

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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THE GILLETTE COMPANY, TAIWAN SEMICONDUCTOR  
MANUFACTURING COMPANY, LTD., TSMC NORTH AMERICA CORP.,  
FUJITSU SEMICONDUCTOR LIMITED, and FUJITSU SEMICONDUCTOR  
AMERICA, INC.

Petitioners

v.

ZOND, LLC  
Patent Owner

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Case IPR2014-00604<sup>1</sup>  
Patent 6,896,775 B2

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

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<sup>1</sup> Case IPR2014-01482, has been joined with the instant proceeding.

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**TABLE OF AUTHORITIES**

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**EXHIBIT LIST**

<b>Exhibit No.</b>	<b>Description</b>
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.

## I. INTRODUCTION

All of the challenged claims are patentable over *Wang* and *Mozgrin*, whether considered alone or in combination with *Lantsman*. *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.<sup>1</sup> *Mozgrin* relates to “high-power quasi-stationary low-pressure discharge in a magnetic field.”<sup>2</sup> The study used two different “[d]ischarge device configurations,”<sup>3</sup> and *Mozgrin* determined that when employing a magnetic field (like *Wang*), a supply unit “providing square voltage and current pulses with rise times (leading edge) of 5 – 60  $\mu$ s and durations as much as 1.5 ms” was needed.<sup>4</sup> *Wang*, on the other hand, deemed it important that pulses have “significant” rise times and pulse widths preferably less than 200  $\mu$ s and no more than 1 ms.<sup>5</sup>

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<sup>1</sup> *Ex. 2006* at ¶ 12.

<sup>2</sup> *Ex. 1102* at p. 400, Abstract.

<sup>3</sup> *Id.* at p. 401, Figs. 1a and 1b.

<sup>4</sup> *Ex. 1102* at p. 401, rt. col. ¶ 1.

<sup>5</sup> *Ex. 1108* at 5:26-27, 43-48; 8:41-42.

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