

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJITSU SEMICONDUCTOR LIMITED AND
FUJITSU SEMICONDUCTOR AMERICA, INC.

Petitioner

v.

ZOND, LLC
Patent Owner

U.S. Patent No. 6,806,652

Inter Partes Review Case No. 2014-00864

**PATENT OWNER'S PRELIMINARY RESPONSE
UNDER 37 CFR § 42.107(a)**

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I. Introduction

The present petition for *inter partes* review is the first of three petitions that challenge the patentability of every claim of U.S. Patent No. 6,806,652 (“the ‘652 patent”). These petitions are part of a larger campaign by a consortium of companies seeking to annul ten Zond patents, and every one of hundreds of claims awarded to Zond. The present petition targets independent claim 18 of the ‘652 patent and its dependent claims 19 - 34.

The ‘652 patent is generally directed to a technique for generating a super-ionized plasma having a high density of ions. The patent proposes a method in which a volume of feed gas is converted to an initial plasma that is seeded with excited atoms. The plasma/excited atom mixture is then transported to a region that is proximate to a cathode assembly, where the plasma is then super-ionized. This technique allows the initial plasma to be created under a first condition that seeds the initial plasma with excited atoms, to facilitate the creation of a denser plasma in the next stage. The transportation of this mixture to another location exposes the mixture to a set of conditions that generate a super-ionized plasma from the mixture.

This staged process avoids the risk of arcing often associated with the formation of such dense plasmas. The claims at issue recite this method and various improvements and applications discussed below.

The present petition does not cite to any prior art reference that teaches the claimed methods. Instead it weaves together up to four different prior art references in an attempt to recreate the claims from carefully chosen excerpts. The selected references have publication dates that span nearly 20 years. Yet in all that time, not one reference wrote down or proposed the method patented by Zond. Thus, as explained in this statement, the Petitioner resorts to hindsight analysis in the hope of persuading the Board that the claim method was in fact obvious all along: Using the claims as a schematic, the Petitioner carefully selects a set of prior art references and assembles them to suit its objective.

II. Technology Background

A. The Need for More Uniformly Distributed Plasmas

The '652 patent explains that for certain plasma applications, such as plasma etching or plasma sputtering, it is undesirable for the plasma's ion concentration to vary significantly from one location to another. For example if the ion concentration is relatively high in one region, it can cause corresponding non-uniformities in the target.¹ The patent therefore is

¹ Ex. 1101, '652 Patent, col. 4, lines 23 – 30.

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