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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/953,291	05/22/2007	7221173	BACHMAN 3-11-16-173	2052

47386 7590 05/02/2007
RYAN, MASON & LEWIS, LLP
1300 POST ROAD
SUITE 205
FAIRFIELD, CT 06824

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 0 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 Customer Service Center of the Office of Patent Publication at (571)-272-4200.

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

Mark Adam Bachman, Sinking Spring, PA;
Daniel Patrick Chesire, Winter Garden, FL;
Taeho Kook, Orlando, FL;
Sailesh M. Merchant, Macungie, PA;

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)

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.

47386 7590 01/24/2007

RYAN, MASON & LEWIS, LLP
 1300 POST ROAD
 SUITE 205
 FAIRFIELD, CT 06824

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.

Karen Vertz	(Depositor's name)
<i>Karen Vertz</i>	(Signature)
April 17, 2007	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/953,291 09/29/2004 Mark Adam Bachman BACHMAN 3-11-16-173 2052

TITLE OF INVENTION: METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1400 \$300 \$0 \$1700 04/24/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
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NGUYEN, TUNG X 2829 324-754000

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,
- (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.

1 _____
 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)

Agere Systems, Inc.

Allentown, Pennsylvania

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 08-2395 (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

Charles W. Gaines

Date April 17, 2007

Typed or printed name

Charles W. Gaines

Registration No. 36,804

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.

Electronic Patent Application Fee Transmittal

Application Number:	10953291			
Filing Date:	29-Sep-2004			
Title of Invention:	METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS			
First Named Inventor/Applicant Name:	Mark Adam Bachman			
Filer:	Charles W. Gaines/Karen Vertz			
Attorney Docket Number:	BACHMAN 3-11-16-173			
Filed as Large Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	1501	1	1400	1400
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1700

Electronic Acknowledgement Receipt

EFS ID:	1688425
Application Number:	10953291
International Application Number:	
Confirmation Number:	2052
Title of Invention:	METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS
First Named Inventor/Applicant Name:	Mark Adam Bachman
Customer Number:	47386
Filer:	Charles W. Gaines/Karen Vertz
Filer Authorized By:	Charles W. Gaines
Attorney Docket Number:	BACHMAN 3-11-16-173
Receipt Date:	17-APR-2007
Filing Date:	29-SEP-2004
Time Stamp:	10:59:22
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	\$ 1700
RAM confirmation Number	1642
Deposit Account	082395
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 and 1.17	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue_Publication_Fees.pdf	154612	no	1

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	8357	no	2
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Warnings:

Information:

Total Files Size (in bytes):			162969		
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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.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

47386 7590 01/24/2007

RYAN, MASON & LEWIS, LLP
1300 POST ROAD
SUITE 205
FAIRFIELD, CT 06824

EXAMINER

NGUYEN, TUNG X

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 01/24/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/953,291	09/29/2004	Mark Adam Bachman	BACHMAN 3-11-16-173	2052

TITLE OF INVENTION: METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	04/24/2007

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 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)

47386 7590 01/24/2007
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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.
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10/953,291 09/29/2004 Mark Adam Bachman BACHMAN 3-11-16-173 2052

TITLE OF INVENTION: METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1400 \$300 \$0 \$1700 04/24/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
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NGUYEN, TUNG X 2829 324-754000

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,
- (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.

1 _____
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.

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Microchip et al. Ex. 1002-8



UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/953,291	09/29/2004	Mark Adam Bachman	BACHMAN 3-11-16-173	2052

47386 7590 01/24/2007

RYAN, MASON & LEWIS, LLP
1300 POST ROAD
SUITE 205
FAIRFIELD, CT 06824

EXAMINER

NGUYEN, TUNG X

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 01/24/2007

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 0 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 0 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.

Notice of Allowability

Application No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)

BACHMAN ET AL.

Art Unit

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 the amendment filed on 11/9/06.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☐ 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.

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

REASONS FOR ALLOWANCE

1. Claims 1-10 are allowed.

Applicant's arguments have been fully considered and deemed persuasive, see "Remark" on papers 5-6, filed 11/09/06, with respect to claim(s) 1-10. The claims are allowed by the following reasons:

As to claims 1, 9, the prior art of record does not teach an interface assembly for a semiconductor wafer particularly defined by characteristic of the test pad integrally constructed with the bonding pad that form an integral conductive structure such that separate interconnect testing lines from the test pad to the bonding pad are not present in the integral structure. The absented interconnect lines from the test pad to bonding pad of the claimed system gives the benefit of reduced or avoided propagation delays in test signal passing therethrough [see paragraph 14 on page 4 in specification].

As to claim 10, the prior art of record does not teach an interface assembly for a semiconductor wafer particularly defined by characteristic of the first metal redistribution layer connecting to the bonding and test pad, and being co-planar with one another, the first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

These features in combination with the other elements of the claim are neither disclosed nor suggested by the prior art of record.

The other claims depend from the claim 1. They are allowed for the same reasons.

Art Unit: 2829

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."

Conclusion


2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Nguyen whose telephone number is (571) 272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha T. 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.

TN
1/19/07


HA TRAN NGUYEN
SUPERVISORY PATENT EXAMINER

Issue Classification 	Application/Control No. 10/953,291	Applicant(s)/Patent under Reexamination BACHMAN ET AL.
	Examiner Tung X. Nguyen	Art Unit 2829

ISSUE CLASSIFICATION													
ORIGINAL					INTERNATIONAL CLASSIFICATION								
CLASS		SUBCLASS			CLAIMED					NON-CLAIMED			
324		754			G	01	R	31	/02				/
CROSS REFERENCES								/				/	
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)							/				/	
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Tung X. Nguyen 1/19/07 (Assistant Examiner) (Date)					HA TRAN NGUYEN SUPERVISORY PATENT EXAMINER					Total Claims Allowed: 10			
<i>Surles</i> 1/23/7 (Legal Instruments Examiner) (Date)					(Primary Examiner) (Date) <i>Hy</i> 1-22-7					O.G. Print Claim(s) 1		O.G. Print Fig. 2	

<input checked="" type="checkbox"/> Claims renumbered in the same order as presented by applicant										<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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	2		32		62		92		122		152		182		212
	3		33		63		93		123		153		183		213
	4		34		64		94		124		154		184		214
	5		35		65		95		125		155		185		215
	6		36		66		96		126		156		186		216
	7		37		67		97		127		157		187		217
	8		38		68		98		128		158		188		218
	9		39		69		99		129		159		189		219
	10		40		70		100		130		160		190		220
	11		41		71		101		131		161		191		221
	12		42		72		102		132		162		192		222
	13		43		73		103		133		163		193		223
	14		44		74		104		134		164		194		224
	15		45		75		105		135		165		195		225
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	17		47		77		107		137		167		197		227
	18		48		78		108		138		168		198		228
	19		49		79		109		139		169		199		229
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	28		58		88		118		148		178		208		238
	29		59		89		119		149		179		209		239
	30		60		90		120		150		180		210		240



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Bib Data Sheet

CONFIRMATION NO. 2052

SERIAL NUMBER 10/953,291	FILING DATE 09/29/2004 RULE	CLASS 324	GROUP ART UNIT 2829	ATTORNEY DOCKET NO. Bachman 3-11-16-173
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APPLICANTS

Mark Adam Bachman, Sinking Spring, PA;
 Daniel Patrick Chesire, Winter Garden, FL;
 Taeho Kook, Orlando, FL; Sailesh M. Merchant, Macungie, PA;

** CONTINUING DATA *None TN*

** FOREIGN APPLICATIONS *None TN*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
 ** 11/15/2004

Foreign Priority claimed 35 USC 119 (a-d) conditions met	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance	STATE OR COUNTRY PA	SHEETS DRAWING 2	TOTAL CLAIMS 9/10	INDEPENDENT CLAIMS 8/8
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Verified and Acknowledged
 Examiner's Signature *[Signature]* Initials *TN*

ADDRESS
 29391
 BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A.
 390 NORTH ORANGE AVENUE
 SUITE 2500
 ORLANDO, FL
 32801

TITLE
 Method and structures for testing a semiconductor wafer prior to performing a flip chip bumping process

FILING FEE RECEIVED	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
		<input type="checkbox"/> 1.16 Fees (Filing)
		<input type="checkbox"/> 1.17 Fees (Processing Ext. of time)

Search Notes

Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under
Reexamination

BACHMAN ET AL.

Art Unit

2829

SEARCHED

Class	Subclass	Date	Examiner
324	754	6/17/2005	TN
	763		
	760		
	765		
	158.1		
	72.5		
	73.1		
438	18	6/17/2005	TN
	132		
	FOR101	1/19/2007	TN
	FOR142		
	8		
257	48,529	1/19/2007	TN

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
EAST search in all of the database with keywords search; inventors search, and updated search	1/19/2007	TN
Interference search (see history printed out)	1/19/2007	TN

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4559	324/754.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:47
L2	62723	bond\$4 adj2 pad	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:47
L3	7059	test\$4 adj2 pad	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:48
L4	745	2 with 3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:48
L5	78031	(avoid\$4 or reduc\$4) near5 delay	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:49
L6	8	4 and 5	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:51
L7	16749	324/754-765,158.1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:51
L8	16749	L7	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:51
L9	217	4 and 8	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:51

EAST Search History

L10	2	5 and 9	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:52
L11	2535	257/48,529.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:52
L12	2535	L11	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:52
L13	57	4 and 12	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:52
L14	1	5 and 13	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:53
L15	1038	438/18,132.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:53
L16	1038	L15	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:53
L17	25	4 and 16	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:56
L18	0	5 and 17	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:53
L19	0	4 with "without trace"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:56

EAST Search History

L20	0	4 with "without traces"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:56
L21	0	4 with "without lines"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:57
L22	0	4 with without with (line or trace or conductive adj l(line or trace))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:05
L24	13	("20020135055" "20030116835" "5346861" "5682061" "6361959" "6372627" "6437591" "6600171" "6670634" "6680213" "6687989" "6708399").PN. OR ("6869809").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/19 20:04
L25	0	4 with without with (line or trace or conductive adj (line or trace))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:05
L26	4	4 same without with (line or trace or conductive adj (line or trace))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:05
L27	39	4 and without with (line or trace or conductive adj (line or trace))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:09
L28	2	(test\$4 near3 wafer and prior near4 (flip adj chip near2 bump\$4)).ti.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:10
L29	2	(test\$4 near3 wafer and prior near4 (flip adj chip near2 bump\$4)).ab.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:10

EAST Search History

L30	1	(test\$4 near3 wafer and prior near4 (flip adj chip near2 bump\$4)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:14
L31	1715	257/e21.521.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:14
L32	3	4 and 31	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:15
L33	7	257/e21.524.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:16
L34	2	4 and 33	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:17
L35	895	438/18,for101,for142,8.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:18
L36	21	4 and 35	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:22
L37	32	(bachman near2 mark).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:23
L38	2	4 and 37	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:23
L39	19	(chesire near2 daniel).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:24

EAST Search History

L40	24	(kook near2 taeho).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:24
L41	248	(merchant near2 sailesh).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:25
L42	2	4 and 41	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:25
L43	1	((first adj3 redistribution and second adj3 redistribution) with different adj2 plane).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 20:32
S1	0	(Yu adj et adj al).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/19 19:46
S2	0	"Us-2004/0173794 A1"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:22
S3	0	"2004/0173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:22
S4	27	"0173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:26
S5	0	S4 and Yu	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:26
S6	3921	324/754.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:27

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Mark Adam Bachman, et al.
Serial No.: 10/953,291
Filed: September 29, 2004
Title: METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR
WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS
Grp./A.U.: 2829
Examiner: Tung X. Nguyen Confirmation No.: 2052

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

I hereby certify that this correspondence is being electronically filed with United States Patent and trademark Office on:	
November 9, 2006	(Date)
Karen Vertz	
(Printed or typed name of person signing the certificate)	
Karen Vertz	
(Signature of the person signing the certificate)	

Sir:

AMENDMENT UNDER 37 C.F.R. § 1.111

In response to the Examiner's Action mailed July 24, 2006, please amend the above-identified application as follows:

IN THE CLAIMS:

1. (Currently Amended) An interface assembly for a semiconductor wafer, said interface assembly comprising:

a flip chip bonding pad including a region for performing a bumping process; and

a test pad integrally constructed with said bonding pad that form an integral conductive structure such that separate interconnect testing lines from said test pad to said bonding pad are not present in said integral structure, said test pad being coplanar relative to said flip chip bonding pad and including a probe region for performing wafer-level testing prior to performing said bumping process.

2. (Original) The interface assembly of claim 1 wherein said test pad may be disposed anywhere along a periphery of said bonding pad.

3. (Original) The interface assembly of claim 1 wherein said bonding pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.

4. (Original) The interface assembly of claim 1 wherein said test pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.

5. (Original) The interface assembly of claim 1 further comprising a first metal redistribution

layer electrically connected to said bonding and test pads, and being co-planar with one another.

6. (Original) The interface assembly of claim 5 wherein said first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

7. (Original) The interface assembly of claim 1 wherein the region to be bumped is defined by a first opening in a passivation layer.

8. (Original) The interface assembly of claim 7 wherein the probe region is defined by a second opening in said passivation layer, said first and second openings being spaced apart from one another.

9. (Currently Amended) A method for testing a semiconductor wafer prior to performing a flip chip bumping process, said method comprising:

providing a flip chip bonding pad having a region for performing said bumping process; integrally constructing a test pad with said bonding pad to form an integral conductive structure such that separate interconnect testing lines from said test pad to said bonding pad are not present in said integral structure; and

disposing said test pad coplanar with said flip chip bonding pad, said test pad including a probe region for performing a wafer test prior to performing said bumping process.

10. (New) An interface assembly for a semiconductor wafer, said interface assembly comprising:
- a flip chip bonding pad including a region for performing a bumping process;
 - a test pad integrally constructed with said bonding pad, said test pad being coplanar relative to said flip chip bonding pad and including a probe region for performing wafer-level testing prior to performing said bumping process; and
 - a first metal redistribution layer electrically connected to said bonding and test pads, and being co-planar with one another, said first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

REMARKS/ARGUMENTS

The Applicants have carefully considered this application in connection with the Examiner's Action and respectfully request reconsideration of this application in view of the foregoing amendment and the following remarks.

The Applicants originally submitted Claims 1-9 in the application. The Applicants have amended Claims 1 and 9 and present new Claim 10, which is Claim 6 drafted in independent form. Accordingly, Claims 1-10 are currently pending in the application.

I. Rejection of Claims 1-5, 7-9 under 35 U.S.C. §102

These claims are rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,869,809 to Yu, et al. (Yu). However, as now amended, Yu does not teach and every element of Claims 1 and 9. For example, Yu does not teach that the test pad and bond pad are integrally formed such that separate interconnect testing lines from the test pad to the bonding pad are not present in the integral structure. In fact, Yu specifically teaches to the contrary. In Column 5, lines 11-30, Yu teaches that the test pads 208a are electrically connected to various flip-chip bonding pads 208 through trace lines 209, as shown in FIG. 3A. Given the presence of these lines in Yu, propagation delays in the test signals would be present, which is contrary to a stated purpose of the invention to reduce or avoid such propagation delays in the test signals.

Therefore, Yu does not disclose each and every element of the claimed invention and as such, is not an anticipating reference for Claim 1 or 9. Because Claims 2-8 are dependent upon

Claim 1, Yu also cannot be an anticipating reference for these claims. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to Claims 1-9.

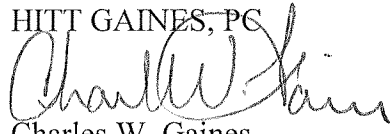
As the Examiner has indicated, Claim 6 is deemed allowable over the cited references if re-written in independent form, including all of the elements of the base claim and any intervening claims. Applicants have presented re-written Claim 6 as New Claim 10. According to the Examiner's indication of allowability, New Claim 10 is not anticipated by Yu.

II. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-10.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

HITT GAINES, PC

Charles W. Gaines
Registration No. 36,804

Dated: 11/9/06
P.O. Box 832570
Richardson, Texas 75083
(972) 480-8800

Electronic Patent Application Fee Transmittal

Application Number:	10953291			
Filing Date:	29-Sep-2004			
Title of Invention:	Method and structures for testing a semiconductor wafer prior to performing a flip chip bumping process			
First Named Inventor/Applicant Name:	Mark Adam Bachman			
Filer:	Charles W. Gaines/Karen Vertz			
Attorney Docket Number:	BACHMAN 3-11-16-173			
Filed as Large Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	1251	1	120	120

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				120

Electronic Acknowledgement Receipt

EFS ID:	1303601
Application Number:	10953291
International Application Number:	
Confirmation Number:	2052
Title of Invention:	Method and structures for testing a semiconductor wafer prior to performing a flip chip bumping process
First Named Inventor/Applicant Name:	Mark Adam Bachman
Customer Number:	47386
Filer:	Charles W. Gaines/Karen Vertz
Filer Authorized By:	Charles W. Gaines
Attorney Docket Number:	BACHMAN 3-11-16-173
Receipt Date:	09-NOV-2006
Filing Date:	29-SEP-2004
Time Stamp:	15:20:27
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	\$ 120
RAM confirmation Number	116
Deposit Account	082395
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 and 1.17	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)		
1		Amendment1_111.pdf	363566	yes	6		
	Multipart Description/PDF files in .zip description						
	Document Description		Start	End			
	Amendment - After Non-Final Rejection		1	1			
	Claims		2	4			
	Applicant Arguments/Remarks Made in an Amendment		5	6			
Warnings:							
Information:							
2	Fee Worksheet (PTO-875)	fee-info.pdf	8208	no	2		
Warnings:							
Information:							
Total Files Size (in bytes):			371774				
<p>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.</p> <p><u>New Applications Under 35 U.S.C. 111</u> 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.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> 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.</p>							

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 10/953,291		Filing Date 09/29/2004		<input type="checkbox"/> To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY <input type="checkbox"/>		OR		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)				
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A					
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A					
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	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 \$	=		X \$	=			
<input type="checkbox"/> 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).									
<input type="checkbox"/> 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										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT	11/09/2006	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0	X \$ =	OR	X \$50=	0	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X \$ =	OR	X \$200=	0	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =	OR	X \$ =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =	OR	X \$ =		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:
Patsy Zimmerman

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.



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UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/953,291	09/29/2004	Mark Adam Bachman	Bachman 3-11-16-173

29391
 BEUSSE WOLTER SANKS MORA & MAIRE, P. A.
 390 NORTH ORANGE AVENUE
 SUITE 2500
 ORLANDO, FL 32801

CONFIRMATION NO. 2052



OC000000019747323

Date Mailed: 07/25/2006

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/17/2006.

- 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).

SYED AREEBUDDIN
 PTOSS (703) 308-9150

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UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/953,291	09/29/2004	Mark Adam Bachman	BACHMAN 3-11-16-173

47386
RYAN, MASON & LEWIS, LLP
1300 POST ROAD
SUITE 205
FAIRFIELD, CT 06824

CONFIRMATION NO. 2052



OC000000019747407

Date Mailed: 07/25/2006

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/17/2006.

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.

SYED AREEBUDDIN
PTOSS (703) 308-9150

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/953,291

09/29/2004

Mark Adam Bachman

Bachman 3-11-16-173

2052

29391

7590

07/24/2006

BEUSSE WOLTER SANKS MORA & MAIRE, P. A.
390 NORTH ORANGE AVENUE
SUITE 2500
ORLANDO, FL 32801

EXAMINER

NGUYEN, TUNG X

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 07/24/2006

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

Office Action Summary	Application No.	Applicant(s)	
	10/953,291	BACHMAN ET AL.	
	Examiner	Art Unit	
	Tung X. Nguyen	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 08 May 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) 1-9 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) 1-5 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 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 29 September 2004 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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/06</u> | 6) <input type="checkbox"/> 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 1-5, 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Yu et al. (u.s.p 6,869,809).

As to claims 1, 9 Yu et al. discloses in Figs. 3-5, a device comprising a flip chip bonding pad (208 of figure 4A) including a region for performing a bumping (col. 5, lines 15-18); and a test pad (208a of figure 4A) integrally constructed with the bonding pad (208), the test pad being co-planar relative to the flip chip bonding pad and including a probe region (202 of figure 3B) for performing wafer-level testing prior to performing the bumping process (see the abstract, and col. 5, lines 10-20).

As to claim 2, Yu et al. discloses in figs. 3-5, the test pad (208a of figure 4A) may be disposed anywhere along a periphery of the bonding pad (208 of figure 4A).

As to claim 3, Yu et al. discloses in Figs. 3-5, the bonding pad comprises a shape from the group consisting of a polygonal shape, and circular shape (208 of figure 4A).

As to claim 4, Yu et al. discloses in Figs. 3-5, the test pad (208a of figure 4A) comprises a shape from the group consisting of a polygonal shape, and circular shape (208a).

As to claim 5, Yu et al. discloses in Figs. 3-5, a first metal redistribution layer (202 of figure 3B) electrically connected to the bonding and test pads, and being coplanar with one another (fig. 3B).

As to claim 7, Yu et al. discloses in Figs. 3-5, the region (220 of figure 4C) to be bumped is defined by a first opening in a passivation layer (210 of figure 4C).

As to claim 8, Yu et al. discloses in Figs. 3-5, the probe region (208a figure 4A) is defined by a second opening in the passivation, the first and second openings being spaced apart from one another (fig. 4A).

Allowable Subject Matter

3. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 6, the prior art does not teach or suggest the interface assembly wherein the first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

Response to Arguments

In view of the Appeal Brief filed on 5/08/06, PROSECUTION IS HEREBY REOPENED.

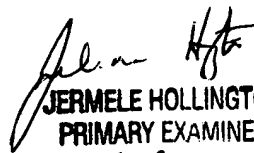
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Nguyen whose telephone number is (571) 272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha T. 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.

TN
7/18/06


JERMELE HOLLINGTON
PRIMARY EXAMINER
Aua829
07/19/06

PTO/SB/08A (05-03)

Approved for use through 07/31/2006. OMB 0651-0031

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

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

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/953,291
		Filing Date	09/29/2004
		First Named Inventor	Mark Adam Bachman
		Group Art Unit	2829
		Examiner Name	NGUYEN, Tung X.
Sheet 1 of 1	Attorney Docket Number	Bachman 3-11-16-173 (383)	

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
TN	01	US-6,359,342 B1	03-19-2002	Yuan et al.	
TN	02	US 2004/0161865 A1	08-19-2004	Yu et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ² -Kind Code ⁴ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁵

Examiner Signature	/Tung Nguyen/	Date Considered	07/18/2006
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¹EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

²Applicant is to place a check mark here if English Language Translation is attached.
³Applicant's unique citation designation number (optional).
 This collection of information is required by 37 CFR 1.98. 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 2 hours 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 (1-800-786-9199) and select option 2.

Notice of References Cited	Application/Control No. 10/953,291	Applicant(s)/Patent Under Reexamination BACHMAN ET AL.	
	Examiner Tung X. Nguyen	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-6,869,809	03-2005	Yu et al.	438/14
	B	US-			
	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					
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	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.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under
Reexamination

BACHMAN ET AL.

Art Unit

2829

SEARCHED

Class	Subclass	Date	Examiner
324	754	6/17/2005	TN
	763		
	760		
	765		
	158.1		
	72.5;73.1		
438	18	6/17/2005	TN
	132		
257	48	6/17/2005	TN
	529		

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Consulted with Vinh Nguyen about field search	6/17/2005	TN
EAST search and keywords search and updated search (see history printed out)	7/18/2006	TN

Index of Claims



Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under Reexamination

BACHMAN ET AL.

Art Unit

2829

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	7/18/06									
	1	✓									
	2	✓									
	3	✓									
	4	✓									
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	7	✓									
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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2533	(flip adj chip) near3 pad	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 13:26
L2	4342	test adj pad	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 13:26
L3	74	1 and 2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 13:27
L4	36	(perform\$4 near3 bump\$4 adj process)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 13:27
L5	6	3 and 4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 13:27
L6	12	("20020135055" "20030116835" "5346861" "5682061" "6361959" "6372627" "6437591" "6600171" "6670634" "6680213" "6687989" "6708399").PN. OR ("6869809").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/07/18 14:12
L7	4	"6869809"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:19
L8	0	438/18/132.ccls	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:20
L9	2373	257/48,529.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:20

EAST Search History

L10	2429	324/73.1,72.5.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:20
L11	0	438/18,132.ccls	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:20
L12	985	438/18,132.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:21
L13	11	1 and 12	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:21
L14	2	3 and 13	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:21
L15	0	10 and 1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:21
L16	27	9 and 1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:21
L17	1	4 and 16	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 15:22
S1	0	(Yu adj et adj al).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:21
S2	0	"Us-2004/0173794 A1"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:22

EAST Search History

S3	0	"2004/0173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:22
S4	27	"0173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:26
S5	0	S4 and Yu	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:26
S6	3921	324/754.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:27
S7	0	S6 and pad with bump\$4 and test\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:28
S8	346	S6 and pad with bump\$4 and test\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:28
S9	297	S8 and wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:53
S10	0	(crip\$4 adj line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:55
S11	1	(scrip\$4 adj line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:57
S12	1	(scrip\$4 near3 line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:57

EAST Search History

S13	3450	(scri\$4 near3 line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:49
S14	43	S13 and S6	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:44
S15	2	"20040173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:49
S16	14773	324/754-765,158.1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:49
S17	123	(scribe near3 line) near3 pad with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:52
S18	9	S16 and S17	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:51
S19	10131	fang.inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 10:45
S20	0	test\$4 adj (electrical adj characteristic with bump)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 10:46
S21	50	test\$4 with (electrical adj characteristic with bump)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 10:46
S22	6	S19 and S21	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/07/18 13:25

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

**REVOCATION OF POWER OF
ATTORNEY WITH
NEW POWER OF ATTORNEY
AND
CHANGE OF CORRESPONDENCE ADDRESS**

Application Number	10/953,291
Filing Date	9/29/2004
First Named Inventor	Mark Adam Bachman, et al.
Art Unit	2829
Examiner Name	Tung X. Nguyen
Attorney Docket Number	BACHMAN 3-11-16-173

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint the practitioners associated with the Customer Number:

47396

☐ Please change the correspondence address for the above-identified application to:☒ The address associated with
Customer Number:

47396

OR

☐ Firm or
Individual Name
Address

City

State

Zip

Country

Telephone

Email

I am the:

☐ Applicant/Inventor.☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)**SIGNATURE of Applicant or Assignee of Record**

Signature

Name

David L. Smith

Date

7/14/06

Telephone

610-712-3784

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.36. 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 3 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 1460, Alexandria, VA 22313-1460. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1460, Alexandria, VA 22313-1460.

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

STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: Agere Systems Inc.Application No./Patent No./Control No.: 10/953,291 Filed/Issue Date: 9/29/2004Entitled: METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS_____, a _____
(Name of Assignee) (Type of Assignee: 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 0450, or a true copy of the original assignment 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:

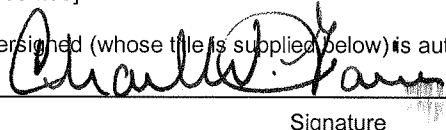
1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for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

July 17, 2006

Date

Charles W. Gaines

Printed or Typed Name

972-480-8800

Telephone Number

Attorney for Applicants
Title

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.

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383

JUL 0 2005

BEUSSE BROWNLEE WOLTER
MORA & MAIRE, P.A.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 23, 2005

PTAS

BEUSSE BROWNLEE WOLTER MORA & MARIE, . PA
JAMES H. BEUSSE
390 N. ORANGE AVENUE
SUITE 2500
ORLANDO, FL 32801

102927334A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES DIVISION, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 01/27/2005

REEL/FRAME: 016176/0450

NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

BACHMAN, MARK ADAM

DOC DATE: 12/15/2004

ASSIGNOR:

CHESIRE, DANIEL PATRICK

DOC DATE: 11/18/2004

ASSIGNOR:

KOOK, TAEHO

DOC DATE: 12/17/2004

ASSIGNOR:

MERCHANT, SAILESH M.

DOC DATE: 12/17/2004

ASSIGNEE:

AGERE SYSTEMS, INC.
1110 AMERICAN PARKWAY NE
ALLENTOWN, PENNSYLVANIA 18109

016176/0450 PAGE 2

SERIAL NUMBER: 10953291

FILING DATE: 09/29/2004

PATENT NUMBER:

ISSUE DATE:

TITLE: METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO
PERFORMING A FLIP CHIP BUMPING PROCESS

TONYA LEE, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

01-27-2005

Form PTO-1595
(Rev. 10/02)

RECORDED



102927334

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

OMB No. 0651-0027 (exp. 6/30/2005)

Tab settings ⇌ ⇌ ⇌ ▼ ▼ ▼ ▼ ▼

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Mark Adam Bachman
Daniel Patrick Chesire
Taeho Kook
Sailesh M. MerchantAdditional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
- ☐ Security Agreement ☐ Change of Name
- ☐ Other _____

Bachman 12-15-2004**Chesire 11-18-2004****Kook 12-17-2004**Execution Date: **Merchant 12-17-2004**

2. Name and address of receiving party(ies)

Name: **Agere Systems, Inc.**

Internal Address: _____

Street Address: **1110 American Parkway NE**City: **Allentown** State: **PA** Zip: **18109**Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: _____

A. Patent Application No.(s) **10/953,291**

B. Patent No.(s) _____

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: **James H. Beusse**

Internal Address: _____

Beusse Brownlee Wolter Mora & Maire, P.AStreet Address: **390 N. Orange Avenue****Suite 2500**City: **Orlando** State: **FL** Zip: **32801**6. Total number of applications and patents involved: **1**7. Total fee (37 CFR 3.41).....\$ **40.00**☒ Enclosed☐ Authorized to be charged to deposit account

8. Deposit account number: _____

DO NOT USE THIS SPACE

9. Signature.

James H. Beusse

Name of Person Signing

Signature

January 19, 2005

Date

01/26/2005 DBYRNE

00000104 10953291

Total number of pages, including cover sheet, attachments, and documents: **5**

01 FC:8021

40.00 All documents to be recorded with required cover sheet information to:

Commissioner of Patents & Trademarks, Box Assignments

Washington, D.C. 20231

ASSIGNMENT AND AGREEMENT

For value received, We, **MARK ADAM BACHMAN** of **Sinking Spring** in the County of **Berks** and State of **Pennsylvania**; **DANIEL PATRICK CHESIRE** of **Winter Garden**, in the County of **Orange** and State of **Florida**; **TAEHO KOOK** of **Orlando**, in the County of **Orange** and State of **Florida** and **SAILESH M. MERCHANT** of **Macungie** in the County of **Lehigh** and State of **Pennsylvania** hereby sell, assign and transfer to Agere Systems, Inc., a corporation of the State of Delaware, having an office at 1110 American Parkway NE, Allentown, PA 18109, U.S.A., and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to **METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS** described in an application for Letters Patent of the United States, Application No. **10/953,291**, filed **September 29, 2004**, and all the rights and privileges in said application and under any and all Letters Patent that may be granted in the United States for said inventions; and we also concurrently hereby sell, assign and transfer to Agere Systems, Inc. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

We authorize Agere Systems, Inc. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

We hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Agere Systems, Inc. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

We request that any and all patents for said inventions be issued to Agere Systems, Inc. in the United States and in all countries foreign to the United States, or to such nominees as Agere Systems, Inc. may designate.

We agree that, when requested, we shall, without charge to Agere Systems, Inc. but at its expense, sign all papers, and do all acts which may be

necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

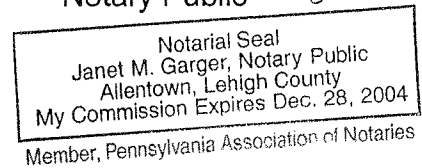
Date: 10/15/2004

Mark Adam Bachman
MARK ADAM BACHMAN

United States of America)
State of Pennsylvania) ss:
County of)

On this 15th day of December, 2004, before me personally came **Mark Adam Bachman**, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Janet M. Garger
Notary Public



Date: _____

DANIEL PATRICK CHESIRE

United States of America)
State of Florida) ss:
County of Orange)

On this _____ day of _____, 2004, before me personally came **Daniel Patrick Chesire**, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Notary Public

necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Date: _____

MARK ADAM BACHMAN

United States of America)
State of Pennsylvania) ss:
County of)

On this _____ day of _____, 2004, before me personally came **Mark Adam Bachman**, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Notary Public

Date: 11-18-2004

Daniel Patrick Chesire
DANIEL PATRICK CHESIRE

United States of America)
State of Florida) ss:
County of Orange)

On this 18th day of November, 2004, before me personally came **Daniel Patrick Chesire**, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Mary V Carter
Notary Public



Date: Dec. 17, 2004

Tae Ho Kook
TAEHO KOOK

United States of America)
State of ~~Florida~~ Pennsylvania) ss:
County of ~~Orange~~ Lehigh)

On this 17th day of December, 2004, before me personally came **Tae Ho Kook**, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Janet M. Garger
Notary Public Notarial Seal
Janet M. Garger, Notary Public
Allentown, Lehigh County
My Commission Expires Dec. 28, 2004
Member, Pennsylvania Association of Notaries

Date: 17 Dec 04

Sailesh M. Merchant
SAILESH M. MERCHANT

United States of America)
State of Pennsylvania) ss:
County of)

On this 17th day of December, 2004, before me personally came **Sailesh M. Merchant**, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

Janet M. Garger
Notary Public
Notarial Seal
Janet M. Garger, Notary Public
Allentown, Lehigh County
My Commission Expires Dec. 28, 2004
Member, Pennsylvania Association of Notaries

Agere Systems, Inc.
1110 American Parkway NE
Allentown, Pennsylvania 18109

Electronic Acknowledgement Receipt

EFS ID:	1116060
Application Number:	10953291
Confirmation Number:	2052
Title of Invention:	Method and structures for testing a semiconductor wafer prior to performing a flip chip bumping process
First Named Inventor:	Mark Adam Bachman
Customer Number:	29391
Filer:	Charles W. Gaines/Elizabeth Schumacher
Filer Authorized By:	Charles W. Gaines
Attorney Docket Number:	Bachman 3-11-16-173
Receipt Date:	17-JUL-2006
Filing Date:	29-SEP-2004
Time Stamp:	17:37:49
Application Type:	Utility
International Application Number:	

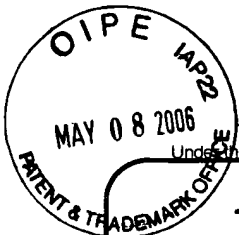
Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Power of Attorney (may include Associate POA)	POA.pdf	152007	no	1

Warnings:					
Information:					
2	Assignee showing of ownership per 37 CFR 3.73(b).	Statement_373b.pdf	464796	no	8
Warnings:					
Information:					
Total Files Size (in bytes):			616803		
<p>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.</p> <p><u>New Applications Under 35 U.S.C. 111</u> 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.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> 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.</p>					



\$AR/11w

PTO/SB/21 (09-04)

Approved for use through 07/31/2006. OMB 0651-0031

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

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/953,291
Filing Date	09/29/2004
First Named Inventor	Mark Adam Bachman
Art Unit	2829
Examiner Name	NGUYEN, Tung X.
Attorney Docket Number	Bachman 3-11-16-173 (383)

ENCLOSURES (Check all that apply)

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form | <input type="checkbox"/> Drawing(s) | <input type="checkbox"/> After Allowance Communication to TC |
| <input checked="" type="checkbox"/> Fee Attached | <input type="checkbox"/> Licensing-related Papers | <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences |
| <input type="checkbox"/> Amendment/Reply | <input type="checkbox"/> Petition | <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) |
| <input type="checkbox"/> After Final | <input type="checkbox"/> Petition to Convert to a Provisional Application | <input type="checkbox"/> Proprietary Information |
| <input type="checkbox"/> Affidavits/declaration(s) | <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address | <input type="checkbox"/> Status Letter |
| <input type="checkbox"/> Extension of Time Request | <input type="checkbox"/> Terminal Disclaimer | <input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below): |
| <input type="checkbox"/> Express Abandonment Request | <input type="checkbox"/> Request for Refund | 1. Postcard |
| <input type="checkbox"/> Information Disclosure Statement | <input type="checkbox"/> CD, Number of CD(s) _____ | |
| | <input type="checkbox"/> Landscape Table on CD | |
| <input type="checkbox"/> Certified Copy of Priority Document(s) | <input type="text"/> Remarks | |
| <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application | | |
| <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | | |

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Beusse Wolter Sanks Mora & Maire, P.A.		
Signature			
Printed name	Enrique J. Mora		
Date	May 3, 2006	Reg. No.	36,875

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Kathy L. Tissue	Date	May 3, 2006

This collection of information is required by 37 CFR 1.5. 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 2 hours 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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PTO/SB/17 (12-04)

Approved for use through 07/31/2006. OMB 0651-0032

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

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Effective on 12/08/2004.

Enacted pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2005☐ Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)**500.00****Complete if Known**

Application Number	10/953,291
Filing Date	09/29/2004
First Named Inventor	Mark Adam Bachman et al.
Examiner Name	NGUYEN, Tung X.
Art Unit	2829
Attorney Docket No.	Bachman 3-11-16-173

METHOD OF PAYMENT (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☐ Deposit Account Deposit Account Number: _____ Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, except for the filing fee☐ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17☐ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	<u>Small Entity</u> Fee (\$)	Fee (\$)	<u>Small Entity</u> Fee (\$)	Fee (\$)	<u>Small Entity</u> Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

2. EXCESS CLAIM FEES**Fee Description**

	Fee (\$)	<u>Small Entity</u> Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
_____ - 20 or HP = _____	x _____	= _____				
HP = highest number of total claims paid for, if greater than 20						
Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)			
_____ - 3 or HP = _____	x _____	= _____				
HP = highest number of independent claims paid for, if greater than 3						

3. APPLICATION SIZE FEE

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).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____ - 100 = _____	/ 50 = _____	(round up to a whole number) x _____	= _____	

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: **Appeal Brief Fees****Fees Paid (\$)****\$500.00****SUBMITTED BY**

Signature		Registration No. 36,875 (Attorney/Agent)	Telephone 407-926-7705
Name (Print/Type)	Enrique J. Mora		Date 5/3/2006

This collection of information is required by 37 CFR 1.136. 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 30 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.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:)
)
Applicants: Mark Adam Bachman et al) Examiner: NGUYEN, Tung X.
)
Serial No.: 10/953,291) Group Art Unit: 2829
)
Filed: 09/29/2004) Confirmation No.: 2052
)
Title: Method and Structures for Testing) Atty. Docket No.: Bachman
A Semiconductor Wafer Prior to) 3-11-16-173
Performing a Flip Chip Bumping)
Process)
_____)

Mail Stop Appeal Brief-Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF UNDER 37 CFR 41.10

This brief is in furtherance of the Notice of Appeal filed in this application on March 14, 2006.

1. REAL PARTY IN INTEREST - 37 CFR 41.37(c)(1)(i)

The real party in interest in the present Appeal is the assignee of record of the present application, Agere Systems, Inc.

2. RELATED APPEALS AND INTERFERENCES - 37 CFR 41.37(c)(1)(ii)

To the best of our knowledge, there is no other appeal, interference or judicial proceeding that is related to or that will directly affect, or that will be directly affected by, or that will have a bearing on the Board's decision in this Appeal.

3. STATUS OF CLAIMS - 37 CFR 41.37(c)(1)(iii)

Claims cancelled: none.

Claims withdrawn but not cancelled: none.

Claims pending: 1-9.

Claims allowable: 6.

Claims rejected: 1-5 and 7-9.

Claim rejections appealed: 1-5 and 7-9.

4. STATUS OF AMENDMENTS - 37 CFR 41.37(c)(1)(iv)

There is no amendment filed subsequent to final rejection.

5. SUMMARY OF CLAIMED SUBJECT MATTER- 37 CFR 41.37(c)(1)(v)

The present invention generally relates to structures and techniques for enabling wafer level testing prior to performing a bumping process in a flip chip assembly. FIG. 2 illustrates a conductive test pad 22 integrally constructed with a conductive bonding pad 24. This arrangement provides at least the following advantages: conductive test pad 22 provides a respective probe region 26 where a probe tip may be placed for performing, for example, wafer level testing. The bonding pad 24 includes a bump region 28 that is no longer subject to mechanical contact with the probe tip and resulting surface irregularities. It is envisioned that since the test pad and bonding pad comprise an integral structure that no longer requires interconnect lines, and avoids or substantially reduces propagation delays in test signals passing therethrough, an interface assembly embodying aspects of the present invention should lead to more reliable and accurate test results.

Claim 1

Independent claim 1 is directed to an interface assembly (20) for a semiconductor wafer. The interface assembly comprises a flip chip bonding pad (24) including a region (28) for performing a bumping process. The interface assembly further comprises a test pad (22) integrally constructed with the

bonding pad. The test pad is co-planar relative to the flip chip bonding pad and includes a probe region (26) for performing wafer-level testing prior to performing a bumping process. See paragraph 14 and FIG. 2 of the publication document for the present application.

Claim 9

Independent claim 9 is directed to a method for testing a semiconductor wafer prior to performing a flip chip bumping process. The method comprises providing a flip chip bonding pad (24) having a region (28) for performing the bumping process. The method further comprises integrally constructing a test pad (22) with the bonding pad. The test pad is disposed coplanar with the flip chip bonding pad. The test pad includes a probe region (26) for performing a wafer test prior to performing the bumping process. See paragraph 14 and FIG. 2 of the publication document for the present application.

6. GROUNDS OF REJECTION TO BE REVIEWED UPON APPEAL -
37 CFR 41.37(c)(1)(vi)

A) Whether claims 1-5, and 7-9, stand rejected under 35 U.S.C. §102(e) as being anticipated by publication No. US 2003/0094966 (hereinafter Fang).

7. APPENDICES

A copy of the claims 1-5, and 7-9 involved in this appeal is attached as a claims appendix under 37 CFR 41.37(c)(1)(viii). No evidence appendix under 37 CFR 41.37(c)(1)(xi) or related proceedings appendix under 37 CFR 41.37(c)(1)(x) is required.

37 CFR 41.37(c)(1)(vii)

A) Rejection of claims 1-5, and 7-9, under 35 U.S.C. §102(e) as being anticipated by publication No. US 2003/0094966 (hereinafter Fang).

Appellant argues that Fang does not support a *prima facie* case of anticipation for claims 1-5 and 7-9 because Fang fails to teach each of the claimed elements and/or operational relationships. With regard to the rejections applied against claims 1-5 and 7-9, it is appellants' belief that not all of the rejected claims stand or fall together. More specifically, apparatus claims 1-5, 7 and 8, stand together. However, claim 9, directed to a method for testing a semiconductor wafer prior to performing a flip chip bumping process, should be grouped separately from claims 1-5, 7 and 8 for purposes of this appeal.

The test for establishing a *prima facie* case of anticipation under §102 "requires the presence in a single prior art reference of each and every element of the claimed invention, arranged as in the claim." (Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co., 730 F.2d 1452, 221 USPQ 481,485 (Fed. Cir. 1984)). Furthermore, "there must be no difference between the claimed invention and the referenced disclosure, as viewed by a person of ordinary skill in the field of the invention." Scripps Clinic and Research Found. v. Genentech Inc., 927 F.2d 1565, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991)). Absence from the reference disclosure of any claim element and/or operational interrelationship negates anticipation under §102.

A.1) Arguments Regarding Claim 1

The Examiner relies on Fang to reject claim 1 under 35 U.S.C. §102. Fang is directed to a method for testing electrical characteristics of bumps. (See Abstract of Fang). Accordingly, Fang describes bumps 34 and 35 electrically interconnected by metal traces 32 and 33 respectively. It is respectfully submitted that the Examiner mischaracterizes that Fang discloses in FIG. 3 a flip chip bonding pad 32. In fact, Fang describes that structures 32 and 33 are metal traces for electrically interconnecting three separate bumps 31, 34, and 35. See

page 1 of Fang, lines 5-7 of paragraph 15. A metal trace is distinct from a flip chip bonding pad. As shown in FIG. 4, metal traces 32 and 33 are coated with a passive layer 42 for preventing damage due to moisture or particles. See page 2 of Fang, lines 9-11, excerpt of paragraph 16. Accordingly, the metal traces 32 and 33 are not physically accessible for testing. As noted above, Fang merely uses metal traces 32 and 33 to electrically connect three separate bumps. Applicant understands that one of those separate bumps is used for bump testing. However, it is plainly clear that the test bump 31 is physically separate from the bumps 34 and 35 being tested through the test bump. Fang fails to describe a flip chip bonding pad having a test pad integrally constructed therewith, as set forth in claim 1. Accordingly, it is not believed that there is any description or suggestion in Fang that meets the structural and/or operational relationships set forth in appellant's claim 1. Anticipation under 35 U.S.C. §102 requires that "The identical invention must be shown in as complete detail as contained in the ...claim." (*In re Bond*, 910 F.2d 831, 15USPQ2d 1566 (Fed. Cir. 1990)). Accordingly, it is submitted that Fang fails to anticipate claim 1.

Moreover, applicant submits that Fang teaches away from the claimed invention being that Fang describes bumps which are electrically interconnected by metal traces (e.g., interconnect lines). This is the antithesis of the claimed structure that comprises a test pad integrally constructed with the bonding pad. For example, since the test pad and bonding pad comprise an integral structure that no longer requires interconnect lines, this avoids or substantially reduces propagation delays in test signals passing therethrough, and this should lead to more reliable and accurate test results. Accordingly, although not raised by the Examiner, it is felt that Fang also fails to render obvious claim 1.

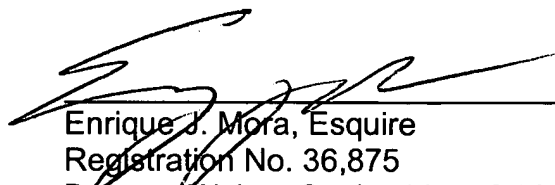
Claims 2-5 and 7 depend from claim 1 and thus incorporate the structural and/or operational relationships set forth in claim 1 plus their own recitations. It is respectfully submitted that Fang also fails to anticipate such claims under the §102 statutory requirements and these rejections should be withdrawn.

A.2) Arguments Regarding Claim 9

With regard to independent claim 9, directed to a method for testing a semiconductor prior to performing a flip chip bumping process. The method in part recites providing a flip chip bonding pad having a region for performing the bumping process. The method further recites integrally constructing a test pad with the bonding pad. As discussed, Fang fails to describe the foregoing structural and/or operational relationships, and consequently, Fang fails to anticipate this claim under the §102 statutory requirements and this rejection should also be withdrawn.

Moreover, applicant submits that Fang teaches away from the claimed invention being that Fang describes bumps which are electrically interconnected by metal traces (e.g., interconnect lines). This is the antithesis of the claimed method that comprises integrally constructing a test pad with the bonding pad. For example, since the test pad and bonding pad comprise an integral structure that no longer requires interconnect lines, this avoids or substantially reduces propagation delays in test signals passing therethrough, and this should lead to more reliable and accurate test results. Accordingly, although not raised by the Examiner, it is felt that Fang also fails to render obvious claim 9.

Respectfully submitted,



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CLAIMS APPENDIX
37 CFR 41.37(c)(1)(viii)

1. An interface assembly for a semiconductor wafer, said interface assembly comprising:

a flip chip bonding pad including a region for performing a bumping process; and

a test pad integrally constructed with said bonding pad, said test pad being co-planar relative to said flip chip bonding pad and including a probe region for performing wafer-level testing prior to performing said bumping process.

2. The interface assembly of claim 1 wherein said test pad may be disposed anywhere along a periphery of said bonding pad.

3. The interface assembly of claim 1 wherein said bonding pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.

4. The interface assembly of claim 1 wherein said test pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.

5. The interface assembly of claim 1 further comprising a first metal redistribution layer electrically connected to said bonding and test pads, and being co-planar with one another.

7. The interface assembly of claim 1 wherein the region to be bumped is defined by a first opening in a passivation layer.

8. The interface assembly of claim 7 wherein the probe region is defined by a second opening in said passivation layer, said first and second openings being spaced apart from one another.

9. A method for testing a semiconductor wafer prior to performing a flip chip bumping process, said method comprising:

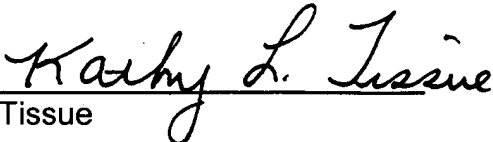
providing a flip chip bonding pad having a region for performing said bumping process;

integrally constructing a test pad with said bonding pad; and

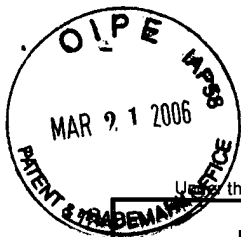
disposing said test pad coplanar with said flip chip bonding pad, said test pad including a probe region for performing a wafer test prior to performing said bumping process.

CERTIFICATE OF MAILING

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Kathy L. Tissue



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PTO/SB/31 (09-04)

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Docket Number (Optional)

**NOTICE OF APPEAL FROM THE EXAMINER TO
THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Bachman 3-11-16-173 (383)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on March 14, 2006

Signature

Kathy L. Tissue

Typed or printed name Kathy L. Tissue

In re Application of
Mark Adam Bachman

Application Number
10/953,291

Filed
09/29/2004

For **Method and Structures for Testing a Semiconductor Wafer Prior to Performing a Flip Chip Bumping Process**

Art Unit
2829

Examiner
NGUYEN, Tung X.

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) \$ 500.00

☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: \$

☒ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. . I have enclosed a duplicate copy of this sheet.

☒ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 36,875

407-926-7705

Telephone number

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34.

March 14, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of forms are submitted.

This collection of information is required by 37 CFR 41.31. 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, 1.14 and 41.6. 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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TRANSMITTAL FORM

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Total Number of Pages in This Submission

Application Number	10/953,291
Filing Date	09/29/2004
First Named Inventor	Mark Adam Bachman
Art Unit	2829
Examiner Name	NGUYEN, Tung X.
Attorney Docket Number	Bachman 3-11-16-173 (383)

ENCLOSURES (Check all that apply)

- | | | |
|---|---|---|
| <input type="checkbox"/> Fee Transmittal Form
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<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)
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Signature			
Printed name	Enrique J. Mora		
Date	March 14, 2006	Reg. No.	36,875

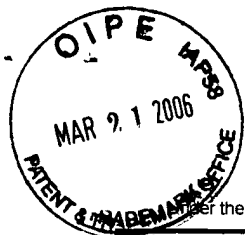
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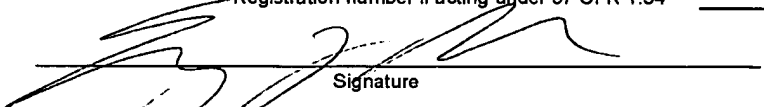
Signature			
Typed or printed name	Kathy L. Tissue	Date	March 14, 2006

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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2005 <i>(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)</i>		Docket Number (Optional) Bachman 3-11-16-173 (383)	
Application Number 10/953,291		Filed 09/29/2004	
For Method and Structures for Testing a Semiconductor Wafer Prior to Performing a Flip Chip Bumping Process			
Art Unit 2829		Examiner NGUYEN, Tung X.	
This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application. The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):			
		<u>Fee</u>	<u>Small Entity Fee</u>
<input checked="" type="checkbox"/>	One month (37 CFR 1.17(a)(1))	\$120	\$60
<input type="checkbox"/>	Two months (37 CFR 1.17(a)(2))	\$450	\$225
<input type="checkbox"/>	Three months (37 CFR 1.17(a)(3))	\$1020	\$510
<input type="checkbox"/>	Four months (37 CFR 1.17(a)(4))	\$1590	\$795
<input type="checkbox"/>	Five months (37 CFR 1.17(a)(5))	\$2160	\$1080
<input type="checkbox"/>	Applicant claims small entity status. See 37 CFR 1.27.		
<input checked="" type="checkbox"/>	A check in the amount of the fee is enclosed.		
<input type="checkbox"/>	Payment by credit card. Form PTO-2038 is attached.		
<input type="checkbox"/>	The Director has already been authorized to charge fees in this application to a Deposit Account.		
<input type="checkbox"/>	The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____ I have enclosed a duplicate copy of this sheet.		
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I am the <input type="checkbox"/> applicant/inventor.			
<input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).			
<input checked="" type="checkbox"/> attorney or agent of record. Registration Number <u>36,875</u>			
<input type="checkbox"/> attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____			
 Signature		March 14, 2006 Date	
Enrique J. Mora Typed or printed name		(407) 926-7705 Telephone Number	
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<input type="checkbox"/> Total of _____ forms are submitted.			

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FAX No. : 1-571-273-8300
No of PAGES : 4 including cover sheet)
FROM : Enrique J. Mora
DATE : March 15, 2006
RE : Serial Number 10/953,291; filed 09/29/2004
ATTY. DOCKET NO: Bachman 3-11-16-173 (383)

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Attached please find for entry into the above-referenced application:

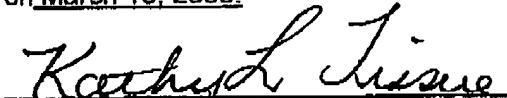
- 1) Information Disclosure Statement Transmittal (2 pages); and
- 2) IDS Form 1449.

Yours truly,


Enrique J. Mora
Reg. #36,875

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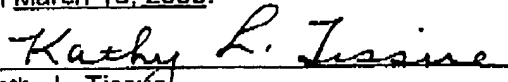
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In re: Application of:

Mark Adam Bachman

Group Art Unit: 2829

Serial No.: 10/953,291

Examiner: NGUYEN, Tung X.

Filed: 09/29/2004

For: Method and Structures for Testing a Semiconductor Wafer Prior to Performing a
Flip Chip Bumping Process

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

- ☐ 1. Pursuant to 37 CFR 1.97(b)
(within 3 months of filing or prior to 1st Office Action)
- ☒ 2. Certification Pursuant to 37 CFR 1.97(c)
(before Final Office Action or Allowance)
- ☐ 3. Petition, Certification & Petition Fee Payment Pursuant to 37 CFR 1.97(d) (after
Final Office Action or Allowance but before issue fee payment)

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

Sir:

The following are submitted in the above-identified application in compliance with 37
CFR 1.97 & 1.98:

- ☒ 4. A list of documents on form PTO-1449 is enclosed herewith.

This paper is submitted in accordance with:

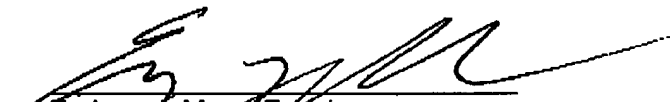
- ☐ 5. 37 CFR 1.97(b): [within 3 months of filing or prior to 1st Office Action]

-1-

Application No. 10/953,291

- ☐ 6. 37 CFR 1.97(c): [before Final office Action or Allowance, whichever is earlier; and
- ☒ 7. The required certification made in item 10 below; or
- ☐ 8. The \$180.00 fee specified in 37 CFR §1.17(p) for submission of this Information Disclosure Statement.
- ☐ 9. 37 CFR §1.97(d): [after Final Office Action or Allowance, but before issue fee payment]; and
- a) This is a petition for consideration of the subject Information Disclosure Statement. The petition fee (\$180.00) required by 37 CFR 1.17(i)(1) is authorized in item 11 below. (Direct this letter to: "Attention: PETITIONS EXAMINER" and, if applicable, include batch locator information: e.g., "Allowed Files, Batch _____, Date of Allowance _____"), and
- b) The required Certification is stated in item 10 below.
- ☒ 10. Certification
- ☒ a) Each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement;
- or
- ☐ b) No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this document after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.
- ☐ 11. Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. _____.

Respectfully submitted,



Enrique J. Mora, Esquire
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PTO/SB/08A (05-03)

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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	10/953,291
		Filing Date	09/29/2004
		First Named Inventor	Mark Adam Bachman
		Group Art Unit	2829
		Examiner Name	NGUYEN, Tung X.
Sheet 1 of 1	Attorney Docket Number	Bachman 3-11-16-173 (383)	

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	01	US-6,359,342 B1	03-19-2002	Yuan et al.	
	02	US 2004/0161865 A1	08-19-2004	Yu et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

Examiner Signature	Date Considered
--------------------	-----------------

¹EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 608. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

²Applicant is to place a check mark here if English Language Translation is attached.

³Applicant's unique citation designation number (optional). This collection of information is required by 37 CFR 1.98. 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 2 hours 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 (1-800-786-9199) and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/953,291	09/29/2004	Mark Adam Bachman	Bachman 3-11-16-173	2052
29391	7590	02/09/2006	EXAMINER	
BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A. 390 NORTH ORANGE AVENUE SUITE 2500 ORLANDO, FL 32801			NGUYEN, TUNG X	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 02/09/2006

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

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/953,291

Applicant(s)

BACHMAN ET AL.

Examiner

Tung X. Nguyen

Art Unit

2829

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

THE REPLY FILED 17 January 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: 6.
Claim(s) rejected: 1-5 and 7-9.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

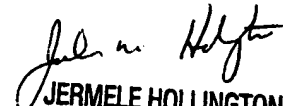
8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☐ Other: _____.

Continuation of 11. does NOT place the application in condition for allowance because: Applicant's response filed 1/17/06 have been fully considered but they are not persuasive.

In re pages 2-3, Applicant argues that Fang fails to describe a flip chip bonding pad having a test pad integrally constructed therewith. In response, Examiner respectfully disagrees about that. In the wafer manufacture process for conducting the processes, such as exposure, developing and etching; forming the pads, are electrically connected to the other pads on the neighboring chips, on the scribe line (13 of figure 3) located between mutually neighboring chips (36, 37 of figure 3); after the flip-chip bumping processing, the wafer being formed with bumps (31, 34, 35 of figure 3) on all the pads on chips (36, 37 of figure 3) and on the scribe lines (col. 1, lines 1-7). Therefore, Fang disclose to describe a flip chip bonding pad (32 of figure 3) having a test pad at the end of bonding pad (32 of figure 3) for processing the bump (31, 34, 35 of figure 3) to testing the neighboring chips without contacting the bump on the chip.


JERMELE HOLLINGTON
PRIMARY EXAMINER
Au2829
02/01/06

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TO : Commissioner for Patents
COMPANY : USPTO
FAX No. : 1-571-273-8300
No of PAGES : 5 (including cover sheet)
FROM : Enrique J. Mora
DATE : January 17, 2006
RE : Serial Number 10/953,291; filed 09/29/2004
ATTY. DOCKET NO: Bachman 3-11-16-173

**RECEIVED
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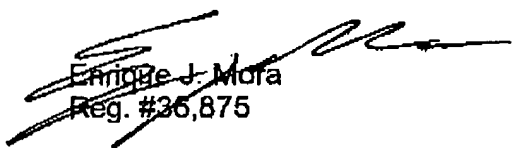
JAN 17 2006

VIA FACSIMILE ONLY

Attached please find for entry into the above-referenced application:

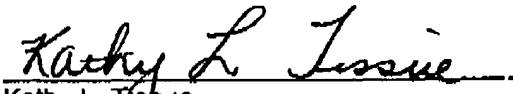
Reply/Response Under CFR 1.116 – responsive to Final Office Action dated 11/14/2005
- (4 pages).

Yours truly,


Enrique J. Mora
Reg. #36,875

Certificate of Transmission

I hereby certify that this correspondence is being
facsimile transmitted to the United States Patent and
Trademark Office, Fax No. 571-273-8300
on January 17, 2006.


Kathy L. Tissue

U.S. Serial No. 10/953,291
Amendment dated 11/14/2005
Reply to Office Action of 1/17/2006

Bachman 3-11-16-173

Certificate of Facsimile

I hereby certify that this correspondence is being
Forwarded to Fax No. 571-273-8300 and addressed
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AMENDMENT, Alexandria, VA 22313-1450 on
January 17, 2006.

By: Kathy Tisaue

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JAN 17 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:)	
Applicants: Mark Adam Bachman et al)	Examiner: NGUYEN, Tung X.
Serial No.: 10/953,291)	Group Art Unit: 2829
Filed: 09/29/2004)	Confirmation No.: 2052
Title: Method and Structures for Testing A Semiconductor Wafer Prior to Performing a Flip Chip Bumping Process)	Atty. Docket No.: Bachman 3-11- 16-173

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

REPLY/RESPONSE UNDER CFR 1.116

This Reply is in response to the Final Office Action dated as mailed November 14, 2005 and having a timely two-month response date of January 17, 2006 (given that the January 14, 2006 fell on a Saturday and Monday, January 16, 2006 was a federal holiday).

Please amend the above-identified application as follows:

Remarks/Arguments begin on page 2 of this paper.

U.S. Serial No. 10/953,291
Amendment dated 11/14/2005
Reply to Office Action of 1/17/2006

Bachman 3-11-16-173

REMARKS/ARGUMENTS

Claims 1-5, and 7-9, stand rejected as being anticipated by publication No. US 2003/0094966 (hereinafter Fang). Applicant appreciates the recognition of allowable subject matter in claim 6, which presently stands objected to. As described in greater detail below, applicant strongly believes that the Office Action misconstrues Fang and requests reconsideration of the rejections and objections.

The Office Action Misconstrues Fang's Disclosure

The Office Action states that Fang discloses in FIG. 3 a flip chip bonding pad 32. In fact, Fang describes that structures 32 and 33 are metal traces for electrically interconnecting three separate bumps 31, 34, and 35. See page 1 of Fang, lines 5-7 of paragraph 15. A metal trace is distinct from a flip chip bonding pad. This distinction would be readily understood in the art. As shown in FIG. 4, metal traces 32 and 33 are coated with a passive layer 42 for preventing damage due to moisture or particles. See page 2 of Fang, lines 9-11, excerpt of paragraph 16. Accordingly, the metal traces 32 and 33 are not physically accessible for testing. As noted above, Fang merely uses metal traces 32 and 33 to electrically connect three separate bumps. Applicant understands that one of those separate bumps is used for bump testing. However, it is plainly clear that the test bump 31 is physically separate from the bumps 34 and 35 being tested through the test bump. Fang fails to describe a flip chip bonding pad having a test pad integrally constructed therewith, as set forth in claim 1. Applicant advantageously avoids the need of metal traces for electrically interconnecting the test pad with the bonding pad.

U.S. Serial No. 10/953,291
Amendment dated 11/14/2005
Reply to Office Action of 1/17/2006

Bachman 3-11-16-173

**The Office Action Disregards Structural and/Operational Relationships
Recited in the Claims**

Fang describes that the separate bumps 31, 34 and 35 are structures formed after a flip chip bumping process is performed. See Fang page, lines 12-14, excerpt of paragraph 16. This is inapposite to the operational and/or structural relationships recited in claim 1 that specifically recite a flip chip bonding pad and a test pad for performing testing prior to performing the bumping process. This is another notable difference between the claimed invention and Fang that the Office Action simply disregards. It is noted that the improved test structure enabled by applicant's invention could be used after performing the bumping process. In this case, the resulting structure would be a bump with a test pad integrally constructed therewith. That is, a bump (in lieu of the bonding pad) with an integral test pad. The key point being that the resulting post-bumping structure would continue to be entirely different from the structure of Fang, which merely provides three separate bumps. None of the bump structures of Fang includes a bump and a test pad integrally constructed with the bump being tested.

In view of the foregoing remarks, it is respectfully submitted that Fang fails to anticipate or otherwise render obvious claim 1, and applicant kindly requests that this basis of rejection be removed.

Claims 2-5 and 7 depend from claim 1 and thus incorporate the structural and/or operational relationships set forth in claim 1 plus their own recitations. It is respectfully submitted that Fang also fails to anticipate such claims under the §102 statutory requirements and these rejections should be withdrawn.

Claim 9 is directed to a method for testing a semiconductor prior to performing a flip chip bumping process. The method in part recites providing a flip chip bonding pad having a region for performing the bumping process. The method further recites integrally constructing a test pad with the bonding pad. As discussed, Fang fails to describe the foregoing structural and/or operational relationships, and consequently, Fang fails to anticipate this claim under the §102 statutory requirements and this rejection should also be withdrawn.

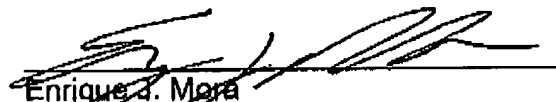
U.S. Serial No. 10/953,291
Amendment dated 11/14/2005
Reply to Office Action of 1/17/2006

Bachman 3-11-16-173

It is respectfully submitted that each of the claims pending in this application recites patentable subject matter and it is further submitted that such claims comply with all statutory requirements and thus each of such claims should be allowed.

The Examiner is invited to call the undersigned if clarification is needed on any aspects of this Reply/Amendment, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



Enrique J. Mora
Registration No. 36,875
Beusse Brownlee Wolter Mora & Maire, P.A.
390 N. Orange Avenue, Suite 2500
Orlando, FL 32801
Telephone: 407-926-7705
Fax: 407-926-7720



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/953,291

09/29/2004

Mark Adam Bachman

Bachman 3-11-16-173

2052

29391

7590

11/14/2005

BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A.
390 NORTH ORANGE AVENUE
SUITE 2500
ORLANDO, FL 32801

EXAMINER

NGUYEN, TUNG X

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 11/14/2005

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

Office Action Summary	Application No.	Applicant(s)	
	10/953,291	BACHMAN ET AL.	
	Examiner	Art Unit	
	Tung X. Nguyen	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 9/06/05.
- 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) _____ 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) 1-5 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 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 29 September 2004 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) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> 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 –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-5, 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fang (Pub.No. US 2003/0094966).

As to claims 1, 9, Fang discloses in Figs. 3, a device comprising a flip chip bonding pad (32 of figure 3) including a region for performing a bumping (34, 35 of figure 3); and a test pad (31 of figure 3) integrally constructed with the bonding pad (32), the test pad being co-planar relative to the flip chip bonding pad and including a probe region (via 31) for performing wafer-level testing prior to performing the bumping process (see the abstract, and col. 1, lines 15-19 of paragraph 15).

As to claim 2, Fang discloses in figs. 3, the test pad (31) may be disposed anywhere along a periphery of the bonding pad (32).

As to claim 3, Fang discloses in Figs. 3, the bonding pad comprises a shape from the group consisting of a polygonal shape, and circular shape (34).

As to claim 4, Fang discloses in Figs. 3, the test pad (31) comprises a shape from the group consisting of a polygonal shape, and circular shape (31).

As to claim 5, Fang discloses in Figs. 3, a first metal redistribution layer (32) electrically connected to the bonding and test pads, and being co-planar with one another (fig. 3).

As to claim 7, Fang discloses in Figs. 3, the region to be bumped is defined by a first opening in a passivation layer (34 connecting to 35 for testing).

As to claim 8, Fang discloses in Figs. 3, the probe region (31) is defined by a second opening in the passivation, the first and second openings being spaced apart from one another (fig. 3).

Allowable Subject Matter

3. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 6, the prior art does not teach or suggest the interface assembly wherein the first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

Response to Arguments

5. Applicant's arguments filed 9/6/05 have been fully considered but they are not persuasive.

In re pages 4-6, to applicant argues that Fang patents fail to anticipate claims 1, and 9 under the 102 statutory requirements.

In response, the examiner respectfully disagrees with Applicant about the issue for the following the reasons: As to claims 1, 9, Fang clearly disclose in Figs. 3, a device comprising a flip chip bonding pad (32 of figure 3) including a region for performing a bumping (34, 35 of figure 3); and a test pad (31 of figure 3) integrally constructed with the bonding pad (32); the test pad being co-planar relative to the flip chip bonding pad and including a probe region (via 31) for performing wafer-level testing prior to performing the bumping process (see the abstract, and col. 1, lines 15-19 of paragraph 15).

Conclusion

6. **THIS ACTION IS MADE FINAL.** 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 mailing date of this final action.


Art Unit: 2829

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Nguyen whose telephone number is (571) 272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (571) 272-2034. 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).

TN
11/08/05


VINH NGUYEN
PRIMARY EXAMINER
A-u. 2829
11/10/05

Index of Claims



Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under Reexamination

BACHMAN ET AL.

Art Unit

2829

√	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	11/8/05									
	1	√									
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Search Notes

Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under
Reexamination

BACHMAN ET AL.

Art Unit

2829

SEARCHED

Class	Subclass	Date	Examiner
324	754	6/17/2005	TN
	763		
	765		
	158.1		
438	18	6/17/2005	TN
257	48	6/17/2005	TN

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Consulted with Vinh Nguyen about field search	6/17/2005	TN
EAST search and updated search with keywords and history printed out	11/8/2005	TN

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	0	(Yu adj et adj al).inv.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:21
S2	0	"Us-2004/0173794 A1"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:22
S3	0	"2004/0173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:22
S4	27	"0173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:26
S5	0	S4 and Yu	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:26
S6	3921	324/754.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:27
S7	0	S6 and pad with bumb\$4 and test\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:28
S8	346	S6 and pad with bump\$4 and test\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:28
S9	297	S8 and wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:53
S10	0	(crip\$4 adj line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:55

S11	1	(scrip\$4 adj line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:57
S12	1	(scrip\$4 near3 line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 10:57
S13	3450	(scri\$4 near3 line) with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:49
S14	43	S13 and S6	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:44
S15	2	"20040173794"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:49
S16	14773	324/754-765,158.1.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:49
S17	123	(scribe near3 line) near3 pad with wafer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:52
S18	9	S16 and S17	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/06/17 14:51

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JACKSON O. BROWNLEE
JOHN L. DEANGELIS, JR.
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(407) 926-7705
emora@iplawfi.com

SEP 06 2005

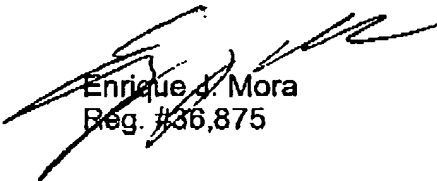
TO : Commissioner for Patents
COMPANY : USPTO
FAX No. : 1-571-273-8300
No of PAGES : 7 (including cover sheet)
FROM : Enrique J. Mora
DATE : September 6, 2005
RE : Serial Number 10/953,291
ATTY. DOCKET NO: Bachman 3-11-16-173 (383)

VIA FACSIMILE ONLY

Attached please find for entry into the above-referenced application:


- 1) Reply/Amendment to Office Action Dated 6/29/2005 (6 pages).

Yours truly,


Enrique J. Mora
Reg. #36,875

Certificate of Transmission

I hereby certify that this correspondence is being
facsimile transmitted to the United States Patent and
Trademark Office, Fax No. 571-273-8300
on September 6, 2005.


Kathy L. Issue

Certificate of Facsimile

I hereby certify that this correspondence is being
Forwarded to Fax No. 571-273-8300 and addressed
to the Commissioner for Patents, MAIL STOP
AMENDMENT, Alexandria, VA 22313-1450 on
September 6, 2005.

Kathy Tissue
By: Kathy Tissue

RECEIVED
CENTRAL FAX CENTER

SEP 06 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:)	
)	
Applicants: March Adam Bachman)	Examiner: NGUYEN, Tung X.
)	
Serial No.: 10/953,291)	Group Art Unit: 2829
)	
Filed: 09/29/2004)	Confirmation No.: 2052
)	
Title: Method and Structures for Testing))	Atty. Docket No.: Bachman
A Semiconductor Wafer Prior to))	3-11- 16-173
Performing a Flip Chip Bumping))	
Process))	

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

REPLY/RESPONSE UNDER CFR 1.111

This Reply is in response to the Office Action dated as mailed June 29,
2005 and having a response due date of September 29, 2005.

Please amend the above-identified application as follows:

Amendments to Claims are reflected in the listing of claims which begins
on page 2 of this paper.

Remarks/Arguments begin on page 4 of this paper.

U.S. Serial No. 10/953,291
Amendment dated 09/06/2005
Reply to Office Action of 06/29/2005

Bachman 3-11-16-173

IN THE CLAIMS:

WHAT IS CLAIMED IS:

1. (Original) An interface assembly for a semiconductor wafer, said interface assembly comprising:

a flip chip bonding pad including a region for performing a bumping process; and

a test pad integrally constructed with said bonding pad, said test pad being co-planar relative to said flip chip bonding pad and including a probe region for performing wafer-level testing prior to performing said bumping process.

2. (Original) The interface assembly of claim 1 wherein said test pad may be disposed anywhere along a periphery of said bonding pad.

3. (Original) The interface assembly of claim 1 wherein said bonding pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.

4. (Original) The interface assembly of claim 1 wherein said test pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.

5. (Original) The interface assembly of claim 1 further comprising a first metal redistribution layer electrically connected to said bonding and test pads, and being co-planar with one another.

6. (Original) The interface assembly of claim 5 wherein said first metal redistribution layer is electrically connected by way of a via to a second

U.S. Serial No. 10/953,291
Amendment dated 09/06/2005
Reply to Office Action of 06/29/2005

Bachman 3-11-16-173

redistribution layer being disposed in a different plane than the first redistribution layer.

7. (Original) The interface assembly of claim 1 wherein the region to be bumped is defined by a first opening in a passivation layer.

8. (Original) The interface assembly of claim 7 wherein the probe region is defined by a second opening in said passivation layer, said first and second openings being spaced apart from one another.

9. (Original) A method for testing a semiconductor wafer prior to performing a flip chip bumping process, said method comprising:

providing a flip chip bonding pad having a region for performing said bumping process;

integrally constructing a test pad with said bonding pad; and

disposing said test pad coplanar with said flip chip bonding pad, said test pad including a probe region for performing a wafer test prior to performing said bumping process.

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Amendment dated 09/06/2005
Reply to Office Action of 06/29/2005

Bachman 3-11-16-173

REMARKS/ARGUMENTS

Applicant is appreciative of the Examiner's efforts in trying to conduct a concise and thorough examination of the present invention.

Claims 1-5, and 7-9, stand rejected as being anticipated by publication No. US 2003/0094966 (hereinafter Fang). Applicant appreciates the recognition of allowable subject matter in claim 6, which presently stands objected to. Reconsideration of the rejections and objections is solicited in view of the foregoing amendment and the following remarks.

Regarding any rejection under §102, it is noted that the test for anticipation is whether all the elements and operational relationships of the rejected claim are found within a single prior art reference. There must not be any differences between the claimed invention and the reference disclosure as viewed by a person of ordinary skill in the art. Absent from the reference disclosure of any claim element and/or operational interrelationship negates anticipation under §102.

Claim 1 is directed to an interface assembly for a semiconductor wafer. The interface assembly comprises a flip chip bonding pad including a region for performing a bumping process. The interface assembly further comprises a test pad integrally constructed with the bonding pad. The test pad is co-planar relative to the flip chip bonding pad and includes a probe region for performing wafer-level testing prior to performing the bumping process.

Fang is directed to a method for testing electrical characteristics of bumps. (See Abstract of Fang). Accordingly, Fang describes bumps 34 and 35 electrically interconnected by metal traces 32 and 33 respectively. See paragraph 15 and FIG. 3 of Fang. The technique of Fang expressly recognizes that bumps are structures formed after a flip chip bumping process is performed. See Fang paragraph 8, line 5. This is wholly inapposite to the operational and/or structural relationships recited in claim 1 that specifically recites a flip chip bonding pad including a region for performing a bumping process (i.e., a precursor structure prior to a bumping process) and a probe region for performing wafer-level testing prior to performing the bumping process.

U.S. Serial No. 10/953,291
Amendment dated 09/06/2005
Reply to Office Action of 06/29/2005

Bachman 3-11-16-173

Fang is an example of a type of technique for probing a wafer after the bumping process has been performed. As applicant described in the specification section designated "Background of The Invention", this type of technique suffers from various drawbacks that are not applicable to the claimed invention. For example, the type of post-bumping probing technique (typified by Fang) may lead to incremental costs since there is a possibility that the bumping process (that takes valuable time and resources) may have been performed in an already defective wafer that should have been discarded prior to continuing with any such bump fabrication processes. On this basis alone it is felt that Fang fails to anticipate claim 1 under the §102 statutory requirements. Applicant, however, goes on to present below an alternative basis regarding the inability of Fang to anticipate claim 1.

Applicant notes that the bumps in Fang are not integrally constructed with one another. More particularly, such post-bumping structures require separate metal traces in order to be electrically interconnected to one another. By way of comparison, claim 1 recites a test pad integrally constructed with a bonding pad. In view of the integral construction, applicant advantageously avoids the need of metal traces for electrically interconnecting the test pad with the bonding pad. As applicant stated in the section of the specification designated "Background of the Invention", the presence of interconnect lines (as described by Fang) can introduce undesirable propagation delays to test signals.

In view of the foregoing remarks, it is respectfully submitted that Fang fails to anticipate or otherwise render obvious claim 1, and applicant kindly requests that this basis of rejection be removed.

Claims 2-5 and 7 depend from claim 1 and thus incorporate the structural and/or operational relationships set forth in claim 1 plus their own recitations. It is respectfully submitted that Fang also fails to anticipate such claims under the §102 statutory requirements and these rejections should be withdrawn.

Claim 9 is directed to a method for testing a semiconductor prior to performing a flip chip bumping process. Consequently, Fang (directed to post-bump testing) also

U.S. Serial No. 10/953,291
Amendment dated 09/06/2005
Reply to Office Action of 06/29/2005


Bachman 3-11-16-173

fails to anticipate this claim under the §102 statutory requirement and this rejection should also be withdrawn.

It is respectfully submitted that each of the claims pending in this application recites patentable subject matter and it is further submitted that such claims comply with all statutory requirements and thus each of such claims should be allowed.

The Examiner is invited to call the undersigned if clarification is needed on any aspects of this Reply/Amendment, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



Enrique J. Mora
Registration No. 36,875
Beusse Brownlee Wolter Mora & Maire, P.A.
390 N. Orange Avenue, Suite 2500
Orlando, FL 32801
Telephone: 407-926-7705
Fax: 407-926-7720

PATENT APPLICATION FEE DETERMINATION RECORD
Effective December 8, 2004

16953291

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS		
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	minus 20 = *	
INDEPENDENT CLAIMS	minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT		<input type="checkbox"/>

* 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	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	* 9	Minus ** 20	= -
Independent	* 2	Minus *** 3	= -
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			<input type="checkbox"/>

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus **	=
Independent	*	Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			<input type="checkbox"/>

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
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Independent	*	Minus ***	=
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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		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	

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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=	

Index of Claims



Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under Reexamination

BACHMAN ET AL.

Art Unit

2829

✓	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim	Final	Original	Date
1	✓	6/20/05	
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/953,291	09/29/2004	Mark Adam Bachman	Bachman 3-11-16-173	2052
29391	7590	06/29/2005	EXAMINER	
BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A. 390 NORTH ORANGE AVENUE SUITE 2500 ORLANDO, FL 32801			NGUYEN, TUNG X	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 06/29/2005

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

Office Action Summary

Application No.

10/953,291

Applicant(s)

BACHMAN ET AL.

Examiner

Tung X. Nguyen

Art Unit

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) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 29 September 2004.
- 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) 1-9 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) 1-5 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 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 29 September 2004 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-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/29/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 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 –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-5, 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fang (Pub.No. US 2003/0094966).

As to claims 1, 9, Fang discloses in Figs. 3, a device comprising a flip chip bonding pad (32 of figure 3) including a region for performing a bumping (34, 35 of figure 3); and a test pad (31 of figure 3) integrally constructed with the bonding pad (32), the test pad being co-planar relative to the flip chip bonding pad and including a probe region (via 31) for performing wafer-level testing prior to performing the bumping process (see the abstract, and col. 1, lines 15-19 of paragraph 15).

As to claim 2, Fang discloses in figs. 3, the test pad (31) may be disposed anywhere along a periphery of the bonding pad (32).

As to claim 3, Fang discloses in Figs. 3, the bonding pad comprises a shape from the group consisting of a polygonal shape, and circular shape (34).

As to claim 4, Fang discloses in Figs. 3, the test pad (31) comprises a shape from the group consisting of a polygonal shape, and circular shape (31).

As to claim 5, Fang discloses in Figs. 3, a first metal redistribution layer (32) electrically connected to the bonding and test pads, and being co-planar with one another (fig. 3).

As to claim 7, Fang discloses in Figs. 3, the region to be bumped is defined by a first opening in a passivation layer (34 connecting to 35 for testing).

As to claim 8, Fang discloses in Figs. 3, the probe region (31) is defined by a second opening in the passivation, the first and second openings being spaced apart from one another (fig. 3).

Allowable Subject Matter

3. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 6, the prior art does not teach or suggest the interface assembly wherein the first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

Conclusion

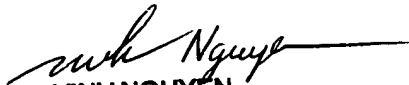
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Nguyen whose telephone number is (571) 272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

Art Unit: 2829

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (571) 272-2034. 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).

TN
6/20/05.


VINH NGUYEN
PRIMARY EXAMINER
A.U.-2829
06/22/05

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

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known	
				Application Number	Not Yet Assigned — 10/953291
				Filing Date	Simultaneously Herewith — 09/29/2004
				First Named Inventor	Mark Adam Bachman
				Art Unit	Not Yet Assigned — 2829
				Examiner Name	Not Yet Assigned — Nguyen, Tung
Sheet	1	of	2	Attorney Docket Number	Bachman 3-11-16-173

U.S. PATENT DOCUMENTS					
Examiner Initials ¹	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
TW	1	US-2004/0173794 A1	09-09-2004	Yu et al.	
		US-			
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FOREIGN PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner Signature		Date Considered	6/17/05
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¹EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ²Applicant's unique citation designation number (optional). ³See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ⁴Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁵For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁶Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁷Applicant is to place a check mark here if English Language Translation is attached.


This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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 (1-800-786-9199) and select option 2.

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

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete If Known	
		Application Number	Not Yet Assigned 10/95329/
		Filing Date	Simultaneously Herewith 09/29/2004
		First Named Inventor	Mark Adam Bachman
		Group Art Unit	Not Yet Assigned 2829
		Examiner Name	Not Yet Assigned Nguyen, T.
Sheet 2 of 2	Attorney Docket Number	Bachman 3-11-16-173	

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
M	1	LOIS YONG, TU ANH TRAN, STEPHEN LEE, BILL WILLIAMS and JODY ROSS, "Novel Method of Separating Probe and Wire Bond Regions Without Increasing Die Size," 2003 Electronic Components and Technology Conference, pp. 1323-1329.	

Examiner Signature		Date Considered	6/17/05
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¹EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

²Applicant's unique citation designation number (optional). ³Applicant is to place a check mark here if English Language Translation is attached. This collection of information is required by 37 CFR 1.98. 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 2 hours 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 (1-800-786-9199) and select option 2.

Notice of References Cited	Application/Control No. 10/953,291	Applicant(s)/Patent Under Reexamination BACHMAN ET AL.	
	Examiner Tung X. Nguyen	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-5,956,567 A	09-1999	Tomita, Yasuhiro	438/18
	B	US-2003/0094966 A1	05-2003	Fang, Jen-Kuang	324/765
	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					
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	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.



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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



Bib Data Sheet

CONFIRMATION NO. 2052

SERIAL NUMBER 10/953,291	FILING DATE 09/29/2004 RULE	CLASS 324	GROUP ART UNIT 2829	ATTORNEY DOCKET NO. Bachman 3-11-16-173
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APPLICANTS

Mark Adam Bachman, Sinking Spring, PA;

Daniel Patrick Chesire, Winter Garden, FL;

Taeho Kook, Orlando, FL; Sailesh M. Merchant, Macungie, PA;

** CONTINUING DATA ***** *No* *TV*** FOREIGN APPLICATIONS ***** *No* *TV*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

** 11/15/2004

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY PA	SHEETS DRAWING 2	TOTAL CLAIMS 9	INDEPENDENT CLAIMS 2
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged	Examiner's Signature <i>[Signature]</i>	Initials <i>TV</i>		

ADDRESS

29391

BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A.

390 NORTH ORANGE AVENUE

SUITE 2500

ORLANDO, FL

32801

TITLE

Method and structures for testing a semiconductor wafer prior to performing a flip chip bumping process

FILING FEE RECEIVED	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
		<input type="checkbox"/> 1.16 Fees (Filing)
		<input type="checkbox"/> 1.17 Fees (Processing Ext. of time)

Search Notes

Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under
Reexamination

BACHMAN ET AL.

Art Unit

2829

SEARCHED

Class	Subclass	Date	Examiner
324	754	6/17/2005	TN
	763		
	765		
	158.1		
438	18	6/17/2005	TN
257	48	6/17/2005	TN

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Consulted with Vinh Nguyen about field search	6/17/2005	TN
EAST search	6/17/2005	TN

Index of Claims



Application/Control No.

10/953,291

Examiner

Tung X. Nguyen

Applicant(s)/Patent under Reexamination

BACHMAN ET AL.

Art Unit

2829

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date											
Final	Original	6/20/05											
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CLAIMS ONLY							Application Number	Filing Date
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CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT			
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CLAIMS ONLY

Application Number

10953291

Filing Date

Applicant(s)

* May be used for additional claims or amendments

CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT							
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BIFW

PTO/SB/21 (09-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/953,291
Filing Date	09/29/2004
First Named Inventor	Mark Adam Bachman
Art Unit	2858
Examiner Name	Not Yet Assigned
Attorney Docket Number	Bachman 3-11-16-173

ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply (w/Attachment) <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input checked="" type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): 1. Postcard 2. Formalities Letter (Confirmation No. 2052) 3. Signed Declaration and POA (4 pgs.)
<div>Remarks</div>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Beusse Brownlee Wolter Mora & Maire, P.A.		
Signature			
Printed name	James H. Beusse		
Date	January 18, 2005	Reg. No.	27,115

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Grayce A. Lichtenberger	Date	January 18, 2005

This collection of information is required by 37 CFR 1.5. 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 2 hours 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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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

Fees effective on 12/08/2004.

FEE TRANSMITTAL

For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)**130.00****Complete if Known**

Application Number	10/953,291
Filing Date	09/29/2004
First Named Inventor	Mark Adam Bachman
Examiner Name	Not Assigned
Art Unit	2858
Attorney Docket No.	Bachman 3-11-16-173

METHOD OF PAYMENT (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☐ Deposit Account Deposit Account Number: _____ Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee
☐ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☐ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
_____ - 20 or HP = _____	x _____	= _____				
HP = highest number of total claims paid for, if greater than 20						
Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)			
_____ - 3 or HP = _____	x _____	= _____				
HP = highest number of independent claims paid for, if greater than 3						

3. APPLICATION SIZE FEE

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).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____ - 100 = _____	/ 50 = _____	(round up to a whole number) x _____	= _____	

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: **Surcharge-Late filing fee or oath or declaration****Fees Paid (\$)**
130.00**SUBMITTED BY**

Signature		Registration No. (Attorney/Agent)	27,115	Telephone	407-926-7701
Name (Print/Type)	James H. Beusse			Date	January 18, 2005

This collection of information is required by 37 CFR 1.136. 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 30 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.



Bachman 3-11-16-173

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)

Applicants: Mark Adam Bachman, et al.)

Examiner: Not Yet Assigned

Serial No.: 10/953,291)

Art Unit: 2858

Filed: 09/29/2004)

Confirmation No.: 2052

For: Method And Structures For Testing A)
Semiconductor Wafer Prior To)
Performing A Flip Chip Bumping)
Process)

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**RESPONSE TO NOTICE TO FILE MISSING PARTS
OF NONPROVISIONAL APPLICATION
(FILING DATE GRANTED)**

In response to the Notice To File Missing Parts Of Nonprovisional Application, Filing Date Granted, dated as mailed November 17, 2004 and having a period of response to and including January 18, 2004 (given that January 17, 2005 was a National Holiday), enclosed are the following items required for filing in the above-referenced U.S. Patent Application:

1. Formalities Letter (Confirmation No. 2052);
2. The \$130.00 Surcharge is being paid by enclosed check; and
3. Signed Declaration and Power of Attorney (4 pages).

Respectfully submitted,



James H. Beusse

Reg. No. 27,115

Beusse, Brownlee, Wolter, Mora & Maire, P.A.

390 N. Orange Avenue, Suite 2500

Orlando, FL 32801

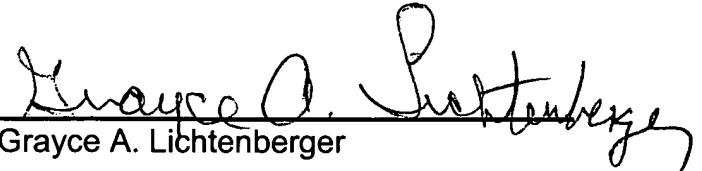
Phone: (407) 926-7701



Bachman 3-11-16-173

CERTIFICATE OF MAILING

I HEREBY CERTIFY that this Response To Notice to File Missing Parts of NonProvisional Application Filing Date Granted is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 18th day of January, 2005.


Grayce A. Lichtenberger



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 NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/953,291	09/29/2004	Mark Adam Bachman	Bachman 3-11-16-173

CONFIRMATION NO. 2052

FORMALITIES LETTER



OC000000014374716

29391
 BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A.
 390 NORTH ORANGE AVENUE
 SUITE 2500
 ORLANDO, FL 32801

Date Mailed: 11/17/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted***Items Required To Avoid Abandonment:**

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$130** for a Large Entity

- \$130** Late oath or declaration Surcharge.

Replies should be mailed to: Mail Stop Missing Parts
 Commissioner for Patents
 P.O. Box 1450
 Alexandria VA 22313-1450

00000076 10953291 130.00 OP
 01/24/2005 ANAD31 01 FC:1051

*A copy of this notice **MUST** be returned with the reply.*

DSH

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE





IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Declaration and Power of Attorney

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our name.

We believe we are the original, first and sole inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS**, the specification of which *was filed on September 29, 2004, as application Serial No. 10/953,291.*

We hereby state that we have reviewed and understand the contents of the above identified specification, including the claims, as amended by an amendment, if any, specifically referred to in this oath or declaration.

We acknowledge the duty to disclose all information known to us which is material to patentability as defined in Title 37, Code of Federal Regulations, 1.56.

We hereby claim foreign priority benefits under Title 35, United States Code, 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

None

We hereby claim the benefit under Title 35, United States Code, 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

None

We hereby declare that all statements made herein of our 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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

We hereby appoint the registered practitioners associated with Customer Number **29391** to prosecute said application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office.

Full name of sole inventor (or 1st joint inventor):

MARK ADAM BACHMAN

Inventor's
signature

Mark Adam Bachman

Date 12/15/2004

Residence:

**3 Esther Circle
Sinking Spring, PA 19608**

Citizenship:

USA

Post Office Address:

**3 Esther Circle
Sinking Spring, PA 19608**

Full name of 2nd joint inventor: **PATRICK DANIEL CHESIRE**

Inventor's
signature

Date

Residence:

**2018 Wintermere Pointe Drive
Winter Garden, FL 34787**

Citizenship:

USA

Post Office Address:

**2018 Wintermere Pointe Drive
Winter Garden, FL 34787**

We hereby appoint the registered practitioners associated with Customer Number **49382** to prosecute said application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office.

Full name of sole inventor (or 1st joint inventor):

MARK ADAM BACHMAN

Inventor's
signature _____ Date _____

Residence: **3 Esther Circle
Sinking Spring, PA 19608**

Citizenship: **USA**

Post Office Address: **3 Esther Circle
Sinking Spring, PA 19608**

Full name of 2nd joint inventor: **DANIEL PATRICK CHESIRE**

Inventor's
signature *Daniel P. Chesire* Date *12-14-2004*

Residence: **2018 Wintermere Pointe Drive
Winter Garden, FL 34787**

Citizenship: **USA**

Post Office Address: **2018 Wintermere Pointe Drive
Winter Garden, FL 34787**

4

Full name of 3rd joint inventor: **TAEHO KOOK**


Inventor's signature  Date Dec. 17, 2004

Residence: **9253 Wickham Way
Orlando, FL 32836**

Citizenship: ~~KOREA~~ **USA** ^{T.K.}

Post Office Address: **9253 Wickham Way
Orlando, FL 32836**

Full name of 3rd joint inventor: **SAILESH M. MERCHANT**

Inventor's signature  Date 12 Dec '04

Residence: **7156 Moonbeam Lane
Macungie, PA 18062**

Citizenship: **USA**

Post Office Address: **7156 Moonbeam Lane
Macungie, PA 18062**

Telephone calls should be made to **JAMES H. BEUSSE** at:

Phone No.: 407-926-7701

Fax No.: 407-926-7720

All written communications are to be addressed to:

**JAMES H. BEUSSE, ESQUIRE
BEUSSE BROWNLEE WOLTER MORA & MAIRE, P.A.
390 NORTH ORANGE AVENUE, SUITE 2500
ORLANDO, FL 32801**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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 Address: COMMISSIONER FOR PATENTS
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 Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/953,291	09/29/2004	Mark Adam Bachman	Bachman 3-11-16-173

29391

BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A.
 390 NORTH ORANGE AVENUE
 SUITE 2500
 ORLANDO, FL 32801

CONFIRMATION NO. 2052

FORMALITIES LETTER



OC000000014374716

Date Mailed: 11/17/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted***Items Required To Avoid Abandonment:**

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$130** for a Large Entity

- **\$130** Late oath or declaration Surcharge.

Replies should be mailed to: Mail Stop Missing Parts
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 Alexandria VA 22313-1450

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DS/H

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

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UTILITY
PATENT APPLICATION
TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	Bachman 3-11-16-173
First Inventor	Mark Adam Bachman
Title	Method And Structures For Testing A Semiconductor Wafer Prior To Performing A Flip Chip Bumping Process
Express Mail Label No.	EO 002 729 826 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

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

1. ☒ **Fee Transmittal Form (e.g., PTO/SB/17)**
(Submit an original and a duplicate for fee processing)
2. ☐ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 8]
(preferred arrangement set forth below)
- Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ **Drawing(s) (35 U.S.C. 113)** [Total Sheets 2]
5. **Order or Declaration** [Total Sheets]
- a. ☐ **Newly executed (original or copy)**
- b. ☐ **Copy from a prior application (37 CFR 1.63(d))**
(for continuation/divisional with Box 18 completed)
- i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet. See 37 CFR 1.76**

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (*Appendix*)
8. Nucleotide and/or Amino Acid Sequence Submission (*if applicable, all necessary*)
- a. ☐ Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies); or
- ii. ☐ Paper
- c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☒ Information Disclosure ☒ Copies of IDS
Statement (IDS)/PTO-1449 Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122
(b)(2)(B)(i). Applicant must attach form PTO/SB/35
or its equivalent.
17. ☒ Other:

Certificate of Express Mailing

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.:

Prior application information:

Examiner

Art Unit:

For CONTINUATION OR DIVISIONAL APPS only; The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

<input checked="" type="checkbox"/> Customer Number:	29391	OR <input type="checkbox"/> Correspondence address below
--	-------	--

Name _____

Address

City

State

Zip Code

Country

Telephone

Fax

Name (Print/Type)

James H. Beusse

Registration No. (Attorney/Agent)

27.115

Signature

Date

Sept. 29, 2004

This collection of information is required by 37 CFR 1.33(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 1.14. 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.

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.

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 770.00

Complete if Known

Application Number	Not Yet Known
Filing Date	Simultaneously Herewith
First Named Inventor	Mark Adam Bachman
Examiner Name	Not Yet Assigned
Art Unit	Not Yet Assigned
Attorney Docket No.	Bachman 3-11-16-173

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

Deposit
Account
Number
Deposit
Account
Name

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	770.00
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 770.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
9	-20** = 0	18.00	0.00
Independent Claims	-3** = 0	86.00	0.00
Multiple Dependent			

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	


Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 0.00

SUBMITTED BY

(Complete if applicable)

Name (Print/Type)	James H. Beusse	Registration No. (Attorney/Agent)	27,115	Telephone	(407) 926-7715
Signature		Date	September 29, 2004		

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. 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.

Microchip et al. Ex. 1002-129

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Applicants: Mark Adam Bachman, et al.)
)
Application No.: Not Yet Assigned)
)
Filed: Simultaneously Herewith)
)
For: Method And Structures For Testing A)
Semiconductor Wafer Prior To)
Performing A Flip Chip Bumping)
Process)
_____)

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

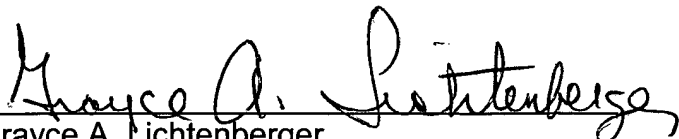
Sir:

EXPRESS MAIL # EO 002 729 826 US

Date of Deposit: September 29, 2004

I hereby certify that the attached Utility Patent Application, transmittal forms, Information Disclosure Statement and Drawings were deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Respectfully submitted,


Grayce A. Lichtenberger
Beusse, Brownlee, Wolter, Mora & Maire, P.A.
390 North Orange Avenue
Suite 2500
Orlando, Florida 32801
Telephone: (407) 926-7715

METHOD AND STRUCTURES FOR TESTING A SEMICONDUCTOR WAFER PRIOR TO PERFORMING A FLIP CHIP BUMPING PROCESS

FIELD OF THE INVENTION

[001] The present invention is generally related to semiconductor devices, and, more particularly, to structures and techniques for enabling wafer level testing prior to performing a bumping process in a flip chip assembly.

BACKGROUND OF THE INVENTION

[002] By way of background, flip chip microelectronic assembly generally refers to a direct electrical connection of face-down (hence, "flipped") electronic components onto substrates, circuit boards, or carriers, by means of conductive bumps on the chip bond pads. By way of comparison, wire bonding technology generally uses face-up chips with a wire connection to each pad. Flip chip technology has *inter alia* enabled substantial input/output (I/O) connection flexibility. For example, wire bond connections are generally limited to the perimeter of the die, driving die sizes up as the number of connections increase. Flip chip connections, such as area array bumps, can use the entire area of the die, accommodating many more connections on a smaller die.

[003] FIG. 1 is a top view schematic representation of a metal bonding pad 8 (e.g., Al or Cu bonding pad) of a semiconductor device that includes a bump region 10 over the metal bonding pad 8. FIG. 1 is provided for illustrating some of the difficulties encountered in the prior art. The bump region 10 --where a bumping process is to be performed for constructing an electrically conductive bump (e.g., a solder bump) for the flip chip assembly -- may be defined by a passivation opening 12 in a passivation layer that surrounds the bonding pad.

[004] It is known that for a semiconductor device that uses flip chip technology, performing wafer-level testing through the metal bonding pad to verify circuit functionality is generally not desirable prior to performing the bumping process. For example, a test probe tip that may be placed in contact with the bonding pad

may gouge the metal pad surface. The resulting surface irregularities on the bump pad can lead to difficulties in establishing and maintaining strong adhesion for one or more metal layers that may be deposited during the formation of the bump. For example, prior to bump formation, a process referred to as under bump metallization (UBM) allows the fabrication of a barrier metal to prevent interaction of the metal pad with the solder bump. The UBM structure comprises an "adhesion layer" that should adhere well to both the bond pad metal and the surrounding passivation layer in order to provide a strong, low-stress electromechanical connection. Similarly, a "diffusion barrier" layer may be deposited to limit the diffusion of solder into the underlying material.

[005] Known attempts to address the foregoing issues have involved construction of peripheral test pads that are physically separate but electrically connected to the bonding pad by way of interconnect lines. Such structures are commonly referred to as "redistribution layers (RDL)" in the industry. It has been observed that such RDL interconnect lines can introduce undesirable propagation delays to test signals and such delays can lead to lower device speeds. In the case of copper bonding pads, the use of an aluminum-alloy RDL at the uppermost level can lead to additional costs as the fabrication of the aluminum RDL requires additional processing steps of deposition, pattern and etch. Moreover, use of aluminum RDLs may lead to lower device yield as increased processing steps increase the probability of undesirable particles, thus limiting yield.

[006] One approach proposed for wire bond connections, and hence of little practical use for semiconductors involving flip chip connections, is described in IEEE publication titled "Electronic Components and Technology Conference", at page Nos. 1323-1329, May 2003 in paper by Lois Young et al. This approach generally requires stacking at least two physically different metal pads over one another in order to form a probe region that is separate from a wire bond region. More specifically, this proposed approach requires stacking a portion of an enlarged aluminum cap over a copper pad disposed beneath the aluminum cap. A remaining portion of the enlarged aluminum cap (e.g., where the probe region

is located) is disposed over a dielectric material and this arrangement may lead to cracks in the dielectric since the probe can apply a high force over the probe region. Moreover, the specific requirement of an Al "capping pad" over a copper pad is not a mere design choice since performing wire bonding to copper is generally very difficult for a production environment involving wire bond connections. No such considerations are applicable for flip chip connections.

[007] Another known attempt has involved probing wafers after the bumping process is performed. For different considerations, this attempt also fails to provide a fully satisfactory solution. For example, this post-bumping probing technique may lead to incremental costs since there is a possibility that the bumping process (that takes valuable time and resources) may have been performed in an already defective wafer that should have been discarded prior to continuing with any such bump fabrication processes. Moreover, one may not be able to identify mis-processing steps that can occur during the bumping process itself, unless diagnostic partitioning studies are performed on the wafer.

[008] Accordingly, it would be desirable to provide structures and techniques for allowing a semiconductor device or wafer to be tested prior to a bumping process so that wafer level tests can be undertaken without compromising the integrity of the metal bonding pads therein and without introducing delays to signals used for test purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

[009] These and other advantages of the invention will be more apparent from the following description in view of the drawings that show:

[010] FIG. 1 is a top view schematic representation of a prior art metal flip chip bonding pad that has a common region for bumping and probing a semiconductor wafer.

[011] FIG. 2 is a top view of an exemplary flip chip interface assembly embodying aspects of the present invention.

[012] FIGS. 3 and 4 illustrate respective exemplary arrangements for the bonding pad and/or a test pad integrally constructed with the bonding pad.

[013] FIG. 5 illustrates an exemplary embodiment where an interface assembly embodying aspects of the present invention may be used in combination with one or more metal redistribution layers.

DETAILED DESCRIPTION OF THE INVENTION

[014] FIG. 2 is a top view of an exemplary flip chip interface assembly 20 embodying aspects of the present invention. More particularly, FIG. 2 illustrates a conductive test pad 22 integrally constructed with a conductive bonding pad 24. This arrangement provides at least the following advantages: conductive test pad 22 provides a respective probe region 26 where a probe tip may be placed for performing, for example, wafer level testing. The bonding pad 24 includes a bump region 28 that is no longer subject to mechanical contact with the probe tip and resulting surface irregularities. It is envisioned that since the test pad and bonding pad comprise an integral structure that no longer requires interconnect lines and avoids or substantially reduces propagation delays in test signals passing therethrough, an interface assembly embodying aspects of the present invention should lead to more reliable and accurate test results.

[015] FIG. 2 further shows individual passivation openings 30 and 32 for probe region 26 and bump region 28, respectively. It will be understood that the shape of the metal bonding pad 24 is not limited to a polygonal shape being that any other geometrical shape may be used equally effective for the metal bonding pad. For example, FIG. 4 illustrates an exemplary circular shape for a metal bonding pad 44.

[016] Similarly, the shape of test pad 22 is not limited to a square shape since other geometrical shapes, e.g., rectangular, triangular, etc., may work equally effective. Also, the positioning of the test pad 22 relative to the bonding pad 24 is not limited to any specific orientation. For example, FIG. 2 shows an exemplary arrangement where the test pad 22 is positioned at a six o'clock position while FIG. 3 shows another exemplary arrangement where the test pad 22 is positioned at a three o'clock position. Thus, it will be appreciated that the test

pad may be integrally constructed anywhere along the periphery of the bonding pad.

[017] FIG. 5 illustrates an exemplary embodiment where an interface assembly 50 embodying aspects of the present invention may be used in combination with one or more metal redistribution layers, such as metal redistribution layers 52 and 54, for interconnecting the metal bonding pad 24 to, for example, metal runners or interconnect lines, or other pads, either directly or through vias, such as via 56. In one exemplary embodiment, metal redistribution layer 52 may be co-planar with bonding pad 24 and test pad 22, and metal redistribution layer 54, which is electrically connected to metal redistribution layer 52 by way of via 56, may be positioned at a different level relative to bonding pad 24 and test pad 22. It will be appreciated that these redistribution layers 52 and 54 may be used to connect the bonding pad to other areas of the chip, not necessarily to peripheral bond pads, as is practiced in the prior art and described earlier.

[018] While the preferred embodiments of the present invention have been shown and described herein, it will be obvious that such embodiments are provided by way of example only. Numerous variations, changes and substitutions will occur to those of skill in the art without departing from the invention herein. Accordingly, it is intended that the invention be limited only by the spirit and scope of the appended claims.

CLAIMS

WE CLAIM AS OUR INVENTION:

1. An interface assembly for a semiconductor wafer, said interface assembly comprising:
 - a flip chip bonding pad including a region for performing a bumping process; and
 - a test pad integrally constructed with said bonding pad, said test pad being co-planar relative to said flip chip bonding pad and including a probe region for performing wafer-level testing prior to performing said bumping process.
2. The interface assembly of claim 1 wherein said test pad may be disposed anywhere along a periphery of said bonding pad.
3. The interface assembly of claim 1 wherein said bonding pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.
4. The interface assembly of claim 1 wherein said test pad comprises a shape selected from the group consisting of a polygonal shape, and a circular shape.
5. The interface assembly of claim 1 further comprising a first metal redistribution layer electrically connected to said bonding and test pads, and being co-planar with one another.
6. The interface assembly of claim 5 wherein said first metal redistribution layer is electrically connected by way of a via to a second redistribution layer being disposed in a different plane than the first redistribution layer.

7. The interface assembly of claim 1 wherein the region to be bumped is defined by a first opening in a passivation layer.

8. The interface assembly of claim 7 wherein the probe region is defined by a second opening in said passivation layer, said first and second openings being spaced apart from one another.

9. A method for testing a semiconductor wafer prior to performing a flip chip bumping process, said method comprising:

providing a flip chip bonding pad having a region for performing said bumping process;

integrally constructing a test pad with said bonding pad; and

disposing said test pad coplanar with said flip chip bonding pad, said test pad including a probe region for performing a wafer test prior to performing said bumping process.

ABSTRACT

An interface assembly (20) and method for testing a semiconductor wafer prior to performing a flip chip bumping process are provided. The interface assembly includes a flip chip bonding pad (24) having a region (28) for performing the bumping process. A test pad (22) is integrally constructed with the bonding pad and includes a probe region (26) for performing wafer-level testing prior to performing the bumping process. The integral construction of the bonding and testing pads avoids, for example, an introduction of propagation delays to test signals passing therethrough, thereby improving the accuracy and reliability of wafer test results.

1/2

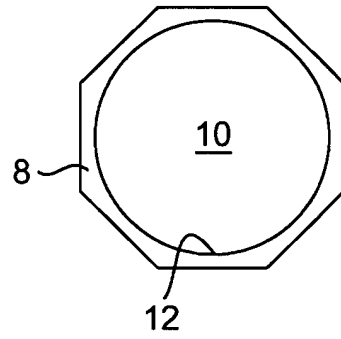


FIG. 1
(PRIOR ART)

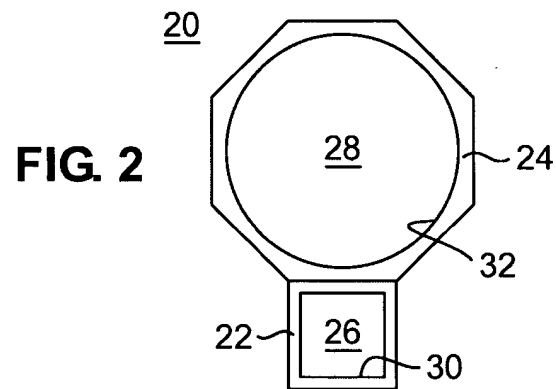


FIG. 2

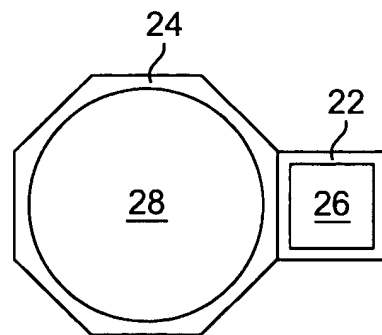


FIG. 3

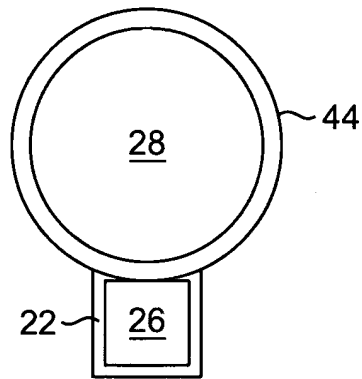


FIG. 4

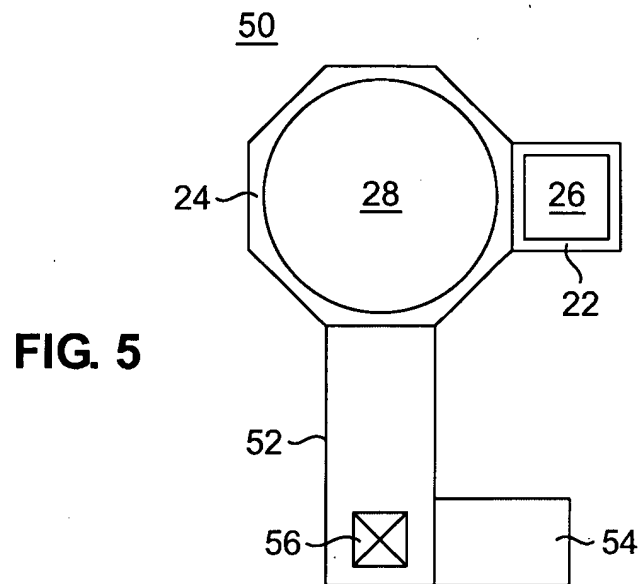


FIG. 5

PATENT APPLICATION SERIAL NO. _____

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

10/04/2004 HALI11 00000001 10953291

01 FC:1001

770.00 DP

PTO-1556
(5/87)

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2003

Application or Docket Number

10953291

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

TOTAL CLAIMS	9	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	9 minus 20 =	-
INDEPENDENT CLAIMS	2 minus 3 =	✓
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

* 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
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	Independent	•	Minus	•••	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
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	Independent	•	Minus	•••	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
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	Independent	•	Minus	•••	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					

* 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	385.00
XS 9=	
X43=	
+145=	
TOTAL	

RATE	FEE
BASIC FEE	770.00
XS18=	
X86=	
+290=	
TOTAL	770.

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS 9=	
X43=	
+145=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
XS18=	
X86=	
+290=	
TOTAL ADDIT. FEE	

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				Application Number	Not Yet Assigned
				Filing Date	Simultaneously Herewith
				First Named Inventor	Mark Adam Bachman
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	1	of	2	Attorney Docket Number	Bachman 3-11-16-173

[illegible]

FOREIGN PATENT DOCUMENTS						
Examiner Initials [*]	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

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This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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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				First Named Inventor	Mark Adam Bachman
				Group Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	2	of	2	Attorney Docket Number	Bachman 3-11-16-173

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	1	LOIS YONG, TU ANH TRAN, STEPHEN LEE, BILL WILLIAMS and JODY ROSS, "Novel Method of Separating Probe and Wire Bond Regions Without Increasing Die Size," 2003 Electronic Components and Technology Conference, pp. 1323-1329.	

Examiner Signature		Date Considered	
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