

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE GILLETTE COMPANY, FUJITSU SEMICONDUCTOR LIMITED, and
FUJITSU SEMICONDUCTOR AMERICA, INC.

Petitioners

v.

ZOND, LLC
Patent Owner

Case No. IPR2014-00578¹

Patent 6,896,775 B2

**PATENT OWNER'S OBSERVATION ON CROSS-EXAMINATION
OF PETITIONERS' REPLY WITNESS**

¹ Case IPR 2014-01494 has been joined with the instant proceeding.

Patent Owner, Zond, LLC, hereby submits its observations on the cross-examination of Dr. John C. Bravman, whose Declaration (Ex. 1031) was submitted by Petitioners with the Reply to Patent Owner's Opposition, filed March 27, 2015, (Paper No. 48) and whose cross-examination was conducted by deposition on April 3, 2015. Exhibit 2012 is a transcript of that deposition, and is used as the basis for the present observations. The PTAB should consider Patent Owner's Observations on Cross-Examination because the deposition testimony of Petitioners' Reply witness contradicts or is inconsistent with Petitioners' arguments concerning the teachings of the cited references in this proceeding.

1. Dr. Bravman Confirmed That Wang Fails to Teach a Strongly-Ionized Plasma In an Area Adjacent to the Surface of the Substrate.

During his deposition, Dr. Bravman confirmed that, "within the chamber, the plasma will go from areas of high density to low density," with "the end goal [being] to have the high densities near the cathode target."² This testimony is relevant because it is inconsistent with the Petitioner's contention that Wang teaches "selecting at least one of a pulse amplitude and a pulse width of the electrical pulse in order to cause the strongly-ionized plasma to be

² *Ex. 2012* at 45:4-12.

substantially uniform in an area adjacent to the surface of the substrate,” as required by claim 21.³ Claim 21 requires that strongly-ionized plasma be adjacent to the surface of the substrate. However, Dr. Bravman’s testimony reveals that in Wang, the strongly-ionized plasma remains near the cathode target.

2. Dr. Bravman Admitted that Kudryavetsev’s Model Does Not Permit a Solution for Volume Between the Anode and the Cathode.

During his deposition, Dr. Bravman conceded that the model described by Kudryavetsev is “a scale-independent parametric model,” in which none of the parameters are specified in terms of the volume between an anode and a cathode.⁴ This testimony is relevant because it is inconsistent with the Petitioner’s contention that the combined teachings of Wang, Mozgrin and Kudryavetsev 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 9.⁵ As explained by Dr. Bravman, Kudryavetsev describes a theoretical framework and, as such, “it doesn’t tell you

³ Petitioners’ Reply at 11.

⁴ *Ex. 2012* at 48:14-23.

⁵ Corrected Petition at 51.

to put the anode in one place and the cathode in another. Equations don't do that. They help you model what happens when you create a certain geometry and create a set of experimental conditions.”⁶ Thus, the combination of references cited by Petitioners cannot suggest choosing a particular volume, as recited in claim 9, inasmuch as the model of Kudravetsev does not permit any solution for same.

Date: April 10, 2015

Respectfully submitted,

/Tarek N. Fahmi/

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⁶ *Ex. 2012* at 53:2-9.

PATENT OWNER'S UPDATED EXHIBIT LIST

Exhibit No.	Description
Ex. 2001	Affidavit of Etai Lahav in Support of Patent Owner's Motion for Pro Hac Vice Admission
Ex. 2002	Affidavit of Maria Granovsky in Support of Patent Owner's Motion for Pro Hac Vice Admission
Ex. 2003	Affidavit of Tigran Vardanian in Support of Patent Owner's Motion for Pro Hac Vice Admission
Ex. 2004	Transcript of Deposition of Richard DeVito, IPR2014-00578 & IPR2014-00604, Dec. 11, 2014.
Ex. 2005	Transcript of Deposition of Richard DeVito, IPR2014-00578 & IPR2014-00604, Dec. 17, 2014.
Ex. 2006	Declaration of Larry D. Hartsough, Ph.D.
Ex. 2007	Eronini Umez-Eronini, SYSTEM DYNAMICS AND CONTROL, Brooks/Cole Publishing Co. (1999), pp. 10-13.
Ex. 2008	Robert C. Weyrick, FUNDAMENTALS OF AUTOMATIC CONTROL, McGraw-Hill Book Company (1975), pp. 10-13.
Ex. 2009	Chiang et al., U.S. Patent 6,398,929.
Ex. 2010	Stipulations of Dismissal
Ex. 2011	Zond-TSMC Settlement Agreement (Board Only)
Ex. 2012	Transcript of Deposition of John C. Bravman, Ph.D.

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