PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3379341

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------|----------------|
| STEVEN R. LANGE | 11/19/2013 |

RECEIVING PARTY DATA

| Name: | KLA-TENCOR CORPORATION |
|-----------------|------------------------|
| Street Address: | ONE TECHNOLOGY DRIVE |
| City: | MILPITAS |
| State/Country: | CALIFORNIA |
| Postal Code: | 95035 |

PROPERTY NUMBERS Total: 1

| Property Type | Number | |
|---------------------|----------|--|
| Application Number: | 14728938 | |

CORRESPONDENCE DATA

Fax Number: (408)228-3739

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 510-900-9501

Email:docket@KWANIP.COMCorrespondent Name:KWAN & OLYNICK LLP

Address Line 1: 2000 HEARST AVENUE, SUITE 305
Address Line 4: BERKELEY, CALIFORNIA 94709

| ATTORNEY DOCKET NUMBER: | KLA1P220C1/P4011C1 |
|-------------------------|--------------------|
| NAME OF SUBMITTER: | AMBER LUNDY |
| SIGNATURE: | /Amber Lundy/ |
| DATE SIGNED: | 06/02/2015 |

Total Attachments: 2

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PATENT 503332723 REEL: 035770 FRAME: 0011

KLA1P220/P4011

ASSIGNMENT OF PATENT APPLICATION

Whereas I, an undersigned inventor, have invented certain new and useful improvements as set forth in the following patent applications:

| DETE | (1) the U.S. patent application entitled: APPARATUS AND METHODS FOR CTING DEFECTS IN VERTICAL MEMORY |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| | (Atty. Docket No. KLA1P220/P4011), (check one) |
| | for which I have executed a U.S. patent application on even date herewith. (Accompanying) which bears U.S. application No. 14/078,271. (Not accompanying) |

(2) the U.S. provisional application entitled: **SIMULTANEOUS MULTI-MODE DEFECT INSPECTION FOR 3D WAFERS**, which bears U.S. application No. <u>61/729,329</u>. (Not accompanying)

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, an undersigned inventor, hereby:

- 1) Sell, assign and transfer to KLA-Tencor Corporation, a Delaware corporation having a place of business at One Technology Drive, Milpitas, California 95035 ("ASSIGNEE"), the entire right, title and interest in any and all improvements and inventions disclosed in, applications based upon, and patents granted upon (including foreign patents and the right to claim priority), the above-referenced applications.
- 2) Authorize and request the Commissioner of Patents to issue any and all United States Patents resulting from said application or any division, continuation, substitute, renewal, re-examination or reissue thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon the inventor, as well as the inventor's heirs, legal representatives and assigns.
- 5) Warrant and represent that I have not entered and will not enter into any assignment, contract, or understanding that conflicts with this assignment.

Revised 06/01, Assign US or Foreign No Notary

Assignment of APPARATUS AND METHODS FOR DETECTING DEFECTS IN VERTICAL MEMORY by Steven R. Lange to KLA-Tencor Corporation

KLA1P220/P4011

| Sign | ed on the date indicated be | eside my signature. | | |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------|----------|
| 1) | Signature; Z Typed Name: Sieven R. | Lange | Date: | 11/19/13 |
| Pleas | se have two witnesses sign | | | |
| 1) | Signature: 2014 Printed Name: 2017 | LUSTIN - | Date: | 1/19/13 |
| 2) | Signature: Printed Name: \(\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\(\text{\exit\exit\exit\exit\exit\exit\exit\exit | Zhao - | Date: | 14/19/13 |

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PATENT REEL: 035770 FRAME: 0013