### U.S. PATENT 7,811,421 Petition for *Inter Partes* Review

DOCKET NO.: 34789.110

Filed on behalf of: Taiwan Semiconductor Manufacturing Company, Ltd. and

TSMC North America Corp.

By: David L. McCombs, Reg. No. 32,271

David M. O'Dell, Reg. No. 42,044 Richard C. Kim, Reg. No. 40,046

UNITED	STATES	<b>PATENT</b>	AND	TRADE	MARK	OFFICE

## BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

Petitioner

v.

ZOND, INC. Patent Owner

Case IPR\_\_\_\_\_

PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 7,811,421
CHALLENGING CLAIMS 1, 2, 8, 10-13, 15-17, 22-25, 27-30, 33, 34, 38, 39,
42, 43 AND 46-48
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104



## **TABLE OF CONTENTS**

1. M	andatory Notices	- 1 -
A.	Real Party-in-Interest	- 1 -
B.	Related Matters	- 1 -
C.	Counsel	- 2 -
D.	Service Information	- 2 -
II. Ce	ertification of Grounds for Standing	- 2 -
III. O	Overview of Challenge and Relief Requested	- 3 -
A.	Prior Art Patents and Printed Publications	- 3 -
B.	Grounds for Challenge	- 3 -
IV. B	Brief Description of Technology	- 4 -
A.	Plasma	- 4 -
B.	Ions and Excited Atoms	- 5 -
V. Ov	verview of the '421 Patent	- 7 -
A.	Summary of Alleged Invention of the '421 Patent	- 7 -
B.	Prosecution History	- 7 -
VI. O	Overview of the primary prior art references	- 8 -
A.	Summary of the prior art	- 8 -
B.	Overview of Mozgrin	- 8 -
C.	Overview of Wang	10 -
VII.	Claim Construction	11 -
A.	"weakly-ionized plasma" and "strongly-ionized plasma"	12 -
VIII.	Specific Grounds for Petition	14 -
A. antic	Ground I: Claims 1, 2, 8, 10-13, 15, 16, 34, 38, 39, 43 and 46-48 are expated by Mozgrin	14 -
1.	Independent claim 1 is anticipated by Mozgrin	15 -
2.	Independent claim 34 is anticipated by Mozgrin	23 -
3.		
4. an		



B. Ground II: Claims 1, 2, 8, 10-13, 16, 17, 22-25, 28-30, 33, 34, and 46-48 are anticipated by Wang	
1. Independent claim 1 is anticipated by Wang	33 -
2. Independent claim 17 is anticipated by Wang	39 -
3. Independent claim 34 is anticipated by Wang	41 -
4. Independent claims 46-48 are anticipated by Wang	42 -
5. Dependent claims 2, 8, 10-13, 16, 22-25, 28, 29, 30, 33, 39, 4 are anticipated by Wang	
C. Ground III: Claims 17, 22-25, 27-30, 33, and 42 are obvious combination of Mozgrin and Lantsman	
1. Independent claim 17	50 -
2. Dependent claims 22-25, 27-30, 33 and 42 are obvious over combination of Mozgrin with Lantsman	
D. Ground IV: Claims 15, 27 and 38 are obvious over the combin Wang and Mozgrin	
IX. Conclusion	59 -



## **TABLE OF AUTHORITIES**

In re ICON Health & Fitness, Inc., 496 F.3d 1374, 1379 (Fed. Cir. 2007).

37 C.F.R. §42.22(a)(1)

37 C.F.R. § 42.100(b)

37 C.F.R. §42.104(a)

37 C.F.R. §42.104(b)(1)-(5)

77 Fed. Reg. 48764 (Aug. 14, 2012).



### I. MANDATORY NOTICES

### A. Real Party-in-Interest

Taiwan Semiconductor Manufacturing Company, Ltd. and TSMC North America Corp. are the real parties-in-interest ("Petitioner").

### B. Related Matters

Zond has asserted U.S. Patent No. 7,811,421 ("'421 Patent") (Ex. 1001) against numerous parties in the District of Massachusetts, 1:13-cv-11570-RGS (*Zond v. Intel*); 1:13-cv-11577-DPW (*Zond v. AMD, Inc., et al*); 1:13-cv-11581-DJC (*Zond v. Toshiba Am. Elec. Comp. Inc.*); 1:13-cv-11591-RGS (*Zond v. SK Hynix, Inc.*); 1:13-cv-11625-NMG (*Zond v. Renesas Elec. Corp.*); 1:13-cv-11634-WGY (*Zond v. Fujitsu, et al.*)<sup>1</sup>; and 1:13-cv-11567-DJC (*Zond v. Gillette, Co.*) (Ex. 1022). Petitioner is also filing additional Petitions for *Inter Partes* review in several patents related<sup>2</sup> to the '421 Patent.

The below-listed claims of the '421 Patent are presently the subject of a substantially identical petition for *inter partes* review styled *Intel Corporation v*.

Zond, Inc., which was filed March 7, 2014 and assigned Case No. IPR2014-00468.

Petitioner plans to seek joinder with that *inter partes* review.

<sup>&</sup>lt;sup>2</sup> The related patents, e.g., name the same alleged inventor.



<sup>&</sup>lt;sup>1</sup> The Petitioner is a co-defendant with Fujitsu in this lawsuit.

# DOCKET

## 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.

