UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

DEMARAY LLC, Plaintiff, v. SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., SAMSUNG SEMICONDUCTOR, INC., and SAMSUNG AUSTIN SEMICONDUCTOR, LLC, Defendants.	CASE NO. 6:20-cv-00636-ADA **JURY TRIAL DEMANDED**

SAMSUNG DEFENDANTS' ANSWER AND AFFIRMATIVE DEFENSES TO PLAINTIFF'S AMENDED COMPLAINT

Defendants Samsung Electronics Co., Ltd. ("SEC"), Samsung Electronics America, Inc. ("SEA"), Samsung Semiconductor, Inc. ("SSI"), and Samsung Austin Semiconductor, LLC ("SAS") (collectively "Samsung") responds to the Amended Complaint filed by Plaintiff Demaray LLC ("Plaintiff") and submits its Affirmative Defenses. To the extent not specifically admitted below, Samsung denies the allegations of the Amended Complaint.

ANSWER TO AMENDED COMPLAINT

I. Parties

1. Samsung admits that the face of U.S. Patent Nos. 7,544,276 ("the '276 patent") and 7,381,657 ("the '657 patent") (collectively, the "Asserted Patents") list Richard E. Demaray as an inventor. Samsung lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 1 of the Amended Complaint, and therefore denies the same.

2. Samsung lacks knowledge or information sufficient to form a belief as to the truth of the allegations in Paragraph 2 of the Amended Complaint, and therefore denies the same.

3. Samsung denies that it uses any of Plaintiff's patented technology. Samsung lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 3 of the Amended Complaint, and therefore denies the same.

4. Samsung lacks knowledge or information sufficient to form a belief as to the truth of the allegations in Paragraph 4 of the Amended Complaint, and therefore denies the same.

5. Samsung admits that the Amended Complaint purports to attach uncertified copies of the '276 patent and the '657 patent, as Exhibit 1 and Exhibit 2 respectively. Samsung lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in Paragraph 5 of the Amended Complaint, and therefore denies the same.

6. Samsung admits that Samsung Electronics America ("SEA") is a corporation duly organized and existing under the laws of the State of New York. Samsung further admits that SEA may be served with process through its registered agent CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, TX 75201-3136. The remainder of this paragraph sets out a legal conclusion to which no response is necessary. To the extent a response is required as to the remaining allegations in Paragraph 6 of the Complaint, Samsung denies the same.

7. Samsung admits that Samsung Electronics is a company duly organized and existing under the laws of the Republic of Korea with its principal offices at 129 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea. The remainder of this paragraph sets out a legal conclusion to which no response is necessary. To the extent a response is required as to the remaining allegations in Paragraph 7 of the Amended Complaint, Samsung denies the same.

8. Samsung admits that Samsung Semiconductor is a corporation organized and existing under the laws of the State of California, and is located at 3655 North First Street, San Jose, California 95134. Samsung admits that Samsung Semiconductor is a wholly-owned subsidiary of SEA. Samsung admits that Samsung Semiconductor may be served with process through its registered agent National Registered Agents, Inc., 1999 Bryan St., St. 900, Dallas, TX 75201-3136.

9. Samsung admits that Samsung Austin Semiconductor is a limited liability company organized and existing under the laws of the State of Delaware, and is located at 12100 Samsung Boulevard, Austin, Texas 75754. Samsung admits that Samsung Austin Semiconductor is a wholly-owned subsidiary of Samsung Semiconductor. Samsung admits that Samsung Austin Semiconductor operates a semiconductor fabrication plant known as the "S2- Line" in Austin, Texas. Samsung admits that Samsung Austin Semiconductor may be served with process through its registered agent CT Corporation System, 1999 Bryan St., Ste. 900, Dallas, TX 75201-3136. Samsung denies the remaining allegations of Paragraph 9 of the Amended Complaint.

II. Jurisdiction and Venue

10. Samsung admits that the Amended Complaint purports to set forth an action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*., but denies that there are any factual or legal bases for Plaintiff's claims. Samsung admits that this Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

11. Solely for the limited purpose of this action only, Samsung admits that it is subject to personal jurisdiction in this District.

12. Solely for the limited purpose of this action only, Samsung admits that it is subject to personal jurisdiction in this District, but denies the remaining allegations in Paragraph 12 of the Amended Complaint.

13. No answer is required as to the allegations in Paragraph 13 of the Amended Complaint asserting that "[v]enue in this District is proper," which are merely conclusions of law. To the extent that any answer is required, Samsung denies infringement of any of the Asserted Patents and denies that the Western District of Texas is the most convenient venue to resolve this action. Samsung admits that it has and is continuing to do business in the United States, including in the Western District of Texas.

III. Technology Background

14. Samsung admits that semiconductor devices are generally manufactured using a series of process steps applied to a substrate, but denies the remaining allegations in Paragraph 14 of the Amended Complaint.

15. Samsung admits that magnetron sputtering is one of many physical vapor deposition ("PVD") techniques. As to the remaining allegations of Paragraph 15, Samsung admits that certain terms set forth in these allegations are used in the semiconductor industry, but these allegations are otherwise too general, therefore Samsung denies the same.

16. Samsung admits that the '276 patent states at Column 8, lines 38-60:

> Other approaches to providing a uniform condition of sputtering 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 400×500 mm.

Samsung admits that the '276 patent states at Column 5, lines 24-27, "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." Samsung lacks knowledge or information sufficient to form a belief as to the truth of the remaining allegations in paragraph 16 of the Amended Complaint, and therefore denies the same.

17. Samsung admits that the '276 patent states at Column 2, line 45 to Column 3, line 37:

> 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 5 μs 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, O_2, C_2F_6, CO_2, CO and other process gasses.

Samsung also admits that the '276 patent states at Column 5, lines 60-67 that "However, both RF and pulsed DC deposited films are not fully dense and most likely have columnar

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