

Filed on behalf of The Petitioners  
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UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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The Gillette Company, Fujitsu Semiconductor Limited, and Fujitsu Semiconductor  
America, Inc.

Petitioners,

v.

Zond, Inc.

Patent Owner of U.S. Patent No. 6,896,775

Trial No. IPR2014-00578<sup>1</sup>

**PETITIONER'S RESPONSE TO PATENT OWNER'S MOTION FOR  
OBSERVATION ON CROSS-EXAMINATION OF PETITIONER'S REPLY  
WITNESS DR. JOHN C. BRAVMAN**

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<sup>1</sup> Case IPR2014-01494 has been joined with the instant proceeding.

**TABLE OF CONTENTS**

I. INTRODUCTION ..... 1

II. RESPONSES TO OBSERVATIONS ON DR. BRAVMAN'S  
TESTIMONY ..... 1

    A. Observation A..... 1

    B. Observation B..... 3

## I. INTRODUCTION

Petitioner submits this response to Patent Owner's Motion for Observation on Cross-Examination of Reply Witness Dr. John C. Bravman (Paper No. 50). Patent Owner presents two observations on Dr. Bravman's testimony. While Petitioner believes that the testimony will be appropriately viewed and weighed by the Board, the specific observations presented by Patent Owner misstate the testimony of Dr. Bravman, as specified below and therefore are not probative of any material issue before the Board.

## II. RESPONSES TO OBSERVATIONS ON DR. BRAVMAN'S TESTIMONY

### A. Observation A

Patent Owner contends that Dr. Bravman testified at his deposition that "Wang fails to teach a strongly-ionized plasma in an area adjacent to the surface of the *substrate*." Petitioner's Motion for Observation ("Observation") at 2-3, Paper No. 50, citing Bravman Tr. 45:4-12 (emphasis added), Ex. 2012. Patent Owner, however, mischaracterizes Dr. Bravman's testimony.

Dr. Bravman's answer was in response to Patent Owner's question about the plasma densities near the cathode and the *anode, not the substrate*.

Q: With the higher densities being near the cathode, and the lower densities being *near the anode*; is that correct?

A: The end goal is to have the high density near the cathode

target, yes.

Bravman Tr. 45:4-12, Ex. 2012

Dr. Bravman was shown Figure 1 of Exhibit 1008, the Wang patent. Figure 1 shows a cathode 14, area of high density plasma 42, and substrate (wafer 20 on pedestal electrode 18) below the cathode. Dr. Bravman testified that the high-density plasma 42 shown in Wang would expand downward toward the substrate.

Q: Do you recall being asked about the high-density plasma region marked as Number 42?

A: Yes.

Q: What would one of ordinary skill understand to happen to the location of that plasma?

MR. FAHMI: Objection. Beyond the scope of cross-examination.

THE WITNESS: During the application of higher voltages, the development of higher power, in addition to the rotation that was already there, it also would expand.

BY MR. MAIER:

Q Where would it expand?

MR. FAHMI: Objection. Beyond the scope of cross-examination.

THE WITNESS: It -- it would have to expand downward.

Bravman Tr. 55:24 – 56:19, Ex. 2012.

**B. Observation B**

Patent Owner contends that “Dr. Bravman admitted that Kudravetsev’s *[sic]* model does not permit a solution for volume between the anode and the cathode.” Observation at 3-4, Paper No. 50, citing Bravman Tr. 48:14-23, Ex. 2012. The Petitioner’s further contends that “[t]his testimony is relevant because it is inconsistent with the Petitioner’s contention that the combined teachings of Wang, Mozgrin and Kudryavtsev somehow suggest choosing a volume between an anode and a cathode to increase an ionization rate of excited atoms and molecules in a weakly-ionized plasma, as required by claim 9.” Observation at 3. Patent Owner, however, mischaracterizes Dr. Bravman’s testimony.

Dr. Bravman explained that Kudryavtsev’s equation is a behavior model which can be applied to a variety of situations, including the volume which was chosen by Wang and Mozgrin. The Petition clearly noted that “both Wang and Mozgrin carried out their ionization within a volume in which the ionization rate of excited atoms was increased.” Revised Petition at p. 50, Paper No. 9. Dr. Bravman testified consistent with the statements in the petition in his deposition:

Q And these equations that actually define the model don't  
permit a solution for the volume between an anode and a cathode, do

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