

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Inter Partes* Review of:)
U.S. Patent No. 8,252,675)
Issued: August 28, 2012)
Application No.: 12/942,763)
Filing Date: November 9, 2010)

For: **Methods of Forming CMOS Transistors with High Conductivity Gate Electrodes**

FILED VIA PRPS

**SECOND PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,252,675**

For ease of reference, Petitioner refers to this Petition as the “Second ’675 Petition” challenging claims 1-8 and 10-15 of the ’675 patent.

TABLE OF CONTENTS

I. Introduction..... 1

II. Requirements For Petition For *Inter Partes* Review..... 1

 A. Grounds for Standing (37 C.F.R. § 42.104(a)) 1

 B. Notice of Lead and Backup Counsel and Service Information..... 1

 C. Notice of Real-Parties-in-Interest (37 C.F.R. § 42.8(b)(1)).....2

 D. Notice of Related Matters (37 C.F.R. § 42.8(b)(2)).....2

 E. Fee for Inter Partes Review3

 F. Proof of Service.....3

III. Identification Of Claims Being Challenged (37 C.F.R. § 42.104(b))3

IV. Description Of The Purported Invention4

 A. Technology Background4

 B. The '675 Patent Disclosure7

V. Overview Of The Prior Art..... 11

 A. Hsu's March 12, 2008 Priority Date 12

 B. Forming the Gate Electrodes in Hsu 12

 C. '675 Patent Prosecution History..... 16

VI. Claim Construction..... 17

VII. Level Of Ordinary Skill In The Art In The Relevant Timeframe 18

VIII. Differences Between Hsu And U.S. Patent No. 2009/0065809
 ("Yamakawa") 19

IX. Precise Reasons For The Relief Requested.....20

 A. Ground 1: The Challenged Claims Are Anticipated By
 U.S. Patent No. 8,536,660 ("Hsu")20

Second Petition for *Inter Partes* Review of USP 8,252,675

X. Second Ground Of Invalidity – Claim 12 Is Rendered Obvious By
Hsu.....56

A. Claim 1256

XI. Conclusion59

EXHIBIT LIST

- 1101 U.S. Patent No. 8,252,675 (the “’675 patent”)
- 1102 File History for the ’675 Patent
- 1103 Declaration of Dr. Jack Lee in support of Petition for *Inter Partes* Review of U.S. Patent No. 8,252,675 (“Lee Decl.”)
- 1104 Curriculum Vitae of Dr. Jack Lee
- 1105 U.S. Patent No. 8,536,660 (“Hsu”)
- 1106 Excerpt from File History for Hsu (U.S. Patent Application No. 12/047,113) (the “Hsu application”)
- 1107 Memorandum Opinion, *Samsung Electronics Co., Ltd. et al. v. NVIDIA Corp. et al.*, No. 3:14-cv-00757-REP (E.D. Va. July 30, 2015), Dkt. No. 221 (“Claim Construction Op.”)
- 1108 Y.F. Hu et al., *A Study of Titanium Nitride Diffusion Barriers Between Aluminum and Silicon by X-ray Absorption Spectroscopy: the Si, Ti and N Results*, 8 J. SYNCHROTRON RADIATION 860 (2001)
- 1109 Wen-Fa Wu et al., *Novel Multilayered Ti/TiN Diffusion Barrier for Al Metallization*, 34 J. ELEC. MATERIALS 1150 (2005)
- 1110 Non-Confidential Excerpts from Rebuttal Expert Report of Dr. Richard B. Fair Regarding U.S. Patent No. 8,252,675, *Samsung Electronics Co., Ltd. et al. v. NVIDIA Corp. et al.*, No. 3:14-cv-00757-REP (E.D. Va. Oct. 9, 2015)

I. INTRODUCTION

On behalf of NVIDIA Corporation (“NVIDIA”) and in accordance with 35 U.S.C. § 311 and 37 C.F.R. 42.100, *inter partes* review of claims 1-8 and 10-15 of United States Patent No. 78,252,675 (“the ’675 patent”), titled “Methods of Forming CMOS Transistors with High Conductivity Gate Electrodes” is hereby requested. According to United States Patent and Trademark Office (“Patent Office”) records, the ’675 patent was originally assigned to, and is currently owned by, Samsung Electronics Co., Ltd. (“Samsung”). A copy of the ’675 patent is attached as Ex. 1101, and the prosecution history is attached as Ex. 1102. Petitioner previously filed a Petition for *Inter Partes* Review of U.S. Patent No. 8,252,675 on June 1, 2015. *See* IPR2015-01318; *see also* Section II.D, *infra*.

II. REQUIREMENTS FOR PETITION FOR *INTER PARTES* REVIEW

A. Grounds for Standing (37 C.F.R. § 42.104(a))

Petitioner certifies that the ’675 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting *inter partes* review of the challenged claims of the ’675 Patent on the grounds identified herein.

B. Notice of Lead and Backup Counsel and Service Information

Pursuant to 37 C.F.R. §§ 42.8(b)(3), 42.8(b)(4), and 42.10(a), Petitioner provides the following designation of Lead and Back-Up counsel.

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.