

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GLOBALFOUNDRIES 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

Inter Partes Review Case No. IPR2014-01089*

Patent 6,806,652 B2

**PATENT OWNER'S RESPONSE
PURSUANT TO 37 C.F.R. § 42.220**

Claim 35

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EXHIBIT LIST

Exhibit No.	Description
Ex. 2001	Affidavit of Maria Granovsky in Support of Patent Owner's Motion for <i>Pro Hac Vice</i> Admission
Ex. 2002	Declaration of Larry D. Hartsough, Ph.D.
Ex. 2003	Deposition of Dr. Kortshagen

I. Introduction

Petitioners have failed to demonstrate that the challenged claim 35 would have been obvious to a person of ordinary skill in the art in view of the cited references. Petitioners fail to cite any reference that teaches or suggests the claimed means for super-ionizing an initial plasma so as to generate a high-density plasma.¹ They also fail to show by a preponderance of the evidence that it would have been obvious in view of the cited art to combine a means for transporting an initial plasma with a means for super-ionization as claimed.

In instituting this proceeding, the Board endorsed the Petitioners' proposed interpretation of the claimed means for super-ionizing an initial plasma, which requires "converting at least 75% of the neutral atoms *in the initial plasma* into ions."² Petitioners cite *Mozgrin* as allegedly teaching such a super-ionization means, and rely on the declaration of Dr. Kortshagen to prove that *Mozgrin* yielded the required degree of ionization. But Dr. Kortshagen devoted his proofs to the wrong parameter, and therefore his calculations are irrelevant to the claimed super-ionization means.

¹ Ex. 2002, Hartsough Declaration, ¶ 82 – 85.

² IPR2014-001089, Paper 13, p. 17 (P.T.A.B. Dec. 11, 2014).

Dr. Kortshagen ignores the requirement in the claims that “the electric field super-ioniz[e] *the initial plasma* so as to generate a high-density plasma”³ such that at least 75% of the neutral atoms in this initial plasma are ionized. He instead points to the percentage of ionized atoms in the *final high-density* plasma of *Mozgrin* without regard to the percentage of neutral atoms in the initial plasma that are ionized.⁴ Specifically, Dr. Kortshagen starts by noting that *Mozgrin* reports an ion density of $1.5 \times 10^{15} \text{ cm}^{-3}$.⁵ Dr. Kortshagen then uses the ideal gas equation to estimate the total density of gas atoms in *Mozgrin*’s chamber so he can deduce the percentage of those gas atoms that were ionized to yield *Mozgrin*’s reported ion density of $1.5 \times 10^{15} \text{ cm}^{-3}$.⁶ Not only does Dr. Kortshagen use flawed estimates of the pressure in *Mozgrin*’s chamber to compute the density of gas atoms,⁷ his calculations are irrelevant to the claimed super-ionization: Dr. Kortshagen purports to prove that at least 75% of **all atoms** in *Mozgrin*’s chamber were ionized, but this does not address

³ Ex. 1201, ‘652 patent at 33:61-64 (emphasis added).

⁴ Ex. 2002 Hartsough Declaration at ¶ 83.

⁵ Ex. 1202, Kortshagen Declaration at ¶ 87.

⁶ Ex. 1202, Kortshagen Declaration at ¶ 88 - 93

⁷ Ex. 2002, Hartsough Declaration at ¶ 14.

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