

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOKYO ELECTRON LIMITED
Petitioners

v.

DANIEL L. FLAMM,
Patent Owner

Patent No. RE40,264

DECLARATION OF MARK J. KUSHNER, PH.D.

Tokyo Electron Limited
EXHIBIT 1013
IPR Petition for

TABLE OF CONTENTS

I.	Qualifications, Background, and Experience	1
II.	Scope of Assignment	3
III.	Materials Considered	4
IV.	Summary of Opinions	5
V.	Legal Principles used in Analysis	6
A.	Patent Claims in General	6
B.	Person of Ordinary Skill in the Art	7
C.	Claim Construction	7
D.	Prior Art	8
E.	Patentability	9
VI.	Priority Date of the '264 Patent	12
VII.	A Person of Ordinary Skill in the Relevant Art	14
A.	Relevant Field	14
B.	Person of Ordinary Skill in the Art	14
VIII.	The '264 Patent	16
IX.	Background of the Relevant Technology of '264 Patent	26
A.	Thermal Mass and Thermal Conductivity	26
B.	Substrate Holder Temperature Change	28
C.	Relationship Between Thermal Mass and Temperature Change According to '264 Patent	30
X.	Claim Construction	31

A.	“substrate holder” (first interpretation).....	31
B.	“heat transfer device” (first interpretation).....	32
C.	“selected thermal mass” (first interpretation).....	33
D.	“selected first substrate holder temperature,” “selected second substrate holder temperature”	35
E.	“predetermined temperature change”	35
F.	“specific interval of time,” “specified time interval”	36
G.	“substrate holder” (second interpretation)	36
H.	“selected thermal mass” (second interpretation)	37
I.	“heat transfer device” (second interpretation)	38
XI.	Invalidity Analysis.....	38
A.	Summary of Kadomura.....	38
B.	Summary of Matsumura.....	42
C.	Summary of Okada	42
D.	Claim 13 is invalid under 35 U.S.C. § 102 over Kadomura or is invalid under 35 U.S.C. § 103 in view of Kadomura and Matsumura.....	44
E.	Claim 13 is invalid under 35 U.S.C. § 102 over Okada or is invalid under 35 U.S.C. § 103 in view of Okada, Matsumura, and Kadomura.....	69
F.	Claims 14-16, 19-23, 64, and 65 are invalid under 35 U.S.C. § 103 in view of Kadomura, Okada, and Matsumura.....	81
G.	Claims 17 and 18 are invalid under 35 U.S.C. § 103 in view of Kadomura, Kaji, Okada, and Matsumura.	102
H.	Claims 25 and 26 are invalid under 35 U.S.C. § 103 in view of Kadomura, Edamura, Okada, and Matsumura.....	106

I.	Claim 24 is invalid under 35 U.S.C. § 103 in view of Kadomura, Okada 2, Okada, and Matsumura.....	109
XII.	CONCLUSION.....	110

1. My name is Dr. Mark J. Kushner. I am a professor of Electrical Engineering and Computer Science at the University of Michigan. I understand that my declaration is being submitted in connection with a Petition for *Inter Partes* Review of U.S. Patent No. RE40,264 ('264 patent).

I. Qualifications, Background, and Experience

2. I received a Bachelor of Science degree in nuclear engineering (Summa Cum Laude) from the University of California at Los Angeles (UCLA) in 1976. I also simultaneously received a Bachelor of Arts in astronomy from UCLA in 1976.

3. I received a Masters of Science in Applied Physics from the California Institute of Technology in 1977. I also received a PhD in Applied Physics from the California Institute of Technology in 1979.

4. I have authored or co-authored over 320 scientific and technical journal articles. I am listed as an inventor on two U.S. patents.

5. After completing my PhD, I worked at various national laboratories and companies from 1980-1986. I was a physicist at Sandia National Laboratory in the Laser Analytical Spectroscopy Division from 1980-1981, where I focused on microelectronics related plasma etching. I was also a physicist at the Lawrence Livermore National Laboratory in the Advanced Lasers and Laser Isotope

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.