) ☐ Other: _____
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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 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.

2. Claims 1-2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhao et al (U.S. 2002/0185734).

As to claim 1, Zhao et al discloses in figure 9A a substrate structure for an image sensor package, the substrate structure comprising: a bottom base (104) having an upper surface formed with a plurality of first electrodes (“stiffener” 112), and a lower surface formed with a plurality of second electrodes (“solder balls” 106), wherein an insulation layer (“epoxy” 116) is coated between the first electrodes (112) and in contact with the upper surface of the bottom base (104) (116 is in contact with upper surface of base 104 through stiffeners 112); a frame layer (“ring” 902) arranged on and in contact with the first electrodes (112) and the insulation layer (116) to form a cavity (114) together with the bottom base (104).

As to claim 2, Zhao et al discloses in figure 9A a substrate, wherein the first electrodes (112) are electrically connected to the second electrodes (106), respectively.

As to claim 5, Zhao et al discloses in figure 9A a substrate structure and a corresponding method, wherein the first electrodes (112) are electrically connected to second electrodes (106) formed on the lower surface of the bottom base (104), respectively.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al (U.S. 2002/0185734) in view of Nakazawa (U.S. 2005/0193548).

As to claim 4, Zhao et al discloses in figure 9A a substrate structure and a corresponding method, the method comprising: providing a bottom base (104) having an upper surface formed with a plurality of first electrodes ("stiffener" 112), coating an insulation layer ("epoxy" 116) between the first electrodes (112) and in contact with the upper surface of the bottom base (104) (116 is in contact with upper surface of base 104 through stiffeners 112); arranging a frame layer ("ring" 902) on and in contact with the first electrodes (112) and the insulation layer (116) to form a plurality of cavities (114) together with bottom base (104).

Zhao does not disclose fixing a glue film onto a lower surface of the bottom base; and cutting from the frame layer to the glue film to form the substrate structure.

Nakazawa discloses figures 9 and 10(a)-10(c) a structure comprising: fixing a glue film onto a lower surface of the bottom base (10) (external terminal 3 is glue to the "bottom base"/substrate 10 by a glue/adhesive, see "adhesive" such as solder in paragraph [0065]); and cutting from the frame layer (17) to the glue film to form the substrate structure (10). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Zhao et al by comprising: fixing a glue film onto a lower

surface of the bottom base; and cutting from the frame layer to the glue film to form the substrate structure as taught by Nakazawa for providing a plurality of substrate structures.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al (U.S. 2002/0185734) in view of Nakazawa (U.S. 2005/0193548) as applied to claim 4 above, and further in view of Hongo et al (U.S. 2005/0141396).

As to claim 6, Zhao et al does not disclose the insulation layer is composed of green paint.

Hongo et al discloses in figures 8(b)-8(c) an insulation layer (15/16) is composed of green paint ("ceramic green sheet") (see paragraph [0028]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Zhao et al by having an insulation layer which is composed of green paint as taught by Hongo et al for fabricating the package for the light emitting element (see paragraph [0028] in Hongo).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al (U.S. 2002/0185734) in view of Hongo et al (U.S. 2005/0141396).

As to claim 3, Zhao et al does not disclose the insulation layer is composed of green paint.

Hongo et al discloses in figures 8(b)-8(c) an insulation layer (15/16) is composed of green paint ("ceramic green sheet") (see paragraph [0028]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify

the device of Zhao et al by having an insulation layer which is composed of green paint as taught by Hongo et al for fabricating the package for the light emitting element (see paragraph [0028] in Hongo).

Response to Arguments

7. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Y. Tran whose telephone number is (571) 272-2110. The examiner can normally be reached on M-F (9-6:30pm).

KTI_GEN_00000167

Art Unit: 2822

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

TYT



Michael Trinh
Primary Examiner

1/22/07

KTI_GEN_00000168

Notice of References Cited	Application/Control No. 11/131,727	Applicant(s)/Patent Under Reexamination CHUNG HSIEN HSIN	
	Examiner Thanh Y. Tran	Art Unit 2822	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0141396	06-2005	Hongo et al.	369/121
*	B	US-2002/0185734	12-2002	Zhao et al.	257/737
*	C	US-2005/0157477	07-2005	Kuramochi et al.	361/761
*	D	US-2005/0042838	02-2005	Garyainov et al.	438/455
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	11/131,727		CHUNG HSIEN HSIN	
	Examiner		Art Unit	
	Thanh Y. Tran		2822	

√	Rejected	—	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	+	Restricted	I	Interference	O	Objected

Claim		Date											
Final	Original	1/19/07											
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Search Notes 		Application/Control No. 11/131,727		Applicant(s)/Patent under Reexamination CHUNG HSIEN HSIN	
		Examiner Thanh Y. Tran		Art Unit 2822	

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Updated east search (using text search - see search history printout)	1/20/2007	TYT



PROTECH INTERNATIONAL SERVICES
20775 Norada Court
Saratoga, CA 95070-3018
Docket No. 2011180
Customer No: 47625

RCE & Amendment AF

Certificate of Mailing

Date: April 25, 2007

I hereby certify that the attached documents, 10 pages, are being deposited with the United States Postal Service as first class mail with sufficient postage under 37 CFR 1.8 on the date indicated above addressed to: Mail Stop AF, Commissioner of Patents, PO Box 1450 Alexandria, VA 22313-1450.

by: Ralph H. Willgoos
Registration Number: 48,800

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Hsin et al.
Serial No. 11/131,727
Filed 05/18/2005
For: "SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR PACKAGE AND
METHOD FOR MANUFACTURING THE SAME"

Examiner: TRAN, THANH Y

Group Art Unit 2822

RCE & Amendment

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Alexandria, VA 22313-1450

Sir:

Transmitted herewith are a Request for Continued Examination and an amendment in the above-identified application. Authorization is hereby granted to charge fees for the RCE to deposit account 16-2497.

☐ Applicant petitions for a one extension of time to respond. Authorization is hereby granted to charge fees for extension of time to deposit account 16-2497.

☒ Small entity status of this application under 37 CFR §§1.9 and 1.27 has been established previously.

☐ A statement to establish small entity status under 37 CFR §§1.9 and 1.27 is enclosed.

The claims fee has been calculated as shown below:

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
TOTAL	3	MINUS *	20	= 0
INDEP.	1	MINUS **	3	= 1
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				

SMALL ENTITY	
RATE	ADDIT. FEE
X25=	\$ 0
X100=	\$ 0
+180=	\$ 0
TOTAL ADDIT. FEE	\$ 0

OR

OTHER THAN A SMALL ENTITY	
RATE	ADDIT. FEE
X50=	\$
X200=	\$
+360=	\$
TOTAL ADDIT. FEE	\$

* Minimum of 20

* Minimum of 3

☒ No claims fee is due.

☐ Authorization is hereby granted to charge claims fee to deposit account 16-2497.

Respectfully Submitted,

Ralph Willgoos
Reg. No. 48,800

KTI_GEN_00000172



Appl. No. 11/131,727
Amdt. dated April 25, 2007
Reply to Office action of 01/26/2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No: 11/131,727 Docket No: 2011180
Filing Date: 05/18/2005 Applicant: Hsin et al.
Examiner: TRAN, THANH Y Art Unit: 2822
Confirmation 5555
No.
Title SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR
 PACKAGE AND METHOD FOR MANUFACTURING THE
 SAME
To: THE ASSISTANT COMMISSIONER FOR PATENTS
 Washington, D.C. 20231
Subject: Request for Continued Examination (RCE) in response to Office
 Action dated 01/26/2007

RESPONSE TO OFFICE ACTION

5 Dear Sir:

 In response to the Office Action dated 01/26/2007, Applicant files a Request
for Continued Examination (RCE) and submits the following amendments and
remarks.

10 This reply includes:

 Amendment to the specification;
 Amendment to the abstract;
 Amended Claim Set; and
 Remarks.

15



PROTECH FOR INTERNATIONAL SERVICES
20775 Norada Court
Saratoga, CA 95070-3018
Docket No. 2011180
Customer No: 47625

RCE & Amendment AF

Certificate of Mailing

Date: April 25, 2007

I hereby certify that the attached documents, 10 pages, are being deposited with the United States Postal Service as first class mail with sufficient postage under 37 CFR 1.8 on the date indicated above addressed to: Mail Stop AF, Commissioner of Patents, PO Box 1450 Alexandria, VA 22313-1450.

by: Ralph H. Willgoos
Registration Number: 48,800

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Hsin et al.
Serial No. 11/131,727
Filed 05/18/2005
For: "SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR PACKAGE AND
METHOD FOR MANUFACTURING THE SAME"

Examiner: TRAN, THANH Y

Group Art Unit 2822

RCE & Amendment

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Alexandria, VA 22313-1450

Sir:

Transmitted herewith are a Request for Continued Examination and an amendment in the above-identified application. Authorization is hereby granted to charge fees for the RCE to deposit account 16-2497.

☐ Applicant petitions for a one extension of time to respond. Authorization is hereby granted to charge fees for extension of time to deposit account 16-2497.

☒ Small entity status of this application under 37 CFR §§1.9 and 1.27 has been established previously.

☐ A statement to establish small entity status under 37 CFR §§1.9 and 1.27 is enclosed.

The claims fee has been calculated as shown below:

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
TOTAL	3	MINUS *	20	= 0
INDEP.	1	MINUS **	3	= 1
[] FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				

SMALL ENTITY	
RATE	ADDIT. FEE
X25=	\$ 0
X100=	\$ 0
+180=	\$ 0
TOTAL ADDIT. FEE	\$ 0

OR

OTHER THAN A SMALL ENTITY	
RATE	ADDIT. FEE
X50=	\$
X200=	\$
+360=	\$
TOTAL ADDIT. FEE	\$

OR

* Minimum of 20

* Minimum of 3

☒ No claims fee is due.

☐ Authorization is hereby granted to charge claims fee to deposit account 16-2497.

Respectfully Submitted,

Ralph Willgoos
Reg. No. 48,800

KTI_GEN_00000174



Appl. No. 11/131,727
Amdt. dated April 25, 2007
Reply to Office action of 01/26/2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No: 11/131,727 Docket No: 2011180
Filing Date: 05/18/2005 Applicant: Hsin et al.
Examiner: TRAN, THANH Y Art Unit: 2822
Confirmation 5555
No.
Title SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR
 PACKAGE AND METHOD FOR MANUFACTURING THE
 SAME
To: THE ASSISTANT COMMISSIONER FOR PATENTS
 Washington, D.C. 20231
Subject: Request for Continued Examination (RCE) in response to Office
 Action dated 01/26/2007

RESPONSE TO OFFICE ACTION

5 Dear Sir:

 In response to the Office Action dated 01/26/2007, Applicant files a Request
for Continued Examination (RCE) and submits the following amendments and
remarks.

10 This reply includes:

 Amendment to the specification;
 Amendment to the abstract;
 Amended Claim Set; and
 Remarks.

15

Amendments to the Specification:

Please replace the paragraph beginning at page 2, line 13, with the following rewritten paragraph:

- 5 -- To achieve the above-mentioned object, the invention provides a substrate structure, which includes a bottom base and a frame layer. The bottom base has an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between the first electrodes and in direct surface contact with the upper surface of
- 10 the bottom base. The frame layer is arranged on and in direct surface contact with the first electrodes and the insulation layer to form a cavity together with the bottom base. The insulation layer is interposed between the bottom base and the frame layer. --

- 15 Please replace the paragraphs beginning at page 3, line 13, with the following rewritten paragraphs:

- The bottom base 40 has an upper surface 44 formed with a plurality of first electrodes 48, and a lower surface 46 formed with a plurality of second electrodes 50. Each of the first electrodes 48 is electrically connected to the corresponding
- 20 second electrode 50. An insulation layer 52 is coated between the first electrodes 48 and in direct surface contact with the upper surface 44 of the bottom base 40 so as to smooth the first electrodes 48 on the upper surface 44 of the bottom base 40. The insulation layer 52 is interposed between the bottom base 40 and the frame layer 42. In the embodiment, the insulation layer 52 is composed of green paint
- 25 coated between the first electrodes 48.

 The frame layer 42 is arranged on and in direct surface contact with the first electrodes 48 and the insulation layer 52 to form a cavity 54 together with the bottom base 40. --

- 30 Please replace the paragraphs beginning at page 4, line 3, with the following

rewritten paragraphs:

-- First, a bottom base 40 having an upper surface 44 formed with a plurality of first electrodes 48 is provided. Each of the first electrodes 48 is electrically connected to the corresponding second electrode 50. An insulation layer 52 is then
5 coated between the first electrodes 48 and in direct surface contact with the upper surface 44 of the bottom base 40 so as to smooth the first electrodes 48 on the upper surface 44 of the bottom base 40. In the embodiment, the insulation layer 52 is composed of green paint coated between the first electrodes 48.

Next, a frame layer 42 is arranged on and in direct surface contact with the
10 upper surface 44 of the bottom base 40 to form a plurality of cavities 54 together with the bottom base 40. --

Amendment to the abstract:

Please replace the paragraph beginning at page 7, line 2, with the following rewritten paragraph:

- 5 -- A substrate structure for an image sensor package includes a bottom base and a
frame layer. The bottom base has an upper surface formed with a plurality of first
electrodes, and a lower surface formed with a plurality of second electrodes. An
insulation layer is coated between the first electrodes and in direct surface contact
with the upper surface of the bottom base. A frame layer is arranged on and in
10 direct surface contact with the first electrodes and the insulation layer to form a
cavity together with the bottom base. The insulation layer is interposed between
the bottom base and the frame layer. --

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- 5 Claim 1 (Currently Amended): A substrate structure for an image sensor package, the substrate structure comprising:
- a bottom base having an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between the first electrodes and in direct
- 10 surface contact with the upper surface of the bottom base;
- a frame layer arranged on and in direct surface contact with the first electrodes and the insulation layer to form a cavity together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer.
- 15 Claim 2 (Previously Presented): The substrate structure according to claim 1, wherein the first electrodes are electrically connected to the second electrodes, respectively.
- Claim 3 (Previously Presented): The substrate structure according to claim 1, wherein the insulation layer is composed of green paint.
- 20 Claim 4 (Currently Amended): A method for manufacturing substrate structures of image sensor packages, the method comprising:
- providing a bottom base having an upper surface formed with a plurality of first electrodes;
- coating an insulation layer between the first electrodes and in direct surface
- 25 contact with the upper surface of the bottom base;
- arranging a frame layer on and in direct surface contact with the first electrodes and the insulation layer to form a plurality of cavities together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer;
- 30 fixing a glue film onto a lower surface of the bottom base; and
- cutting from the frame layer to the glue film to form the substrate structures.

Claim 5 (Previously Presented): The method according to claim 4, wherein the first electrodes are electrically connected to second electrodes formed on the lower surface of the bottom base, respectively.

Claim 6 (Previously Presented): The method according to claim 4, wherein
5 the insulation layer is composed of green paint.

REMARKS/ARGUMENTS

The specification has been correspondingly amended without adding new matters and will be explained as below.

5 In the specification, the changes include the following features without adding new matters.

1. An insulation layer 52 is coated between the first electrodes 48 and in **direct surface contact with** the upper surface 44 of the bottom base 40 so as to smooth the first electrodes 48 on the upper surface 44 of the bottom base 40.
10 The feature can be clearly shown in FIGS. 2 and 4.

2. The insulation layer 52 is interposed between the bottom base 40 and the frame layer 42. The feature has been clearly shown in FIGS. 2-4.

3. The frame layer 42 is arranged on and in direct surface contact with the first electrodes 48 and the insulation layer 52 to form a cavity 54 together with the
15 bottom base 40. The feature can be clearly shown in FIGS. 2 and 4.

Claims 1-6 are now present in this application. Claims 1 and 4 have been amended according to the amended specification.

Claim rejections – 35 U.S.C. 102

20 The examiner rejects claims 1-2 and 5 under 35 U.S.C. 102(b) as being anticipated by Zhao et al. (U.S. 2002/0185734).

Claim 1 has been amended to include the features of:

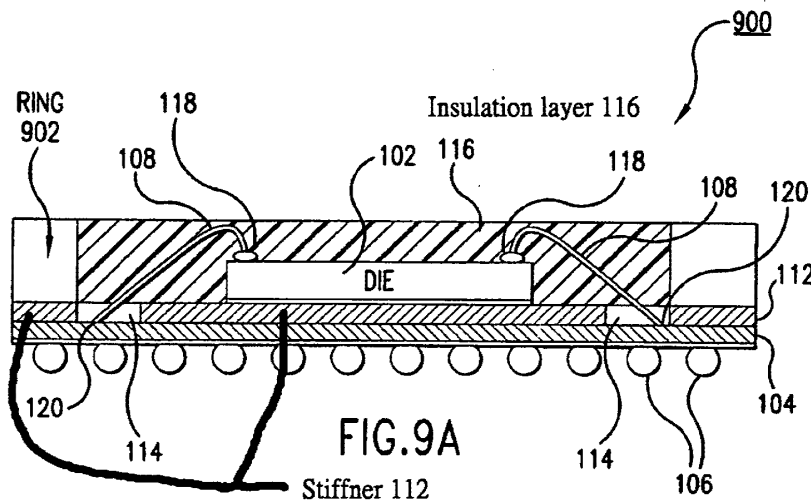
1. The insulation layer is coated between the first electrodes and **in direct surface contact with** the upper surface of the bottom base;
25 2. The frame layer is arranged on and **in direct surface contact with** the first electrodes and the insulation layer to form a cavity together with the bottom base; and
3. The insulation layer is interposed between the bottom base and the frame layer.

30 In Zhao's patent, the insulation layer (116) is **not in direct surface contact with** the upper surface of the bottom base (104), the frame layer (902) is **not in**

direct surface contact with the first electrodes and the insulation layer, and the insulation layer (116) is **not** interposed between the bottom base (104) and the frame layer (902).

Also, the number of the examiner's admitted first electrode (stiffener 112) is only one (see paragraph [0063] and FIGS. 2A, 9B). As shown in FIG. 9A of Zhao, it is possible to misunderstand that there are many stiffeners 112 according to this cross-sectional view. As shown in the drawing and FIGS. 9B and 2A, the number of stiffener 112 is only one. In fact, the stiffener 112 is formed with many openings 114. Please reconsider this feature of Zhao, which is different from the invention.

As for claims 2 and 5, Zhao teaches that "Stiffener 112 may be laminated to substrate 104. Stiffener 112 is typically made from a metal, or combination of metals, such as copper, tin, and aluminum, or may be made from a polymer, for example (paragraph [0063])". So, if the stiffener (112) can serve as the first electrodes in the claimed invention, the second electrodes (106) are commonly electrically connected to the one and only one stiffener (112) and are thus shorted circuited, which will never be made in the art. So, in FIG. 9A of Zhao, it is impossible to see that Zhao teaches that the first electrode (112) is electrically connected to the second electrodes (106).



Considerations of the amended claim 1 and its dependent claims 2-3 are therefore politely requested.

Claim rejections – 35 U.S.C. 103

The examiner rejects claim 4 under 35 U.S.C. 103(a) as being unpatentable
5 over Zhao et al. (U.S. 2002/0185734) in view of Nakazawa (U.S. 2005/0193548).

Claim 4 has been amended to include the features of:

1. The insulation layer is coated between the first electrodes and **in direct surface contact with** the upper surface of the bottom base;
2. The frame layer is arranged on and **in direct surface contact with** the first
10 electrodes and the insulation layer to form a cavity together with the bottom base;
and
3. The insulation layer is interposed between the bottom base and the frame layer.

In Zhao's patent, the insulation layer (116) is **not in direct surface contact**
15 **with** the upper surface of the bottom base (104), the frame layer (902) is **not in direct surface contact with** the first electrodes and the insulation layer, and the insulation layer (116) is **not** interposed between the bottom base (104) and the frame layer (902).

Considerations of the amended claim 4 and its dependent claims 5-6 are
20 therefore politely requested.

The examiner rejects claims 6 and 3 under 35 U.S.C. 103(a) as being unpatentable over Zhao et al. (U.S. 2002/0185734) in view of Nakazawa (U.S. 2005/0193548) as applied to claim 4 above, and further in view of Hongo et al
25 (U.S. 2005/0141396).

Since claims 1 and 4 have been amended. Considerations of claims 3 and 6 are therefore politely requested.

30 In light of the above-mentioned amendments and remarks, Applicant now asserts that all of the grounds for rejection have been traversed or overcome by

Appl. No. 11/131,727
Amdt. dated April 25, 2007
Reply to Office action of 01/26/2007

amendments, and that all of the present claims are in condition for immediate allowance. Applicant therefore requests reconsideration of the rejections, and solicits allowance of the present claims at an early date.

Thank you for your consideration.

5

Respectfully submitted,

Date: _____

Ralph Willgohe

10

Reg. No. 48,800

Document code: WFEE

United States Patent and Trademark Office
Sales Receipt for Accounting Date: 05/11/2007

PBRITTON	SALE	#00000003	Mailroom Dt:	04/27/2007	162497	11131727
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KTI_GEN_00000185



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	2011180	5555
47625	7590	05/11/2007	EXAMINER	
PRO-TECHTOR INTERNATIONAL SERVICES 20775 NORADA CT. SARATOGA, CA 95070			ART UNIT	PAPER NUMBER

DATE MAILED: 05/11/2007

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

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No. 11/131727	Applicant(s) H/SIN, etc	
	Examiner 1 RAN	Art Unit 2822	

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

The amendment document filed on 4/27/07 RCE is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
 - ☐ A. Amended paragraph(s) do not include markings.
 - ☐ B. New paragraph(s) should not be underlined.
 - ☐ C. Other _____.
- ☐ 2. Abstract:
 - ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
 - ☐ B. Other _____.
- ☐ 3. Amendments to the drawings:
 - ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
 - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
 - ☐ C. Other _____.
- ☐ 4. Amendments to the claims:
 - ☐ A. A complete listing of all of the claims is not present.
 - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
 - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
 - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
 - ☐ E. Other: _____.
- ☒ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4):

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

- Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment, an amendment filed after allowance, or a drawing submission (only). If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
- Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1. to 4. are checked, the correction required is only the **corrected section** of the non-compliant amendment in compliance with 37 CFR 1.121.

Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action.

Failure to timely respond to this notice will result in:

Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action; or

Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable
U.S. Patent and Trademark Office
PTOL-324 (04-06)

Notice of Non-Compliant Amendment (37 CFR 1.121)

Telephone No.

Part of Paper No.

KTI_GEN_00000187

PATENT APPLICATION FEE DETERMINATION RECORD
Effective December 8, 2004

11/3/127

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	6	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	6 minus 20 =	*
INDEPENDENT CLAIMS	2 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐

OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	150.00
X\$ 25=	
X100=	
+180=	
TOTAL	150.00

RATE	FEE
BASIC FEE	300.00
X\$50=	
X200=	
+360=	
TOTAL	

CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	103100		
Total	6	20	0
Independent	2	3	0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE
X\$ 25=	
X100=	
+180=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$50=	
X200=	
+360=	
TOTAL ADDIT. FEE	

4/27/07

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	6	20	
Independent	2	3	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE
X\$ 25=	
X100=	
+180=	
TOTAL ADDIT. FEE	

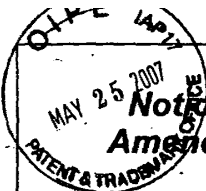
RATE	ADDITIONAL FEE
X\$50=	
X200=	
+360=	
TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total			
Independent			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐			

RATE	ADDITIONAL FEE
X\$ 25=	
X100=	
+180=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$50=	
X200=	
+360=	
TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



**Notice of Non-Compliant
Amendment (37 CFR 1.121)**

Application No.

11/131727

Applicant(s)

HSIN, etc

Examiner

100N

Art Unit

2822

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

The amendment document filed on 4/27/07 RCE is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
- ☐ A. Amended paragraph(s) do not include markings.
 - ☐ B. New paragraph(s) should not be underlined.
 - ☐ C. Other _____.
- ☐ 2. Abstract:
- ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
 - ☐ B. Other _____.
- ☐ 3. Amendments to the drawings:
- ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
 - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
 - ☐ C. Other _____.
- ☐ 4. Amendments to the claims:
- ☐ A. A complete listing of all of the claims is not present.
 - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
 - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
 - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
 - ☐ E. Other _____.
- ☒ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4):

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

1. Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment, an amendment filed after allowance, or a drawing submission (only). If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
2. Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1. to 4. are checked, the correction required is only the **corrected section** of the non-compliant amendment in compliance with 37 CFR 1.121.

Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action.

Failure to timely respond to this notice will result in:

Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a Quayle action; or

Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable

Telephone No.

U.S. Patent and Trademark Office
PTOL-324 (04-06)

Notice of Non-Compliant Amendment (37 CFR 1.121)

Part of Paper No.

KTI_GEN_00000189



Pro-TECHNICAL INTERNATIONAL SERVICES
20775 Norada Court
Saratoga, CA 95070-3018
Docket No. 2011180
Customer No: 47625

Correction to Amendment AF

Certificate of Mailing

Date: May 23, 2007

I hereby certify that the attached documents, 5 pages, are being deposited with the United States Postal Service as first class mail with sufficient postage under 37 CFR 1.8 on the date indicated above addressed to: Mail Stop AF, Commissioner of Patents, PO Box 1450 Alexandria, VA 22313-1450.

by: Ralph H. Willgohs
Registration Number: 48,800

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Hsin et al.
Serial No. 11/131,727
Filed 05/18/2005
For: "SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR PACKAGE AND METHOD FOR MANUFACTURING THE SAME"

Examiner: TRAN, THANH Y

Group Art Unit 2822

Amendment Correction

THE COMMISISIONER OF PATENTS AND TRADEMARKS
Alexandria, VA 22313-1450

Sir:

Transmitted herewith are a Copy of Non-compliant Amendment Notice and a correction to the Remarks section of the amendment in the above-identified application. Authorization is hereby granted to charge fees for the RCE and extension of time to respond to deposit account 16-2497.

☒ Applicant petitions for a one extension of time to respond. Authorization is hereby granted to charge fees for extension of time to deposit account 16-2497.

☒ Small entity status of this application under 37 CFR §§1.9 and 1.27 has been established previously.

The claims fee has been calculated as shown below:

	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
TOTAL	3	MINUS *	20	= 0
INDEP.	1	MINUS **	3	= 1
] FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				

SMALL ENTITY	
RATE	ADDIT. FEE
X25=	\$ 0
X100=	\$ 0
+180=	\$ 0
TOTAL ADDIT. FEE	\$ 0

OR

OTHER THAN A SMALL ENTITY	
RATE	ADDIT. FEE
X50=	\$
X200=	\$
+360=	\$
TOTAL ADDIT. FEE	\$

OR

* Minimum of 20

* Minimum of 3

☒ No claims fee is due.

☐ Authorization is hereby granted to charge claims fee to deposit account 16-2497.

Respectfully Submitted,

Ralph Willgohs
Reg. No. 48,800

KTI_GEN_00000190

REMARKS/ARGUMENTS

The specification has been correspondingly amended without adding new matters and will be explained as below.

5 In the specification, the changes include the following features without adding new matters.

1. An insulation layer 52 is coated between the first electrodes 48 and in **direct surface contact with** the upper surface 44 of the bottom base 40 so as to smooth the first electrodes 48 on the upper surface 44 of the bottom base 40.
10 The feature can be clearly shown in FIGS. 2 and 4.

2. The insulation layer 52 is interposed between the bottom base 40 and the frame layer 42. The feature has been clearly shown in FIGS. 2-4.

3. The frame layer 42 is arranged on and in direct surface contact with the first electrodes 48 and the insulation layer 52 to form a cavity 54 together with the
15 bottom base 40. The feature can be clearly shown in FIGS. 2 and 4.

Claims 1-6 are now present in this application. Claims 1 and 4 have been amended according to the amended specification.

Claim rejections – 35 U.S.C. 102

20 The examiner rejects claims 1-2 and 5 under 35 U.S.C. 102(b) as being anticipated by Zhao et al. (U.S. 2002/0185734).

Claim 1 has been amended to include the features of:

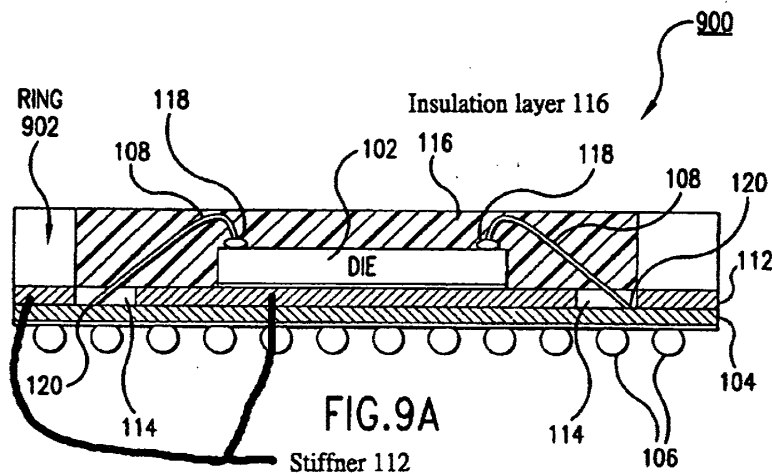
1. The insulation layer is coated between the first electrodes and in **direct surface contact with** the upper surface of the bottom base;
25 2. The frame layer is arranged on and in **direct surface contact with** the first electrodes and the insulation layer to form a cavity together with the bottom base; and
3. The insulation layer is interposed between the bottom base and the frame layer.

30 In Zhao's patent, the insulation layer (116) is **not in direct surface contact with** the upper surface of the bottom base (104), the frame layer (902) is **not in**

direct surface contact with the first electrodes and the insulation layer, and the insulation layer (116) is **not** interposed between the bottom base (104) and the frame layer (902).

Also, the number of the examiner's admitted first electrode (stiffener 112) is only one (see paragraph [0063] and FIGS. 2A, 9B). As shown in FIG. 9A of Zhao, it is possible to misunderstand that there are many stiffeners 112 according to this cross-sectional view. As shown in the drawing and FIGS. 9B and 2A, the number of stiffener 112 is only one. In fact, the stiffener 112 is formed with many openings 114. Please reconsider this feature of Zhao, which is different from the invention.

As for claims 2 and 5, Zhao teaches that "Stiffener 112 may be laminated to substrate 104. Stiffener 112 is typically made from a metal, or combination of metals, such as copper, tin, and aluminum, or may be made from a polymer, for example (paragraph [0063])". So, if the stiffener (112) can serve as the first electrodes in the claimed invention, the second electrodes (106) are commonly electrically connected to the one and only one stiffener (112) and are thus shorted circuited, which will never be made in the art. So, in FIG. 9A of Zhao, it is impossible to see that Zhao teaches that the first electrode (112) is electrically connected to the second electrodes (106).



Considerations of the amended claim 1 and its dependent claims 2-3 are therefore politely requested.

Claim rejections – 35 U.S.C. 103

The examiner rejects claim 4 under 35 U.S.C. 103(a) as being unpatentable
5 over Zhao et al. (U.S. 2002/0185734) in view of Nakazawa (U.S. 2005/0193548).

Claim 4 has been amended to include the features of:

1. The insulation layer is coated between the first electrodes and **in direct surface contact with** the upper surface of the bottom base;
2. The frame layer is arranged on and **in direct surface contact with** the first
10 electrodes and the insulation layer to form a cavity together with the bottom base;
and
3. The insulation layer is interposed between the bottom base and the frame layer.

In Zhao's patent, the insulation layer (116) is **not in direct surface contact**
15 **with** the upper surface of the bottom base (104), the frame layer (902) is **not in direct surface contact with** the first electrodes and the insulation layer, and the insulation layer (116) is **not** interposed between the bottom base (104) and the frame layer (902).

Considerations of the amended claim 4 and its dependent claims 5-6 are
20 therefore politely requested.

The examiner rejects claims 6 and 3 under 35 U.S.C. 103(a) as being unpatentable over Zhao et al. (U.S. 2002/0185734) in view of Nakazawa (U.S. 2005/0193548) as applied to claim 4 above, and further in view of Hongo et al
25 (U.S. 2005/0141396).

Since claims 1 and 4 have been amended. Considerations of claims 3 and 6 are therefore politely requested.

30 In light of the above-mentioned amendments and remarks, Applicant now asserts that all of the grounds for rejection have been traversed or overcome by

Appl. No. 11/131,727
Amdt. dated April 25, 2007
Reply to Office action of 01/26/2007

amendments, and that all of the present claims are in condition for immediate allowance. Applicant therefore requests reconsideration of the rejections, and solicits allowance of the present claims at an early date.

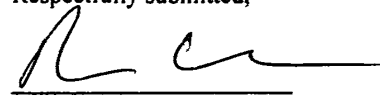
Thank you for your consideration.

5

Respectfully submitted,

Date:

May 23, 2007



Ralph Willgohe

Reg. No. 48,800

10



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	2011180	5555
47625 7590 03/25/2008 PRO-TECHTOR INTERNATIONAL SERVICES 20775 NORADA CT. SARATOGA, CA 95070			EXAMINER TRAN, THANH Y	
			ART UNIT 2892	PAPER NUMBER
			MAIL DATE 03/25/2008	DELIVERY MODE PAPER

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 Abandonment	Application No.	Applicant(s)	
	11/131,727	HSIN ET AL.	
	Examiner	Art Unit	
	THANH Y. TRAN	2892	

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

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 25 May 2007.
 - (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
(A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) ☒ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) ☐ The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☒ The reason(s) below:

The abandonment was confirmed with Mr. Ralph Willgoths.

/Lex Malsawma/
Primary Examiner, Art Unit 2892

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

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042008

PRO-TECHTOR INTERNATIONAL SERVICES
20775 NORADA COURT
SARATOGA, CA 95070-3018

In re Application of: Chung Hsien Hsin et al.
Serial No.: 11/131,727
Filed: May 18, 2005
Attorney Docket No.: 2011180

DECISION *SUA SPONTE*
WITHDRAWING HOLDING
OF ABANDONMENT

This is a decision, *sua sponte*, withdrawing the holding of abandonment of the above-identified application.

A Notice of Non-Compliant Amendment was mailed on May 11, 2007. The Notice indicates that the amendment/submission filed with the request for continued examination (RCE) on April 27, 2007 was not signed in accordance with 37 CFR 1.4. The application was held abandoned and a Notice of Abandonment was mailed on March 25, 2008.

Although no petition or request to withdraw the holding of abandonment in this application has been filed, the Notice of Abandonment is hereby vacated and the holding of abandonment is withdrawn in view of the fact that a properly signed Response along with a petition for an extension of time of one month and an authorization to charge the requisite fees were timely filed on May 25, 2007. The application is not abandoned in fact.

The response file May 25, 2007 will be processed and an Office action will be prepared by the examiner in due course.

Any inquiry regarding this decision should be directed to Hien H. Phan, Special Program Examiner, at (571) 272-1606.

Richard K. Seidel, Group Director
Technology Center 2800
Semiconductors, Electrical and Optical
Systems and Components

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PAGE 1/1 * RCVD AT 2/1/2012 4:49:25 PM [Eastern Standard Time] * SVR:WPTOFAX-00235 * DNS:2731606 * CSID:6504241064 * DURATION (mm:ss):00:39



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04-2008

PRO-TECHCOR INTERNATIONAL SERVICES
20775 NORADA COURT
SARATOGA, CA 95070-5018

MAY - 6 2008

In re Application of: Chung Hsien Hsin et al.
Serial No.: 11/431,727
Filed: May 18, 2005
Attorney Docket No.: 2011180

DECISION *SUA SPONTE*
WITHDRAWING HOLDING
OF ABANDONMENT

This is a decision, *sua sponte*, withdrawing the holding of abandonment of the above-identified application.

A Notice of Non-Compliant Amendment was mailed on May 11, 2007. The Notice indicates that the amendment/submission filed with the request for continued examination (RCE) on April 27, 2007 was not signed in accordance with 37 CFR 1.4. The application was held abandoned and a Notice of Abandonment was mailed on March 25, 2008.

Although no petition or request to withdraw the holding of abandonment in this application has been filed, the Notice of Abandonment is hereby vacated and the holding of abandonment is withdrawn in view of the fact that a properly signed Response along with a petition for an extension of time of one month and an authorization to charge the requisite fees were timely filed on May 25, 2007. The application is not abandoned in fact.

The response file May 25, 2007 will be processed and an Office action will be prepared by the examiner in due course.

Any inquiry regarding this decision should be directed to Hien H. Phan, Special Program Examiner, at (571) 272-1506.

Richard K. Seidel, Group Director
Technology Center 2850
Semiconductors, Electrical and Optical
Systems and Components

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FAX NO. 6504241064

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	2011180	5555
47625 7590 02/15/2012 PRO-TECHTOR INTERNATIONAL SERVICES 20775 NORADA CT. SARATOGA, CA 95070			EXAMINER TRAN, THANH Y	
			ART UNIT 2829	PAPER NUMBER
			MAIL DATE 02/15/2012	DELIVERY MODE PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	11/131,727	HSIN ET AL.	
	Examiner	Art Unit	
	THANH Y. TRAN	2829	

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 06 May 2008.
- 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) 1-6 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-6 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 31 October 2006 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).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
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) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: ____. |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date: ____. | 6) ☐ Other: ____. |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/27/2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 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 –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (U.S. 2006/0008939).

The applied reference has a common inventor and/or assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

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As to claim 1, Chen et al. disclose in Figs. 3-4 a substrate structure for an image sensor package, the substrate structure comprising: a bottom base ("substrate" 40) having an upper surface (top surface) formed with a plurality of first electrodes (54) (see Fig. 3, paragraph [0018]), and a lower surface (bottom surface) formed with a plurality of second electrodes (56) (see Fig. 3, paragraph [0015]), wherein an insulation layer ("green-paint" 58) is coated between the first electrodes (54) and in direct surface contact with the upper surface (top surface) of the bottom base ("substrate" 40) (see Figs. 3-4, paragraph [0015]); a frame layer (42) arranged on and in direct surface contact with the first electrodes (54) and the insulation layer (58) to form a cavity together with the bottom base ("substrate" 40) (see Figs. 3-4, paragraph [0015]), wherein the insulation layer ("green-paint" 58) is interposed between the bottom base ("substrate" 40) and the frame layer (42) (see Figs. 3-4, paragraph [0016]).

As to claim 2, as applied to claim 1 above, Chen et al. disclose in Figs. 3-4 all claimed limitations including the limitation wherein the first electrodes (54) are electrically connected to the second electrodes (56), respectively (see Fig. 3, paragraph [0015]).

As to claim 3, as applied to claim 1 above, Chen et al. disclose in Figs. 3-4 all claimed limitations including the limitation wherein the insulation layer ("green-paint" 58) is composed of green paint (see Fig. 4, paragraph [0016]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tao et al. (U.S. 2003/0214029) in view of Lin et al. (U.S. 2002/0058208).

As to claims 1, 2 and 3, Tao et al. disclose in Fig. 4 a substrate structure for an image sensor package, the substrate structure comprising:

a bottom base ("base chip" 111) having an upper surface (top surface) formed with a plurality of first electrodes ("under bump metallurgy UBM" 140), and a lower surface (bottom surface) (see Fig. 4, paragraph [0026]), wherein an insulation layer ("passivation layer" 110) is coated between the first electrodes ("under bump metallurgy UBM" 140) and in direct surface contact with the upper surface (top surface) of the bottom base ("base chip" 111) (see Fig. 4, paragraph [0026]); a frame layer ("gold bump ring" 150) arranged on and in direct surface contact with the first electrodes (140) and the insulation layer ("passivation layer" 110) to form a cavity together with the bottom base (111) (see Fig. 4, paragraph [0027]), wherein the insulation

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laver (“passivation layer” 110) is interposed between the bottom base (“base chip” 111) and the frame layer (“gold bump ring” 150) (see Fig. 4, paragraph [0026]).

Tao et al. do not disclose a bottom base having a lower surface formed with a plurality of second electrodes; wherein the first electrodes are electrically connected to the second electrodes, respectively; and wherein the insulation layer is composed of green paint.

However, Lin et al. disclose in Fig. 5 a bottom base (“PTC features” 10) having a lower surface (bottom surface) formed with a plurality of second electrodes (“bottom electrodes” 15a, 15b) (see Fig. 5, paragraph [0055]); wherein the first electrodes (13a, 13b) are electrically connected to the second electrodes (“bottom electrodes” 15a, 15b), respectively (see Fig. 5, paragraph [0055]-[0056]); and wherein the insulation layer (“insulating layer” 19a) is composed of green paint (see Fig. 5, paragraph [0056] and ABSTRACT).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify reference of Tao et al. by using a bottom base having a lower surface formed with a plurality of second electrodes, wherein the first electrodes are electrically connected to the second electrodes, respectively, and wherein the insulation layer is composed of green paint as taught by Lin et al. in order to provide a double wiring base which can electrically connect to other electronic devices with both side surfaces.

As to claims 4, 5 and 6, Tao et al. disclose in Fig. 4 a structure and a corresponding method for manufacturing substrate structures of image sensor packages, the method comprising: providing a bottom base (“base chip” 111) having an upper surface (top surface) formed with a

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plurality of first electrodes (“under bump metallurgy UBM” 140) (see Fig. 4, paragraph [0026]); coating an insulation layer (“passivation layer” 110) between the first electrodes (“under bump metallurgy UBM” 140) and in direct surface contact with the upper surface (top surface) of the bottom base (“base chip” 111) (see Fig. 4, paragraph [0026]); arranging a frame layer (“gold bump ring” 150) on and in direct surface contact with the first electrodes (“under bump metallurgy UBM” 140) and the insulation layer (“passivation layer” 110) to form a plurality of cavities together with the bottom base (111) (see Fig. 4, paragraph [0027]), wherein the insulation layer (“passivation layer” 110) is interposed between the bottom base (“base chip” 111) and the frame layer (“gold bump ring” 150) (see Fig. 4, paragraph [0026]); and cutting from the frame layer (“gold bump ring” 150) to the lower surface (bottom surface) to form the substrate structures (400) (see Figs. 4-8, paragraph [0042]).

Tao et al. do not teach fixing a glue film onto a lower surface of the bottom base; wherein the first electrodes are electrically connected to second electrodes formed on the lower surface of the bottom base, respectively; and wherein the insulation layer is composed of green paint.

However, Lin et al. teach in Fig. 5 the steps of: fixing a glue film (“insulating layer” 19b) onto a lower surface (bottom surface) of the bottom base (“PTC features” 10) (see Fig. 5, paragraph [0056]); wherein the first electrodes (“top metal electrodes” 13a, 13b) are electrically connected to second electrodes (“bottom electrodes” 15a, 15b) formed on the lower surface (bottom surface) of the bottom base (“PTC features” 10), respectively (see Fig. 5, paragraph [0055]-[0056]); and wherein the insulation layer (“insulating layer” 19a) is composed of green paint (see Fig. 5, paragraph [0056] and ABSTRACT).

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify reference of Tao et al. by fixing a glue film onto a lower surface of the bottom base so that the substrate structures can be formed by cutting from the frame layer to the glue film; wherein the first electrodes are electrically connected to second electrodes formed on the lower surface of the bottom base, respectively; and wherein the insulation layer is composed of green paint as taught by Lin et al. in order to protect and secure the second electrodes on the bottom surface of the bottom base which can electrically connect to other electronic devices with both side surfaces.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THANH Y. TRAN whose telephone number is (571)272-2110. The examiner can normally be reached on M-F (11:00am-8:00pm EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

KTI_GEN_0000206

Art Unit: 2829

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.

/THANH Y TRAN/
Examiner, Art Unit 2829
February 11, 2012

KTI_GEN_00000207

Notice of References Cited	Application/Control No. 11/131,727	Applicant(s)/Patent Under Reexamination HSIN ET AL.	
	Examiner THANH Y. TRAN	Art Unit 2829	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0214029	11-2003	Tao et al.	257/723
*	B	US-2002/0058208	05-2002	Lin et al.	430/311
*	C	US-2006/0008939	01-2006	Chen et al.	438/065
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No. 11131727	Applicant(s)/Patent Under Reexamination HSIN ET AL.
	Examiner THANH Y TRAN	Art Unit 2829

SEARCHED			
Class	Subclass	Date	Examiner
257	723, 724, 737, 738, 686, 690, 734, 784, 780, 698	2/10/2012	TYT
438	109, 113, 121, 125	2/10/2012	TYT
361	742, 758, 767	2/10/2012	TYT

SEARCH NOTES		
Search Notes	Date	Examiner
Updated East search (see search history printout)	2/9/2012	TYT
Inventor's name search (see search history printout)	2/11/2012	TYT

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20060008939").PN.	US-PGPUB; USPAT	OR	OFF	2012/02/11 00:24
L2	6	(Yves near Huang).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:25
L3	57	(Kevin near chang).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:26
L4	10	(chief near lin).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:26
L5	1	1 and ((substrate or board or PCB or carrier or base) same (frame or ring))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:26
L6	1	@ad <= "20050518" and 5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:26
L7	3	2 and ((substrate or board or PCB or carrier or base) same (frame or ring))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:26
L8	3	@ad <= "20050518" and 7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:26
L9	5	3 and ((substrate or board or PCB or carrier or base) same (frame or ring))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:27
L10	5	@ad <= "20050518" and 9	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:27
L11	2	4 and ((substrate or board or PCB or carrier or base) same (frame or	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/02/11 00:28

		ring))	EPO; JPO; DERWENT; IBM_TDB			
L12	2	@ad <= "20050518" and 11	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:28
S1	257999	(substrate board PCB carrier) with (ring frame)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:23
S2	1241604	(substrate board PCB carrier) with (conductor\$2 pattern\$4 contact\$2 pad\$2 electrode\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/21 22:08
S3	468761	(substrate board PCB carrier) with (dielectric insulating insulator)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S4	20937	S1 and S2 and S3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S5	529658	(substrate board PCB carrier) with (dielectric insulating insulator insulation)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S6	22804	S1 and S2 and S5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:40
S7	175801	(substrate board PCB carrier) with (cut\$4 dicing dice)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:15
S8	4612	S6 and S7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 20:44
S9	4041	@ad <= "20050518" and S8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:49
S10	373884	"257"/\$.cls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:17
S11	1779	S9 and S10	US-PGPUB; USPAT; USOCR;	OR	OFF	2007/01/21 21:48

			EPO; JPO; DERWENT; IBM_TDB			
S12	59290	(substrate board PCB carrier) with (through-hole or (through adj hole))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:48
S13	173823	(substrate board PCB carrier) with frame	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:36
S14	3170	S2 and S12 and S13	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:49
S15	2879	@ad <= "20050518" and S14	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S16	1243	S5 and S15	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:50
S17	2514	257/723.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:50
S18	29	S16 and S17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:50
S19	1	("5386342").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/21 21:55
S20	2263	361/760.ccls. or 361/761.ccls.	US-PGPUB; USPAT	OR	OFF	2007/01/21 21:56
S21	311	S20 and S1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:56
S22	286	S2 and S21	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:57
S23	140	S22 and S5	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:57
S24	47	S23 and S7	US-PGPUB; USPAT; USOCR;	OR	OFF	2007/01/21 21:57

			EPO; JPO; DERWENT; IBM_TDB			
S25	47	@ad <= "20050518" and S24	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:59
S26	144	(thanh near2 tran) and (solder\$4 adhesive adhesion)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 21:58
S27	142	@ad <= "20050518" and S26	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S28	5	("4770641" "5474458" "5491303" "5969952" "6404043").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/01/21 22:08
S29	327675	(ring frame) near4 (conductor\$2 pattern\$4 contact\$2 pad\$2 electrode\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/21 22:09
S30	1826	S29 and S1 and S2 and S5 and S7	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:09
S31	1598	@ad <= "20050518" and S30	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S32	148031	"361"/\$.cls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S33	177	S31 and S32	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:11
S34	709	S31 and S10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S35	709	@ad <= "20050518" and S34	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:10
S36	222458	(substrate board PCB carrier) with (lid cap cover)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT;	OR	OFF	2007/01/21 22:34

			IBM_TDB			
S37	300	S36 and S35	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:24
S38	174375	(substrate board PCB carrier) with (encapsulat\$4 seal\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:34
S39	34542	S36 and S38	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S40	11638	S5 and S39	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S41	10346	@ad <= "20050518" and S40	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S42	9154	S41 and S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:35
S43	165729	(substrate board PCB carrier) with cut\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:36
S44	2164	S42 and S43	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:36
S45	891	257/704.ccls.	US-PGPUB; USPAT	OR	OFF	2007/01/21 22:37
S46	30	S44 and S45	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/21 22:37
S47	913358	(substrate or board or PCB or carrier or base) with (pad or electrode or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 01:11
S48	88587	(frame or ring) near4 (pad or electrode or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 01:12
S49	444265	(substrate or board or PCB or	US-PGPUB;	OR	OFF	2012/02/09

		carrier or base) near8 (glue or adhesive or adhesion)	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB			01:13
S50	3512	S47 and S48 and S49	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 01:13
S51	1902	@ad <= "20050518" and S50	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 01:14
S52	709	S51 and ((insulat\$4 or dielectric) adj (layer or film))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 01:15
S54	320837	((insulat\$4 or dielectric) adj (layer or film)) or (adhesive or adhesion)) near5 (pad or electrode or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 01:17
S55	424	S52 and S54	US-PGPUB; USPAT	OR	OFF	2012/02/09 01:17
S56	2	("2003/0160323").URPN.	USPAT	OR	OFF	2012/02/09 02:18
S57	1	("7064428").URPN.	USPAT	OR	OFF	2012/02/09 02:21
S58	8	("6838762").URPN.	USPAT	OR	OFF	2012/02/09 02:24
S59	48849	(stiffen\$4 or ring) near4 (pad or electrode or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 02:39
S60	22424	(passivat\$4 adj (layer or film)) near5 (pad or electrode or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 02:39
S61	366	S59 and S60	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 02:39
S62	316	S61 and S47	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 02:39
S63	146	@ad <= "20050518" and S62	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 02:40
S64	21099	((257/723-724) or (257/737) or (257/738) or (257/686) or	US-PGPUB; USPAT	OR	OFF	2012/02/09 02:41

		(257/690) or (257/734) or (257/784) or (257/780) or (257/698)).CCLS.				
S65	12	S63 and S64	US-PGPUB; USPAT	OR	ON	2012/02/09 02:41
S66	7344	("0438114").PN. or ((438/109) or (438/113) or (438/121) or (438/125)).CCLS.	US-PGPUB; USPAT	OR	OFF	2012/02/09 03:05
S67	1	S63 and S66	US-PGPUB; USPAT	OR	ON	2012/02/09 03:05
S68	134	S63 not S65	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 03:07
S69	847766	(substrate or board or PCB or carrier or base) with (frame or ring)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 03:27
S70	71220	S47 and S69	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 03:27
S71	40027	@ad <= "20050518" and S70	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 03:28
S72	117549	(adhesive or adhesion) with (pad or electrode or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 03:29
S73	4314	S71 and S72	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/09 03:29
S74	1515	((361/742) or (361/758) or (361/770) or (361/767)).CCLS.	US-PGPUB; USPAT	OR	OFF	2012/02/09 03:32
S75	22	S73 and S74	US-PGPUB; USPAT	OR	ON	2012/02/09 03:32
S76	46	("5818699").URPN.	USPAT	OR	OFF	2012/02/09 03:39
S77	41	("5949654").URPN.	USPAT	OR	OFF	2012/02/09 03:41
S78	1	("20030214029").PN.	US-PGPUB; USPAT	OR	OFF	2012/02/09 17:26
S79	1	11/131,727	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:18
S80	2	((green adj paint) near4 (insulat\$4 or dielectric)) with (pad or electrode)	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:23
S81	2	((green adj paint) near7 (insulat\$4 or dielectric)) with (pad or electrode)	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:25

S82	1	12/512,281	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:34
S83	1	12/792,025	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:36
S84	1	13/028,654	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:38
S85	1	13/007,927	US-PGPUB; USPAT	OR	OFF	2012/02/09 20:40
S86	1	("20020058208").PN.	US-PGPUB; USPAT	OR	OFF	2012/02/10 00:18
S87	1	("20030214029").PN.	US-PGPUB; USPAT	OR	OFF	2012/02/10 22:35
S88	554	(Chung near Hsien).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:08
S89	6	(Yves near Huang).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:09
S90	50	(Kevin near chang).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:09
S91	10	(chief near lin).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/11 00:09
S92	79	S88 and ((substrate or board or PCB or carrier or base) same (frame or ring))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:10
S93	28	@ad <= "20050518" and S92	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/02/11 00:10
S94	5	S93 and (pad or electrode)	US-PGPUB; USPAT	OR	OFF	2012/02/11 00:10

2/ 11/ 2012 12:39:45 AM

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<i>Index of Claims</i> 	Application/Control No. 11131727	Applicant(s)/Patent Under Reexamination HSIN ET AL.
	Examiner THANH Y TRAN	Art Unit 2829

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	02/10/2012								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of	)	
HSIN et al.	)	
Application Number: 11/131,727	)	Art Unit 2829
Filed: May 18, 2005	)	Examiner
For: SUBSTRATE STRUCTURE FOR AN IMAGE	)	Thanh Y. TRAN
SENSOR PACKAGE AND METHOD FOR	)	
MANUFACTURING THE SAME	)	
Attorney Docket No. CHIP-0220	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

LETTER

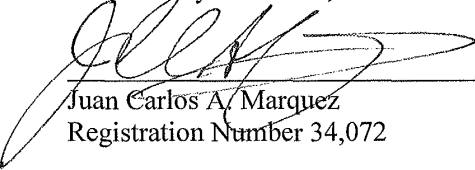
Sir:

The below-identified communications are submitted in the above-captioned application or proceeding:

- (x) Revocation of All Prior Powers and New Power of Attorney by Assignee
- (x) Assignee Statement under 37 C.F.R. §3.73(b)
- () Check _____

- ☒ The Commissioner is hereby authorized to charge payment of any fees associated with this communication, including fees under 37 C.F.R. § 1.16 and 1.17 or credit any overpayment to **Deposit Account Number 12-0555**.

Respectfully submitted,



Juan Carlos A. Marquez
Registration Number 34,072

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Alexandria, VA 22314
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Customer No. 38327
May 10, 2012

246754:1:ALEXANDRIA

KTI_GEN_00000219

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Hsin et al.

Application No./Patent No.: 11/131,727 Filed/Issue Date: May 18, 2005

Entitled:

Kingpak Technology Inc., a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is ____ %)
in the patent application/patent identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 016176, Frame 0109 for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

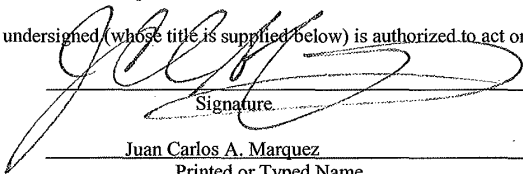
1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.
3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.



Signature
Juan Carlos A. Marquez
Printed or Typed Name

Attorney

Title

May 10, 2012
Date

(703) 837-3930
Telephone Number

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

KTI_GEN_0000220

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of	)	
	)	
Hsin et al.	)	
	)	Art Unit
Application Number: 11/131,727	)	
	)	
Filed: 05/18/2005	)	
	)	
For: SUBSTRATE STRUCTURE FOR AN IMAGE	)	
SENSOR PACKAGE AND METHOD FOR	)	
MANUFACTURING THE SAME	)	
	)	
Attorney Docket No.	)	
Commissioner of Patents		
P.O. Box 1450		
Alexandria, VA 22313-1450		

**REVOCATION OF ALL PRIOR POWERS AND
NEW POWER OF ATTORNEY BY ASSIGNEE**

Sir:

As a duly authorized representative of Kingpak Technology Inc., the assignee that owns all right, title and interest in and to the above-captioned patent application, I, Meg Lai, hereby revoke all powers of attorney previously given, and hereby appoint the following attorneys and/or agents to prosecute and transact all business in the U.S. Patent and Trademark Office relating to this patent application:

The Practitioners listed under Customer No. 38327

Please send all correspondence and direct all telephone calls to:

Juan Carlos A. Marquez
STITES & HARBISON, PLLC
 1199 N. Fairfax Street, Suite 900
 Alexandria, Virginia 22314
 (703) 739-4900
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Executed this 8th day of May, 2012, at Hsinchu, Taiwan

Signature: Meg Lai
 Name: Meg Lai
 Title: Legal Manager

KTI_GEN_00000221

Electronic Acknowledgement Receipt	
EFS ID:	12751861
Application Number:	11131727
International Application Number:	
Confirmation Number:	5555
Title of Invention:	Substrate structure for an image sensor package and method for manufacturing the same
First Named Inventor/Applicant Name:	Chung Hsien Hsin
Customer Number:	47625
Filer:	Juan Carlos A. Marquez/Janice Rosier
Filer Authorized By:	Juan Carlos A. Marquez
Attorney Docket Number:	2011180
Receipt Date:	10-MAY-2012
Filing Date:	18-MAY-2005
Time Stamp:	17:14:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	CHIP-0220_Revocation_of_Prior_Powers_and_New_Power_of_Atty.pdf	157543 61e6f30dc9decbb7faea186a81ae90206f75a97f	no	3

Warnings:

Information:

KTI_GEN_00000222

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

KTI_GEN_00000223



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/131,727	05/18/2005	Chung Hsien Hsin	CHIP-0220

CONFIRMATION NO. 5555

POA ACCEPTANCE LETTER



OC000000054338500

Juan Carlos A. Marquez
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1199 N. Fairfax Street
Alexandria, VA 22314

Date Mailed: 05/18/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/10/2012.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/tkim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/131,727	05/18/2005	Chung Hsien Hsin	2011180

47625
PRO-TECTOR INTERNATIONAL SERVICES
20775 NORADA CT.
SARATOGA, CA 95070

CONFIRMATION NO. 5555
POWER OF ATTORNEY NOTICE



OC000000054338314

Date Mailed: 05/18/2012

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/10/2012.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/tkim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



IN THE CLAIMS:

Claims 1-6 are currently pending in this application, as follows:

1. (Previously Presented) A substrate structure for an image sensor package, the substrate structure comprising:
 - a bottom base having an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between first electrodes and in direct surface contact with the upper surface of the bottom base;
 - a frame layer arranged on and in direct surface contact with the first electrodes and the insulation layer to form a cavity together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer.
2. (Previously Presented) The substrate structure according to claim 1, wherein the first electrodes are electrically connected to the second electrodes, respectively.
3. (Previously Presented) The substrate structure according to claim 1, wherein the insulation layer is composed of green paint.
4. (Previously Presented) A method for manufacturing substrate structures of image sensor packages, the method comprising:
 - providing a bottom base having an upper surface formed with a plurality of first electrodes;
 - coating an insulation layer between the first electrodes and in direct surface contact with the upper surface of the bottom base;
 - arranging a frame layer on and in direct surface contact with the first electrodes and the insulation layer to form a plurality of cavities together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer;
 - fixing a glue film onto a lower surface of the bottom base; and
 - cutting from the frame layer to the glue film to form the substrate structures.

5. (Previously Presented) The method according to claim 4, wherein the first electrodes are electrically connected to second electrodes formed on the lower surface of the bottom base, respectively.
6. (Previously Presented) The method according to claim 4, wherein the insulation layer is composed of green paint.

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated February 15, 2012 (USPTO Paper No. 20120209). In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1-6 are pending in this application. All amendments to the specification and to the claims are fully supported throughout the disclosure of the invention. Applicants submit that no new matter is being introduced into this application through the submission of this response.

Prior Art Rejections

Claims 1-3 were rejected under 35 USC §102(e) as being anticipated by Chen et al. (US Publication No. 2006/0008939, hereafter "Chen"). Claims 1-6 were rejected under 35 USC §103(a) as being unpatentable over Tao et al. (US Publication No. 2003/0214029, hereafter "Tao") in view of Lin et al. (US Publication No. 2002/0058208, hereafter "Lin"). Applicants have reviewed the above-noted rejections and hereby respectfully traverse for the reasons set forth hereinbelow.

Rejection under 35 USC §102(e):

Claims 1-3 were rejected under 35 USC §102(e) on grounds of common assignee or inventor. A rejection based on 35 U.S.C. §102(e) can be overcome by: (A) Persuasively arguing that the claims are patentably distinguishable from the prior art; (B) Amending the claims to patentably distinguish over the prior art; (C) Filing an affidavit or declaration under 37 CFR 1.132 showing that the reference invention is not by "another." See MPEP § 715.01(a), § 715.01(c), and § 716.10; (D) Filing an affidavit or declaration under 37 CFR 1.131 showing prior invention, if the reference is not a U.S. patent or a U.S. patent application publication claiming the same patentable invention as defined in 37 CFR 41.203(a). See MPEP §715 for more information on 37 CFR 1.131 affidavits.

Applicants have submitted an affidavit or declaration under 37 CFR §1.132 as requested by the Examiner, attesting to the fact that any invention disclosed but not claimed in the reference was indeed derived from the inventor of this application and is thus not the invention “by another.” Such declaration is attached for the continued consideration of this application.

Rejection under 35 USC §103(a):

With respect to the rejections based on the reference of Tao in view of Lin, a proper obviousness rejection requires establishing that the prior art references, when combined, teach or suggest all of the claim limitations. MPEP §2143. Furthermore, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). Rather, a “convincing line of reasoning supporting rejection” must be presented. MPEP §2144. The rationale to support a conclusion that a claim would have been obvious is that “a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success.” *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006).

As currently recited in claim 1, the present invention is directed to a substrate structure for an image sensor package, the substrate structure comprising: a bottom base having an upper surface formed with a plurality of first electrodes, and a lower surface formed with a plurality of second electrodes, wherein an insulation layer is coated between first electrodes and in direct surface contact with the upper surface of the bottom base; a frame layer arranged on and in direct surface contact with the first electrodes and the insulation layer to form a cavity together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer.

Claim 4 is directed towards a method for manufacturing substrate structures of image sensor packages, the method comprising: providing a bottom base having an upper surface formed with a plurality of first electrodes; coating an insulation layer between the first electrodes and in direct surface contact with the upper surface of the bottom base; arranging a frame layer on and in direct surface contact with the first electrodes and the insulation layer to form a plurality of cavities together with the bottom base, wherein the insulation layer is interposed

between the bottom base and the frame layer; fixing a glue film onto a lower surface of the bottom base; and cutting from the frame layer to the glue film to form the substrate structures.

In the Office Action, Tao was cited for teaching a substrate structure for an image sensor package with the substrate structure comprising a bottom base having an upper surface formed with a plurality of first electrodes and a lower surface wherein an insulation layer is coated between the first electrodes and in direct surface contact with the upper surface of the bottom base; a frame layer arranged on and in direct surface contact with the first electrodes and the insulation layer.

The Examiner relied on Tao's passivation layer to provide the teaching behind Applicant's insulation layer. However, Tao does not disclose, teach or suggest any structure or operation for, among other features, coating an insulation layer between the first electrodes and **in direct surface contact** with the upper surface of the bottom base; or arranging a frame layer on **and in direct surface contact with the first electrodes and the insulation layer** to form a plurality of cavities together with the bottom base, wherein the **insulation layer is interposed between the bottom base and the frame layer**.

Rather, the reference of Tao in actuality discloses, *"FIG. 4 is a cross-sectional view of a multichip package 400 according to a first embodiment of the present invention. The package 400 comprises a base chip 111, a gold bump ring 150, a plurality of flip-chip bonding 152, and a cover chip 211. The base chip 111 has a semiconductor micro device 130 electrically connected to a plurality of external bonding pads 122 and internal bonding pads 124; a bonding pad ring 120; and a passivation layer 110 covering the respective top edge portions of the bonding pad ring 120, the external bonding pads 122, and the internal bonding pads 124 wherein the respective center portions of the bonding pad ring 120, the external bonding pads 122, and the internal bonding pads 124 are exposed from the passivation layer 110. An under bump metallurgy (UBM) 140 is disposed on the bonding pad ring 120 at a portion exposed from the passivation layer 110 wherein the UBM 140 comprises an adhesion layer, a barrier layer, and a wetting layer."* (See paragraph [0026]).

In particular, in the structure of Tao, the gold bump ring 150 is formed on top of an under bump metallurgy 140, which is then disposed on the bonding pad ring 120 that in turn is connected to passivation layer 110 at the top edge portions of the bonding pad ring 120. Therefore, Tao discloses a structure where the frame layer (gold bump ring 150) is connected to

the insulation layer (passivation layer 110) *via* the first electrodes (under bump metallurgy 140) and the bonding pad ring 120, instead of being arranged on and in direct surface contact with the insulation layer (passivation layer 110). Indeed, the gold bump ring 150 disclosed in Tao is noted to be “formed on the bonding pad ring 120 and adjacent to the UBM 140 for connecting the base chip 111,” and not directly on top of the passivation layer. (Tao, Paragraph [0027]). Thus, Tao’s structure differs from Applicants in that the frame layer is arranged on and in direct surface contact with the insulation layer *through* the first electrodes.

Furthermore, Tao provides for a “passivation layer that covers the respective top edge portions of the bonding pad ring 120, the external bonding pads 122, and the internal bonding pads 124 wherein the respective center portions of the bonding pad ring 120, the external bonding pads 122, and the internal bonding pads 124 are exposed from the passivation layer 110.” Therefore, the insulation layer disclosed in Tao is not interposed between the bottom base and the frame layer, but instead, the insulation layer lies adjacent to the frame layer, connected by means of the first electrodes, bonding pad ring, and external and internal bonding pads.

With the claimed invention, the structure and operation dispenses with the multitude of steps required by the manufacture of the device in Tao. Thus, the claimed invention eliminates the need for bonding pad rings and internal and external bonding pads and achieves features and advantages not contemplated in Tao.

Secondary References:

With respect to dependent claims 2-3, 5-6, since the prior art raised by the Examiner cannot anticipate the features recited in claims 1 and 4, it also cannot anticipate all the features recited in any of the dependent claims. As noted by the court in *Panduit Corp. v. Dennison Manufacturing Co.*, U.S.P.Q. 2d 1593, 1597 (Fed. Cir. 1987), it is settled law that: [A] prior patent must be considered in its entirety, i.e., as a whole, including portions that would lead away from the invention in suit, *W.L.Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550, 220 U.S.P.Q. 303, 311 (F. C. 1983), cert. denied, 469 U.S. 851 (1984).

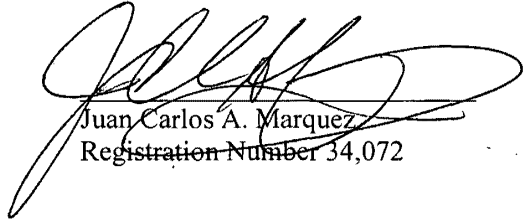
Applicants respectfully point out that the secondary reference of Lin was only cited for showing elements in the dependent claims and does not provide any teaching or suggestion that could make up for the deficiencies in Tao such that the combination of the two could now render

each and every feature of the claimed invention obvious to those of skill in the art. Thus, the present invention as claimed is distinguishable and thereby allowable over the prior art of record.

Conclusion

In view of all the above, Applicants respectfully submit that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art as a whole. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art. Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,



Juan Carlos A. Marquez
Registration Number 34,072

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Customer No. 38327

June 14, 2012

250590:1:ALEXANDRIA



AFFIDAVIT OF COMMON INVENTORSHIP

City of HsinChu)

Country of Taiwan, R.O.C.)

I HSIN, Chung Hsien being duly sworn, depose and say that I am an inventor of the invention disclosed but not claimed in U.S. Publication No. 2006/0008939. I am also an inventor of the invention disclosed within U.S. Patent Application 11/131,727.

I certify that the information presented in this affidavit and true and correct to the best of my knowledge.

Signed and sworn to before me on this 16 day of May, 2012 by

Chung Hsien Hsin

Lai, Mei-Ling
Witness

17 May, 2012
Date

KTI_GEN_00000234

PR

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re U.S. Patent Application of

HSIN et al.

Application Number: 11/131,727

Filed: May 18, 2005

For: SUBSTRATE STRUCTURE FOR AN
IMAGE SENSOR PACKAGE AND METHOD FOR
MANUFACTURING THE SAME

Attorney Docket No. CHIP.0220

Art Unit 2829

Examiner
Thanh Y. Tran

Mail Stop Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COVER LETTER

Sir:

[x] The fee for submission of claims is calculated as shown below:

FOR	TOTAL WITH NEW CLAIMS ADDED	TOTAL CURRENTLY ON FILE	CLAIMS ALREADY PAID	RATE	CALCULATION
Total Claims	6	6	(Over 20)	x \$60	0.00
Independent Claims	2	2	(Over 3)	x \$250	0
MULTIPLE DEPENDENT CLAIM(S)				+ \$450	0
REDUCTION FOR FILING BY SMALL ENTITY (note 37 C.F.R. §§ 1.9, 1.27, 1.28).				x ½	
				TOTAL	\$0.0

In addition, the below-identified communications are submitted in the above-captioned application or proceeding:

- [x] Response and Amendment to Office Action
(with no claim amendments)
- [] Substitute Abstract
- [] Terminal Disclaimer

- [] Information Disclosure Statement
- [] ___ sheets of replacement drawings
- [] RCE
- [x] Affidavit of Common Inventorship

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KTI_GEN_0000235

☒ Applicant(s) hereby request and petition that the time for taking action in this case be extended pursuant to 37 C.F.R. § 1.136(a) for:

☒ **one (1) month** ☐ **two (2) months** ☐ **three (3) months**

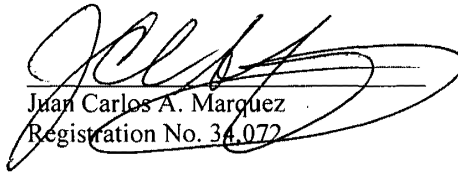
The fee set in 37 C.F.R. § 1.17 for the extension of time is **\$150.00** for a large entity.

☒ Credit card information for **\$150.00** to cover the 1-month extension fee associated with this filing is enclosed.

☐ Please charge my **Deposit Account Number** _____ in the amount of _____ to cover the fees for _____.

☒ The Commissioner is hereby authorized to charge any additional fees associated with this communication, including fees under 37 C.F.R. § 1.16 and 1.17, or credit any overpayment to **Deposit Account Number 12-0555**.

Respectfully submitted,


Juan Carlos A. Marquez
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Customer No. 38327
June 14, 2012

250591:1:ALEXANDRIA

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/131,727		Filing Date 05/18/2005		☒ To be Mailed	
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APPLICATION AS FILED – PART I						OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY ☒		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A		N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A		N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A		N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$	=	OR	X \$	=		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=	OR	X \$	=		
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL				

APPLICATION AS AMENDED – PART II						OTHER THAN SMALL ENTITY					
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	DATE	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	06/14/2012	Total (37 CFR 1.16(i))	* 6	Minus	** 20	=	0	OR	X \$	=	
		Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	=	0	OR	X \$	=	
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR			
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE		

(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	DATE	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
		Total (37 CFR 1.16(i))	*	Minus	**	=		OR	X \$	=	
		Independent (37 CFR 1.16(h))	*	Minus	***	=		OR	X \$	=	
☐ Application Size Fee (37 CFR 1.16(s))											
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR			
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/131,727		Filing Date 05/18/2005		☐ To be Mailed	
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APPLICATION AS FILED – PART I						OTHER THAN SMALL ENTITY			
(Column 1)		(Column 2)		SMALL ENTITY ☒		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A		N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A		N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A		N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$	=	OR	X \$	=		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=	OR	X \$	=		
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL				

APPLICATION AS AMENDED – PART II						OTHER THAN SMALL ENTITY					
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	DATE	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	06/14/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 6	Minus	** 20	= 0	X \$30 =	0	OR	X \$ =		
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X \$125 =	0	OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))								OR			
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR			
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE		

(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	DATE	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$	=	OR	X \$		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$	=	OR	X \$		
☐ Application Size Fee (37 CFR 1.16(s))								OR			
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR			
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
 If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

KTI_GEN_00000238



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 09/17/2012
Juan Carlos A. Marquez
STITES & HARBISON, PLLC
Suite 900
1199 N. Fairfax Street
Alexandria, VA 22314

EXAMINER

TRAN, THANH Y

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 09/17/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	CHIP-0220	5555

TITLE OF INVENTION: SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR PACKAGE AND METHOD FOR MANUFACTURING THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	12/17/2012

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 09/17/2012
Juan Carlos A. Marquez
STITES & HARBISON, PLLC
Suite 900
1199 N. Fairfax Street
Alexandria, VA 22314

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	CHIP-0220	5555

TITLE OF INVENTION: SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR PACKAGE AND METHOD FOR MANUFACTURING THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	12/17/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
TRAN, THANH Y	2829	257-678000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	05/18/2005	Chung Hsien Hsin	CHIP-0220	5555

7590	09/17/2012
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Juan Carlos A. Marquez
STITES & HARBISON, PLLC
Suite 900
1199 N. Fairfax Street
Alexandria, VA 22314

EXAMINER
TRAN, THANH Y

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 09/17/2012

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1542 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1542 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

KTI_GEN_00000242

Notice of Allowability	Application No.	Applicant(s)	
	11/131,727	HSIN ET AL.	
	Examiner	Art Unit	
	THANH Y. TRAN	2829	

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

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/14/2012.

2. ☐ 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.

3. ☒ The allowed claim(s) is/are 1-6.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
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)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	5. ☐ Notice of Informal Patent Application 6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ 7. ☐ Examiner's Amendment/Comment 8. ☒ Examiner's Statement of Reasons for Allowance 9. ☐ Other _____.
--	--

/Long K. Tran/ Primary Examiner, Art Unit 2829	/T. Y. T./ Examiner, Art Unit 2829
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DETAILED ACTION

Allowable Subject Matter

1. Claims 1-6 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding:

A substrate structure for an image sensor package comprising: a bottom base having an upper surface formed with a plurality of first electrodes, wherein an insulation layer is coated between first electrodes and in direct surface contact with the upper surface of the bottom base; a frame layer arranged on and in direct surface contact with the first electrodes and the insulation layer to form a cavity together with the bottom base, wherein the insulation layer is interposed between the bottom base and the frame layer; and in combination with other claimed features, as recited in independent claim 1. Claims 2-3 are dependent upon independent claim 1.

A method for manufacturing substrate structures of image sensor packages, comprising: providing a bottom base having an upper surface formed with a plurality of first electrodes; coating an insulation layer between the first electrodes and in direct surface contact with the upper surface of the bottom base; arranging a frame layer on and in direct surface contact with the first electrodes and the insulation layer to form a plurality of cavities together with the bottom base, wherein the insulation layer is interposed between the bottom base and the flame layer; and in combination with other claimed features, as recited in independent claim 4. Claims 5-6 are dependent upon independent claim 4.

KTI_GEN_0000244

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THANH Y. TRAN whose telephone number is (571)272-2110. The examiner can normally be reached on M-F (11:00am-8:00pm EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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.

/T. Y. T./
Examiner, Art Unit 2829

KTI_GEN_00000245

Application/Control Number: 11/131,727

Page 4

Art Unit: 2829

/Long K. Tran/

Primary Examiner, Art Unit 2829

KTI_GEN_00000246

Search Notes 	Application/Control No. 11131727	Applicant(s)/Patent Under Reexamination HSIN ET AL.
	Examiner THANH Y TRAN	Art Unit 2829

SEARCHED			
Class	Subclass	Date	Examiner
257	678, 684, 685, 686, 690, 704, 711, 713, 731, 732, 733, 734, 737, 738, 778, 779, 780, 781, 782, 783, 784	9/7/2012	TYT
438	64, 26, 106, 108, 111, 118, 121, 125	9/7/2012	TYT

SEARCH NOTES		
Search Notes	Date	Examiner
Updated East search (see search history printout)	9/7/2012	TYT
Inventor's name search (see search history printout)	9/7/2012	TYT

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
257	684	9/7/2012	TYT

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<i>Index of Claims</i> 	Application/Control No. 11131727	Applicant(s)/Patent Under Reexamination HSIN ET AL.
	Examiner THANH Y TRAN	Art Unit 2829

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	09/07/2012								
	1	=								
	2	=								
	3	=								
	4	=								
	5	=								
	6	=								

Issue Classification 	Application/Control No. 11131727	Applicant(s)/Patent Under Reexamination HSIN ET AL.
	Examiner THANH Y TRAN	Art Unit 2829

ORIGINAL						INTERNATIONAL CLASSIFICATION												
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED							
257		684				H	0	1	L	23 / 06 (2006.01.01)								
CROSS REFERENCE(S)																		
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																	
257	685	723																
438	26	64	111	118														

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1														
	2														
	3														
	4														
	5														
	6														

/THANH Y TRAN/ Examiner.Art Unit 2829 (Assistant Examiner)	9/7/2012 (Date)	Total Claims Allowed: 6	
/LONG TRAN/ Primary Examiner.Art Unit 2829 (Primary Examiner)	09/10/2012 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3 & 4

KTI_GEN_00000249

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3299	(257/723).CCLS.	US-PGPUB; USPAT	OR	OFF	2012/09/07 19:17
L2	3313	((frame or ring or stiffen\$4 or leadframe) with (((insulating or dielectric) adj (layer or film)) or adhesive or glue)) and (frame or ring) and package and sensor)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 19:17
L3	24	1 and 2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 19:17
L4	19	@ad <= "20050518" and 3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 19:18
S1	424939	(base support substrate carrier) with (electrodes traces conductors patterns pads)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:06
S2	55308	(electrodes traces conductors patterns pads) near5 coat\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:04
S3	418	S2 with smooth\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:04
S4	21681	S1 and S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:04
S5	142	S1 and S3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:04

S6	997536	(base support substrate carrier) with (frame ring stiffen\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:12
S7	12	S5 and S6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:05
S8	94913	(base support substrate carrier) with (electrodes traces conductors patterns pads) with (insulat\$4 dielectric)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:07
S9	12739	(electrodes traces conductors patterns pads) with (insulat\$4 dielectric) with (smooth\$4 flat\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:09
S10	4360	S8 and S9	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:09
S11	1103198	(base support substrate carrier paddle pad lead) with (frame ring stiffen\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:11
S12	652	S10 and S11	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:11
S13	479	@ad <= "20050518" and S12	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:12
S14	457104	(frame ring stiffen\$4 leadframe) with (cut\$4 singulat\$4 separat\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 18:13
S15	90	S13 and S14	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 19:25

S16	2	"20020023765"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/06/25 19:25
S17	716256	(frame or ring or stiffen\$4 or leadframe) with (electrode or pad or metal or conductor or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:11
S18	120106	(frame or ring or stiffen\$4 or leadframe) with (((insulating or dielectric) adj (layer or film)) or adhesive)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:14
S19	42461	S17 and S18	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:15
S20	1079187	(frame or ring or stiffen\$4 or leadframe) with (base or substrate or board or panel)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:15
S21	21581	S19 and S20	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:15
S22	6961	S21 and package	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:16
S23	131007	(frame or ring or stiffen\$4 or leadframe) with (((insulating or dielectric) adj (layer or film)) or adhesive or glue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:17
S24	45042	S17 and S23	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:17
S25	22585	S24 and S20	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:17

S26	7201	S25 and package	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 01:17
S27	4112	@ad <= "20050518" and S26	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 01:18
S28	14639	((438/64) or (438/26) or (438/106) or (438/108) or (438/111) or (438/118) or (438/121) or (438/125)).OCLS.	US-PGPUB; USPAT	OR	OFF	2012/09/07 01:30
S29	502	S27 and S28	US-PGPUB; USPAT	OR	ON	2012/09/07 01:30
S30	28678	((257/678) or (257/684-686) or (257/690) or (257/704) or (257/711) or (257/713) or (257/731-734) or (257/737-738) or (257/778-784)).OCLS.	US-PGPUB; USPAT	OR	OFF	2012/09/07 14:08
S31	131007	(frame or ring or stiffen\$4 or leadframe) with (((insulating or dielectric) adj (layer or film)) or adhesive or glue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:08
S32	2859	S30 and S31	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:09
S33	1079187	(frame or ring or stiffen\$4 or leadframe) with (base or substrate or board or panel)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:09
S34	1868	S32 and S33	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:09
S35	1193	@ad <= "20050518" and S34	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 14:10
S36	1051	S35 and package	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:10
S37	1051	S30 and S36	US-PGPUB;	OR	OFF	2012/09/07

			USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB			14:10
S38	716256	(frame or ring or stiffen\$4 or leadframe) with (electrode or pad or metal or conductor or (conductive adj layer))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:11
S39	1079187	(frame or ring or stiffen\$4 or leadframe) with (base or substrate or board or panel)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:11
S40	131007	(frame or ring or stiffen\$4 or leadframe) with (((insulating or dielectric) adj (layer or film)) or adhesive or glue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:11
S41	45042	S38 and S40	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:11
S42	22585	S41 and S39	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:11
S43	7201	S42 and package	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 14:11
S44	4112	@ad <= "20050518" and S43	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 14:11
S45	14639	((438/64) or (438/26) or (438/106) or (438/108) or (438/111) or (438/118) or (438/121) or (438/125)).OCLS.	US-PGPUB; USPAT	OR	OFF	2012/09/07 14:11
S46	502	S44 and S45	US-PGPUB; USPAT	OR	ON	2012/09/07 14:11
S47	956	S37 not S46	US-PGPUB; USPAT	OR	ON	2012/09/07 14:12
S49	86	((frame or ring or stiffen\$4 or leadframe) with (((insulating or dielectric) adj (layer or film)) or adhesive or glue)) and (frame or ring) and package and	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT;	OR	ON	2012/09/07 17:13

		sensor).clm.	IBM_TDB			
S50	36	@ad <= "20050518" and S49	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 17:13
S51	510	(chung near hsien).in.	US-PGPUB; USPAT	OR	ON	2012/09/07 17:46
S52	233	@ad <= "20050518" and S51	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 17:46
S53	12	S31 and S52	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 17:47
S54	6	(yves near huang).in.	US-PGPUB; USPAT	OR	ON	2012/09/07 17:50
S55	6	@ad <= "20050518" and S54	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 17:50
S56	57	(kevin near chang).in.	US-PGPUB; USPAT	OR	ON	2012/09/07 17:53
S57	28	@ad <= "20050518" and S56	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 17:53
S58	2	S31 and S57	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/07 17:54
S59	10	(chief near lin).in.	US-PGPUB; USPAT	OR	ON	2012/09/07 17:55
S60	10	@ad <= "20050518" and S59	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 17:55
S61	1	S31 and S60	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/09/07 17:55

9/ 7/ 2012 7:18:58 PM

C:\Users\ttran13\Documents\EAST\Workspaces\11131727.wsp

PART B - ISSUE FEE (S) TRANSMITTAL

Complete and mail this form, together with applicable fees, to:

Box ISSUE FEE
Assistant Commissioner for Patents
Washington, D.C. 20231

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address, and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.
CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

STITES & HARBISON, PLLC
SUITE 900
1199 N. FAIRFAX STREET
ALEXANDRIA, VA 22314

Note: The certificate of mailing below can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate.

Certificate of Mailing

I hereby certify that this Issue Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelop addressed to the Box Issue Fee address on the date indicated below.



APPLICATION NO		FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727		05/18/2005	Chung Hsien Hsin	CHIP-0220	5555

TITLE OF INVENTION: SUBSTRATE STRUCTURE FOR AN IMAGE SENSOR PACKAGE AND METHOD OF MANUFACTURING THE SAME

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1770	\$300	\$2070	12/17/2012

EXAMINER	ART UNIT	CLASS - SUBCLASS
TRAN, Thanh Y.	2829	257-678000

1. Change of correspondence address or indication of ☐ Fee Address* (37 CFR §1.363). Use of PTO form(s) and Customer Number are recommended, but not required.
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ *Fee Address* indication (or "Fee Address" Indication form PTO/SB/47) attached.
2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (have as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1. Stites & Harbison, PLLC
2. Juan Carlos A. Marquez, Esq

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Kingpak Technology Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Hsinchu Hsien, Taiwan

Please check the appropriate assignee category indicated below (will not be printed on the patent) ☐ individual ☒ Corporation or private group entity ☐ government

4a. The following fees are enclosed:

- ☒ Issue fee
- ☒ Publication Fee
- ☐ Advance Order - # of Copies:

4b. Payment of Fee(s):

- ☒ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 12-0555.

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee and Publication Fee (if any) to the application identified above.

(Authorized Signature)

(Date) October 5, 2012

Juan C.A. Marquez Reg. No. 34,972

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered patent attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

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Page 1 of 1

PTOL-85 (Rev. 07-01) Approved for use through 01/31/2004. OMB 0651-0033

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

263717:1:ALEXANDRIA

10/09/2012 HVUONG2 00000005 11131727

01 FC:1501
02 FC:15041770.00 OP
300.00 OP

US_ACTIVE-100195432.1 10/5/12 11:07 AM

KTI_GEN_00000257



MAINTENANCE FEE		
Applicant:	Kingpak Technology Inc.	
Patent Number:	Issued:	
Application Number:	11/131,727	Filing Date: May 18, 2005
Title:	SUBSTRATE STRUCTURE FOR IMAGE SENSOR PACKAGE AND METHOD OF MANUFACTURING THE SAME	

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Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile No.: 571-273-6500

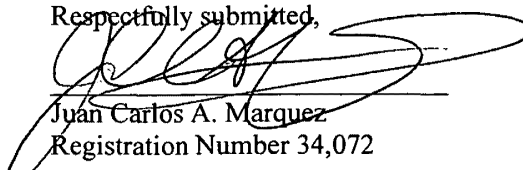
**ASSERTION BY ATTORNEY OF RECORD REGARDING
CHANGE FROM SMALL ENTITY STATUS**

Dear Sirs:

As Attorney of Record, I hereby assert that small entity status with respect to the Applicant in the above-referenced US Patent Application No. 11/131,727 is no longer appropriate as defined under 37 C.F.R. §1.27 as of the due date for paying the issue fee. Applicant is therefore submitting this assertion in support of such change in status, and in conjunction with the payment according to a large entity status. It is believed that no penalty or surcharge is due in connection with notifying of such change in small entity status and the accompanying payment.

In the event that any such fees or surcharges are due, the Commissioner is hereby authorized to charge payment of any fees associated with this communication, or credit any overpayment to **Deposit Account Number 12-0555**, in connection with this Assertion or the accompanying payment.

Respectfully submitted,


Juan Carlos A. Marquez

Registration Number 34,072

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October 5, 2012

263770:1:ALEXANDRIA

KTI_GEN_00000258



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/131,727	11/20/2012	8314481	CHIP-0220	5555

7590 10/31/2012
Juan Carlos A. Marquez
STITES & HARBISON, PLLC
Suite 900
1199 N. Fairfax Street
Alexandria, VA 22314

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 1542 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Chung Hsien Hsin, Hsinchu Hsien, TAIWAN;
Yves Huang, Hsinchu Hsien, TAIWAN;
Kevin Chang, Hsinchu Hsien, TAIWAN;
Chief Lin, Hsinchu Hsien, TAIWAN;

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
11/131,727	8314481	2829	9200



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The following fields have been set to Customer Number 123720 on 04/23/2014

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
11/131,727	8314481	2829	9200



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The following fields have been set to Customer Number 38327 on 07/21/2014

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Bacon & Thomas PLLC

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PART 1 - ATTORNEY/APPLICANT COPY

page 1 of 1

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