

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.  
AND TSMC NORTH AMERICA CORP.

Petitioner

v.

ZOND, LLC  
Patent Owner

---

Case IPR2014-00818  
Patent 6,853,142

---

ZOND LLC'S PATENT OWNER PRELIMINARY RESPONSE  
PURSUANT TO 37 C.F.R. § 42.107(a)

**TABLE OF CONTENTS**

I. INTRODUCTION ..... 1

II. TECHNOLOGY BACKGROUND ..... 9

    A. Overview Of Magnetron Sputtering Systems. .... 9

    B. The '142 patent: Dr. Chistyakov invents a new apparatus containing an ionization source to generate weakly ionized plasma, an electrical pulse applied to the weakly ionized plasma to create strongly ionized plasma and a gas line to supply feed gas to the strongly-ionized plasma to diffuse the strongly-ionized plasma, and allow additional power to be absorbed by the strongly ionized plasma. .... 11

    C. The Petitioner Mischaracterized The File History. .... 15

III. SUMMARY OF THE PETITIONER’S PROPOSED GROUNDS FOR REVIEW ..... 18

IV. PATENT OWNER’S CLAIM CONSTRUCTIONS..... 19

    A. The construction of “weakly ionized plasma” and “strongly ionized plasma.” ..... 20

V. THERE IS NO REASONABLE LIKELIHOOD OF PETITIONER PREVAILING AS TO A CHALLENGED CLAIM OF THE '142 PATENT. .... 22

    A. The Petition failed to demonstrate any motivation to combine. .... 23

        1. Scope and content of prior art. .... 26

            a. Lantsman – U.S. Pat. No. 6,190,512 (Ex. 1004)..... 26

            b. Mozgrin – D.V. Mozgrin, et al, High-Current Low-Pressure Quasi-Stationary Discharge in a Magnetic Field: Experimental Research, Plasma Physics Reports, Vol. 21, No. 5, pp. 400-409, 1995 (Ex. 1003). .... 27

            c. Wang – U.S. Patent No. 6,413,382 (Exhibit 1005)..... 29

        2. The Petitioner Fails To Show That It Would Have Been Obvious To Combine The DC Power System Without Pulses Of Lantsman With The Pulsed Power System Of Either Mozgrin or Wang. .... 32

    B. The Petition fails to demonstrate how the alleged combinations teach every element of the challenged claims. .... 37

        1. The cited references do not teach “a gas line that supplies feed gas to the strongly-ionized plasma, the feed gas diffusing the strongly-ionized plasma, thereby allowing additional power from the pulsed power supply

to be absorbed by the strongly ionized plasma,” as recited in independent claim 1 and as similarly recited in independent claim 10.....38

2. The cited references do not teach a “the gas line supplies additional feed gas that exchanges the weakly-ionized plasma while applying the electrical pulse across,” as recited in claim 3 and as similarly recited in claim 12.....41

3. The cited references do not teach a “a power supply that supplies power to the weakly-ionized plasma though an electrical pulse applied across the weakly-ionized plasma,” and “the power supply generates a constant power,” as required by dependent claim 4.....44

C. The Petition Failed to Identify Any Compelling Rationale for Adopting Redundant Grounds of Rejection Under Both Mozgrin and Wang.....48

D. The Petition failed to set forth a proper obviousness analysis.....54

VI. CONCLUSION.....56

## I. INTRODUCTION

The Petitioner has represented in a motion for joinder that this petition “is identical to the IPR Intel no. IPR2014-00494 in all substantive respects, includes identical exhibits, and relies upon the same expert declarant.”

Accordingly, based upon that representation, the Patent Owner opposes review on the same basis presented in opposition to Intel’s request no. IPR2014-00494 which is reproduced below:

The Board should deny the present request for *inter partes* review of U.S. Patent No. 6,853,142 (“the ’142 patent”) because there is not a reasonable likelihood that the Petitioner will prevail at trial with respect to at least one claim of the ’142 patent.<sup>1</sup>

Indeed, there are five different and independent groups of reasons why the Petitioner cannot prevail. First, the references that are primarily relied upon by the Petitioner (*i.e.*, Mozgrin and Wang) were already considered by the Examiner and overcome during the prosecution of the application that led to the issuance of the ’142 patent. These references were considered by 6

---

<sup>1</sup> 35 U.S.C. § 314(a).

different examiners and overcome during the prosecution of 9 other patents that are related to the '142 patent over nearly a 10 year period.<sup>2</sup>

Second, the Petitioner's obviousness rejections are all predicated on the false assumption that a skilled artisan could have achieved the combination of i) an ionization source generating a weakly-ionized plasma from feed gas, ii) an electrical pulse having a magnitude and a rise-time that is sufficient to increase the density of the weakly-ionized plasma to generate a strongly-ionized plasma, and iii) a gas line supplying feed gas to diffuse the strongly-ionized plasma to thereby allow additional power from the pulsed power supply to be absorbed by the strongly-ionized plasma, as required by independent claim 1 of the '142 patent by combining the teachings of either Mozgrin or Wang and Lantsman.<sup>3</sup> But these three references disclose very

---

<sup>2</sup> Examiners Douglas Owens, Tung X. Le, Rodney McDonald, Wilson Lee, Don Wong, and Tuyet T. Vo allowed U.S. Patents 7,147,759, 7,808,184, 7,811,421, 8,125,155, 6,853,142, 7,604,716, 6,896,775, 6,896,773, 6,805,779, and 6,806,652 over Mozgrin and Wang over nearly a decade from the time that the application for the '759 patent was filed on 9/30/2002 to the time that the '155 patent issued on 2/28/2012.

<sup>3</sup> Petition at pp. 14-60.

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.