UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD., TSMC NORTH AMERICA CORP., FUJITSU SEMICONDUCTOR LIMITED, FUJITSU SEMICONDUCTOR AMERICA, INC., THE GILETTE COMPANY, ADVANCED MICRO DEVICES, INC., RENESAS ELECTRONICS CORPORATION, RENESAS ELECTRONICS AMERICA, INC., GLOBALFOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN MODULE ONE LLC & CO. KG, GLOBALFOUNDRIES DRESDEN MODULE TWO LLC & CO. KG, TOSHIBA AMERICA ELECTRONIC COMPONENTS, INC., TOSHIBA AMERICA INC., TOSHIBA AMERICA INFORMATION SYSTEMS, INC., and TOSHIBA CORPORATION

Petitioners

v.

ZOND, LLC
Patent Owner

Case IPR2014-00827[1]
Patent 6,853,142

ZOND LLC'S PATENT OWNER RESPONSE

[1] Cases IPR2014-00865, IPR2014-01015, and IPR2014-01063 have been joined with the instance proceeding.

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I. INTRODUCTION

The Petitioners' arguments hinge on fanciful misreadings of the prior art by their proffered expert, Dr. Uwe Kortshagen. As will be shown below, neither Wang nor Kudryavtsev teach "a cathode that is positioned adjacent to the anode and forming a gap there between" as required by independent claim 21 of the '142 patent. Once the Board recognizes that Dr. Kortshagen essentially invented some of the alleged "teachings" in Wang and Kudryavtsev to suit the Petitioners' objectives, the Board should agree to confirm the challenged claims.

The '142 patent discloses and illustrates in FIG. 2A a cathode 204 positioned adjacent to an anode 216 and a gap labeled 220 as an area formed between the cathode 204 and the anode 216.[2] The '142 patent requires the generation of a weakly-ionized plasma between this gap and the application of an electric field across the gap and the weakly-ionized plasma, which then creates a strongly-ionized plasma.[3] Importantly, this gap is ***not*** the area between the target cathode and the substrate, which is the traditional positioning of the plasma in a magnetron sputtering system and is not claimed

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[2] Exhibit 1301, '142 patent, FIG. 2A, col. 4, ll. 34-42.

[3] *Id.* at claim 21.

by the '142 patent. Wang does not teach the claimed gap. In fact, the only area disclosed in Wang in which any plasma is created is the traditional area between the target and substrate. Unlike the '142 patent, Wang contains no teaching for creating a plasma in the claimed gap.

In fact, both the Petitioners and their expert, Dr. Kortshagen, initially agreed that Wang does not teach the claimed gap. Petitioners admitted that Wang does not disclose the '142 claim limitations regarding a gap: "[i]n Wang, the cathode 14 and anode 24 are not positioned so as to form a gap, as shown in the '142 Patent."[4] Dr. Kortshagen took the position in his Declaration that one of ordinary skill in the art could have added and/or rearranged components in Wang's device to achieve the claimed invention of the '142 patent: "it would have been obvious to either add a separate anode electrode in Wang's chamber between the cathode and the grounded shield 24 and to position the separate anode electrode adjacent to the cathode or to move the grounded shield 24 so as to form a gap, as shown in the '142 Patent."[5]

Later at his deposition, however, Dr. Kortshagen did ***an about-face and took an entirely different position*** by stating that the traditional area between the

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[4] Petition, p. 40; Exhibit 1302, Kortshagen Declaration, ¶ 110.

[5] Exhibit 1302, Kortshagen Declaration, ¶ 110.

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