Paper No. \_\_\_\_

#### UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD, Petitioner,

v.

GODO KAISHA IP BRIDGE 1, Patent Owner.

> IPR2017-01841<sup>1</sup> Patent 7,893,501

### DECLARATION OF ALEXANDER D. GLEW

<sup>1</sup>Case IPR2017-01842 has been consolidated with this proceeding.

DOCKE.

Δ

IP Bridge Exhibit 2007 TSMC v. Codo Kaisha IP Bridge 1

#### **TABLE OF CONTENTS**

I.	PERSONAL AND PROFESSIONAL BACKGROUND1						
II.	MATERIALS REVIEWED AND CONSIDERED						
III.	MY UNDERSTANDING OF PATENT LAW						
	A.	Obvie	ousness	8			
IV.	THE	'501 P	PATENT	9			
	A.	The F	Protruding Gate Electrode	19			
	В.	The Protruding Gate Electrode Reduces Parasitic Capacitance Between the Gate Electrode and the Source/Drain Contacts					
	C.		Claims Were Narrowed to Distinguish Gate Electrodes that for Protrude	27			
V.	THE CHALLENGED CLAIMS						
VI.	LEVEL OF ORDINARY SKILL IN THE ART						
VII.	CLA	IM IN	TERPRETATION	30			
	А.		rein the MISFET includes: an active region made of a conductor substrate" (claim 1)	30			
		1.	The Petitions and Petitioner's Expert Consistently Characterize the Active Region as an Area of the Semiconductor Substrate Defined by an Isolation Region Where the Transistor Is Formed	30			
		2.	The '501 Patent Specification Describes an Active Region as an Area of the Semiconductor Substrate Defined by an Isolation Region Where the Transistor is Formed	33			
		3.	The Specification's Use Is Consistent with the Ordinary Meaning of a Transistor's "Active Region"				
VIII.	THE CHALLENGED CLAIMS WOULD NOT HAVE BEEN OBVIOUS			45			
	A. Overview of Igarashi			45			
	B. Overview of Woerlee			49			
	C. The Igarashi/Woerlee Device Does Not Comprise a MISFET that Includes an "Active Region"						

1.	Igarashi's Fifth Embodiment Does Not Disclose Isolation Regions				
	a.	Igarashi Does Not Teach that the Fifth Embodiment (Fig. 12) Includes Isolation Regions	51		
	b.	Isolation Regions Would Not Have Been Inherent in the Fifth Embodiment of Igarashi	59		
	с.	The Rationale in the Institution Decision Has Two Critical Mistakes	62		
	d.	Igarashi's Fifth Embodiment Could Not Have Been Modified to Achieve Isolation of Each Transistor as Taught for Igarashi's First Embodiment	67		
	e.	Woerlee Does Not Teach Where in the Horizontal Direction to Place Isolation Regions around a Multi-Transistor Device Like Igarashi's Fifth Embodiment	69		
2.	Petiti Over	If Igarashi Is Considered to Teach What the ons Allege, All Challenged Claims Distinguish the Petitioner's Alleged Igarashi/Woerlee pination	71		
	a.	Petitioner Failed to Demonstrate How and Why Any MISFET in the Igarashi/Woerlee Combination Includes an "Active Region" Meeting the Agreed-Upon BRI	72		
	b.	There Are Not Two Active Regions Bounded by the Alleged Isolation Region	75		
	с.	No Transistor Includes the Region Bounded by the Alleged Isolation Region in the Petitions' Modified Igarashi Fig. 12, So There Is Not One Active Region	80		
	d.	Interpreting Claim 1 to Require That the Active Region Include Only a Single Transistor Is the Only Interpretation Supported by the Record and Consistent with the Specification	85		
3.		lusion - Petitioner Fails to Identify a Region That s the Agreed-Upon BRI of "Active Region"	88		

	D.	None of Dependent Claims 4-7, 9-12, 14-19, 21, and 23-25 Would Have Been Obvious Over Igarashi and Woerlee		
		1. For the Same Reasons Set Forth Above with Respect to Claim 1, the Dependent Claims Would Not Have Been Obvious Over Igarashi and Woerlee	89	
	E.	Claim 13 Is Not Rendered Obvious by Igarashi, Woerlee, and Hokazono	91	
IX.	CON	CLUSION	92	
X.	SIGN	IATURE	92	

I, Alexander D. Glew, declare:

1. I have been retained by Wolf, Greenfield & Sacks, P.C., counsel for Patent Owner Godo Kaisha IP Bridge 1 ("IP Bridge"), to submit this declaration in connection with the *Inter Partes* Review of claims 1, 4-7, 9-19, 21, and 23-25 of U.S. Patent No. 7,893,501 ("the '501 patent").<sup>2</sup> I am being compensated for my time at a rate of \$515.00 per hour, plus actual expenses. My compensation is not dependent in any way upon the outcome of the Petition.

#### I. PERSONAL AND PROFESSIONAL BACKGROUND

2. My curriculum vitae is provided as Exhibit 2008 to this proceeding.

3. I earned a B.S. degree in Mechanical Engineering from the University of California, Berkeley in 1985, a M.S. degree in Mechanical Engineering from the University of California, Berkeley in 1987, a M.S. degree in Materials Science and Engineering from Stanford University in 1995, and a Ph.D. in Materials Science and Engineering from Stanford University in 2003.

<sup>2</sup> Unless otherwise specified with the "-1842" prefix, references to exhibits and papers herein are to those filed in IPR2017-01841. Pin cites are not provided for the -1842 Petition or Dr. Shanfield's -1842 declaration (Ex.-1102) where the arguments are the same as for the -1841 Petition or Dr. Shanfield's -1841 declaration (Ex.-1002).

## DOCKET A L A R M



# 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.