UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GLOBAL FOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN MODULE ONE LLC & CO. KG, GLOBALFOUNDRIES DRESDEN MODULE TWO LLC & CO. KG, and THE GILLETTE COMPANY

Petitioners

v.

ZOND, LLC
Patent Owner

Case IPR2014-01100[1]
Patent 7,604,716 B2

PATENT OWNER'S RESPONSE
35 USC §§ 316 AND 37 CFR § 42.120

[1] Case IPR2014-00973, has been joined with the instant proceeding.

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TABLE OF AUTHORITIES

CASES

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	Declaration of Larry D. Hartsough, Ph.D.
Ex. 2005	Transcript of Deposition of Dr. Uwe Kortshagen, IPR2014-00807, -00808, -01099 & -01100, Dec. 22, 2014.
Ex. 2006	Eronini Umez-Eronini, SYSTEM DYNAMICS AND CONTROL, Brooks/Cole Publishing Co. (1999), pp. 10-13.
Ex. 2007	Robert C. Weyrick, FUNDAMENTALS OF AUTOMATIC CONTROL, McGraw-Hill Book Company (1975), pp. 10-13.
Ex. 2008	Chiang et al., U.S. Patent 6,398,929.

I. INTRODUCTION

All of the challenged claims are patentable over *Wang* and *Lantsman*. The '716 patent requires transforming a weakly-ionized plasma to a strongly-ionized plasma ***without developing an electrical breakdown condition*** in a chamber.[1] *Wang*, however, merely describes techniques for reducing, but not eliminating, electrical breakdown conditions such as arcing. The two are not the same. *Lantsman* fails to cure these deficiencies.

Wang describes applying DC *power* pulses to a plasma when sputtering material from a target, but fails to teach or suggest controlling *voltage* during such activities or when generating a high-density plasma. In fact, *Wang* does not explain any electrodynamics of high-density plasmas.[2] Control of power (as in *Wang*) is very different from controlling voltage,[3] and even *Wang* acknowledges this distinction.[4] Thus, unlike the '716 patent, in which the rise time of the electric field is chosen to increase an ionization rate of excited atoms in a weakly-ionized

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[1] *Ex. 1101* at 20:23-27; 22:47-50 (emphasis added).

[2] *Ex. 2004* at ¶¶ 12, 71.

[3] *Id*. at ¶¶ 58-62.

[4] *Ex. 1104* at 5:52-54 ("Where chamber impedance is changing, the power pulse width is preferably specified rather than the current or voltage pulse widths.").

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