KIRKLAND & ELLIS LLP
Adam R. Alper (SBN 196834)
adam.alper@kirkland.com
Akshay S. Deoras (SBN 301962)
akshay.deoras@kirkland.com
555 California Street
San Francisco, CA 94104
Telephone: (415) 439-1400

Michael W. De Vries (SBN 211001)
michael.devries@kirkland.com
555 South Flower Street, Suite 3700
Los Angeles, CA 90071
Telephone: (213) 680-8400

Sharre Lotfollahi (SBN 258913)
sharre.lotfollahi@kirkland.com
2049 Century Park East
Los Angeles, CA 90067
Telephone: (310) 552-4200

Leslie Schmidt (admitted *pro hac vice*)
leslie.schmidt@kirkland.com
601 Lexington Ave.
New York, NY 10022
Telephone: (212) 446-4800

Kat Li (admitted *pro hac vice)*
kat.li@kirkland.com
401 Congress Ave.
Austin, TX 78701
Telephone: (512) 678-9100

Attorneys for Plaintiff
APPLIED MATERIALS, INC.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

APPLIED MATERIALS, INC.,

Plaintiff,

vs.

DEMARAY LLC,

Defendant.

CASE NO. 5:20-cv-09341-EJD

APPLIED MATERIALS, INC.'S ANSWER, AFFIRMATIVE DEFENSES AND COUNTERCLAIMS TO COUNTERCLAIMS OF DEMARAY LLC

PUBLIC – REDACTED VERSION

Honorable Edward J. Davila

APPLIED MATERIAL'S ANSWER, AFFIRMATIVE DEFENSES AND COUNTERCLAIMS TO COUNTERCLAIMS OF DEMARAY LLC

Plaintiff and Counterclaim Defendant Applied Materials, Inc. ("Applied Materials") files this Answer, Affirmative Defenses and Counterclaims to Demaray LLC's ("Demaray") Counterclaims to Complaint ("Demaray's Counterclaims"). Applied Materials denies all allegations in Demaray's Counterclaims unless expressly admitted. Any admissions herein are for purposes of this matter only. Applied Materials also reserves the right to take further positions and raise additional defenses that may become apparent as a result of additional information discovered subsequent to filing this Answer and Counterclaims. Applied Materials demands a jury trial on all issues and claims so triable.

ANSWER

1. Applied Materials admits Demaray's Counterclaims purport to set forth a civil action seeking a judgment of infringement of U.S. Patent Nos. 7,544,276 (the "'276 Patent") and 7,381,657 (the "'657 Patent") arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271, giving rise to remedies specified under 35 U.S.C. § 281 and 283-85. Applied Materials denies that there are factual or legal bases for Demaray's Counterclaims.

PARTIES

2. Applied Materials admits that Richard E. Demaray is listed as a named inventor on the face of the '276 and '657 Patents. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 2 of Demaray's Counterclaims, and therefore denies them.

3. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the allegations in Paragraph 3 of Demaray's Counterclaims, and therefore denies them.

4. Applied Materials denies that it uses Demaray's patented technology. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 4 of Demaray's Counterclaims, and therefore denies them.

5. Applied Materials admits that Demaray is a limited liability company organized and existing under the laws of the state of Delaware. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 5 of Demaray's Counterclaims, and therefore denies them.

6. Applied Materials admits that Exhibits 1 and 2 purport to be copies of the '276 and '657 patents, respectively. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 6 of Demaray's Counterclaims, and therefore denies them.

7. Admitted.

JURISDICTION AND VENUE

8. Applied Materials admits that Demaray's Counterclaims purport to set forth an action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*. Applied Materials denies that there are factual or legal bases for the claims listed in the Counterclaims. Applied Materials admits that this Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. For purposes of this action only, Applied Materials admits that it is subject to personal jurisdiction in this Court.

10. For purposes of this action only, Applied Materials admits that it is subject to personal jurisdiction in this Court, but denies the remaining allegations in Paragraph 10 of Demaray's Counterclaims.

11. Applied Materials admits that, for purposes of this action only, venue is proper, but denies the remaining allegations in Paragraph 11 of Demaray's Counterclaims.

TECHNOLOGY BACKGROUND

12. Applied Materials admits that semiconductor devices are generally manufactured using a series of process steps applied to a substrate, but denies the other allegations in Paragraph 12 of Demaray's Counterclaims.

13. Applied Materials admits that magnetron sputtering is one of many physical vapor deposition ("PVD") techniques, and admits that magnetron sputtering can be carried out in a reactor with power being applied to a target. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 13 of Demaray's Counterclaims, and therefore denies them.

14. Applied Materials admits the '276 patent states:

> Other approaches to providing a uniform condition of sputter erosion rely on creating a large uniform magnetic field or a scanning magnetic field that produces a time-averaged, uniform magnetic field. For example, rotating magnets or electromagnets can be utilized to provide wide areas of substantially uniform target erosion. For magnetically enhanced sputter deposition, a scanning magnet magnetron source can be used to provide a uniform, wide area condition of target erosion.
>
> As illustrated in FIG. 1A, apparatus 10 can include a scanning magnet magnetron source 20 positioned above target 12. An embodiment of a scanning magnetron source used for dc sputtering of metallic films is described in U.S. Pat. No. 5,855,744 to Halsey, et. al., (hereafter '744), which is incorporated herein by reference in its entirety. The '744 patent demonstrates the improvement in thickness uniformity that is achieved by reducing local target erosion due to magnetic effects in the sputtering of a wide area rectangular target. As described in the '744 patent, by reducing the magnetic field intensity at these positions, the local target erosion was decreased and the resulting film thickness nonuniformity was improved from 8%, to 4%, over a rectangular substrate of 400x500 mm.

'276 patent, 8:38-60. Applied Materials admits that the '276 patent also states: "Target 12 functions as a cathode when power is applied to it and is equivalently termed a cathode. Application of power to target 12 creates a plasma 53. Substrate 16 is capacitively coupled to an electrode 17 through an insulator 54." '276 patent, 5:24-27. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 14 of Demaray's Counterclaims, and therefore denies them.

15. Applied Materials admits that the '276 patent states:

> In accordance with the present invention, a sputtering reactor apparatus for depositing oxide and oxynitride films is presented. Further, methods for depositing oxide and oxynitride films for optical waveguide devices are also presented. A sputtering reactor according to the present invention includes a pulsed DC power supply coupled through a filter to a target and a substrate electrode coupled to an RF power supply. A substrate mounted on the substrate electrode is therefore supplied with a bias from the RF power supply.
>
> The target can be a metallic target made of a material to be deposited on the substrate. In some embodiments, the metallic target is formed from Al, Si and various rare-earth

> ions. A target with an erbium concentration, for example, can be utilized to deposit a film that can be formed into a waveguide optical amplifier.
>
> A substrate can be any material and, in some embodiments, is a silicon wafer. In some embodiments, RF power can be supplied to the wafer. In some embodiments, the wafer and the electrode can be separated by an insulating glass.
>
> In some embodiments, up to about 10 kW of pulsed DC power at a frequency of between about 40 kHz and 350 kHz and a reverse pulse time of up to about 5μs is supplied to the target. The wafer can be biased with up to about several hundred watts of RF power. The temperature of the substrate can be controlled to within about 10° C. and can vary from about -50° C. to several hundred degrees C. Process gasses can be fed into the reaction chamber of the reactor apparatus. In some embodiments, the process gasses can include combinations of Ar, N2, O2, C2F6, CO2, CO and other process gasses.

'276 patent, 2:45-3:7. Applied Materials admits that the '276 patent also states: "However, both RF and pulsed DC deposited films are not fully dense and most likely have columnar structures. These columnar structures are detrimental for optical wave guide applications due to the scattering loss caused by the structure. By applying a RF bias on wafer 16 during deposition, the deposited film can be dandified by energetic ion bombardment and the columnar structure can be substantially eliminated." '276 patent, 5:60-67. Applied Materials lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 15 of Demaray's Counterclaims, and therefore denies them.

APPLIED MATERIALS' KNOWLEDGE OF THE ASSERTED PATENTS

16. Applied Materials admits that '657 patent was cited during the prosecution of U.S. Patent No. 8,894,827. Applied Materials admits it filed IPR2021-00103 and IPR2021-00105 against the '276 patent on October 23, 2020. Applied Materials admits it filed IPR2021-00104 and IPR2021-00106 against the '657 patent on October 23, 2020. Applied Materials denies the remaining allegations in Paragraph 16 of Demaray's Counterclaims.

COUNTERCLAIM I

17. Paragraph 17 of Demaray's Counterclaims does not contain an allegation of fact, and therefore, no answer is required. Applied Materials incorporates by reference each of the statements set forth above in Paragraphs 1-16.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.