

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GlobalFoundries U.S. Inc.

Petitioner

v.

Godo Kaisha IP Bridge 1

Patent Owner

CASE IPR: *IPR2017-00919*

**PETITION FOR *INTER PARTES* REVIEW
OF UNITED STATES PATENT NO. 6,538,324**

TABLE OF CONTENTS

	<u>Page</u>
I. PRELIMINARY STATEMENT	1
II. THE ‘324 PATENT.....	4
A. Overview of the ‘324 Patent	4
B. Prosecution History.....	5
III. Level of Ordinary Skill.....	8
IV. Claim Construction.....	8
V. CLAIMS 1-3, 5-7, AND 9 OF THE ‘324 PATENT ARE UNPATENTABLE OVER THE PRIOR ART	9
A. Overview of the Prior Art	9
1. Ding.....	12
2. Zhang	12
B. The combined teachings of <i>Ding</i> in view of <i>Zhang</i> render claims 1-3, 5-7, and 9 obvious.....	13
1. Claim 1	13
2. Claim 2.....	28
3. Claim 3.....	30
4. Claim 5.....	31
5. Claim 6.....	32
6. Claim 7.....	33
7. Claim 9.....	33
VI. MANDATORY NOTICES.....	34
A. Real Party-in-Interest	34
B. Related Matters	34
C. Lead and Back-Up Counsel	36
D. Service Information	36
VII. CERTIFICATION UNDER 37 C.F.R. § 42.24(d).....	36
VIII. GROUNDS FOR STANDING	36
IX. STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED	37
X. CONCLUSION	37

TABLE OF AUTHORITIES

	<u>Page(s)</u>
Case	
<i>ClearValue, Inc. v. Pearl River Polymers, Inc.</i> , 668 F.3d 1340 (Fed. Cir. 2012)	27
<i>Cuozzo Speed Techs., LLC v. Lee</i> , No. 15-446, slip op. (U.S. June 20, 2016)	8
<i>Godo Kaisha IP Bridge 1 v. Broadcom Limited et al.</i> , Case No. 2-16-cv-00134 (E.D. Tex. February 14, 2016)	33
<i>Godo Kaisha IP Bridge 1 v. Omni Vision Technologies, Inc.</i> , Case No. 1-16-cv- 00290 (D. Del. April 22, 2016)	33
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007)	17
<i>Titanium Metals Corp. v. Banner</i> , 778 F.2d 775 (Fed. Cir. 1985)	29
Statutes	
35 U.S.C. §§ 102(a), (b), and (e)	12
35 U.S.C. § 102(e)	12
35 U.S.C. § 103	4, 35
Other Authorities	
37 C.F.R. § 42.24	35
37 C.F.R. § 42.24(D)	35
37 C.F.R. § 42.100(b)	8
“Duan,” Ex. 1017	24
“Hong,” Ex. 1009	6
“Moussavi,” Ex. 1019	19
“Vitkavage,” Ex. 1008	6
“Wang”, Ex. 1023	20
“Wijekoon,” Ex. 1021	19
Abstract. <i>Ding</i>	30
1005, Abstract. Thus, <i>Ding</i>	27

TABLE OF AUTHORITIES

1004, Abstract. *Zhang* 12

Although *Ding* 16

Annotated FIG. 2 of *Ding* 32

CBM2012-00003, Paper 7, Order 34

Ding. Ex. 1003 18

Duan et al., “Magnetic Property and Microstructure Dependence of CoCrTa/Cr
Media on Substrate Temperature and Bias,” 23

1004, FIG. 4. *Zhang* 15

M.P.E.P. § 2131.03 30

M.P.E.P. § 2143 17

Moussavi et al., “Comparison of Barrier Materials and Deposition Processes for
Copper Integration,” vi, 19

U.S. Patent No. 5,668,411 v, 6

U.S. Patent No. 5,858,873 v, 6

U.S. Patent No. 5,893,752 v, 3, 12

U.S. Patent No. 6,538,324 passim

U.S. Patent No. 6,887,353 v, 3, 12

While *Ding* 17

Wijekoon et al., “Development of a Production Worthy Copper CMP Process,”
1998 vi, 19

Zhang. Ex. 1003 11

Zhang. Ex. 1003 26

Zhang. Ex. 1004, 3:9-12 29

LIST OF EXHIBITS

- Exhibit 1001: U.S. Patent No. 6,538,324 to Tagami et al.
- Exhibit 1002: File History of U.S. Patent No. 6,538,324.
- Exhibit 1003: Expert Declaration of Dr. Sanjay Kumar Banerjee.
- Exhibit 1004: U.S. Patent No. 5,893,752 to Zhang et al.
- Exhibit 1005: U.S. Patent No. 6,887,353 to Ding et al.
- Exhibit 1006: Holloway et al., "Tantalum as a diffusion barrier between copper and silicon: Failure mechanism and effect of nitrogen additions," *Journal of Applied Physics*, 71(11), 5433-5444 (1992).
- Exhibit 1007: Sun et al., "Properties of reactively sputter-deposited Ta-N thin films," *Thin Solid Films*, 236 (1993) 347-351.
- Exhibit 1008: U.S. Patent No. 5,858,873 to Vitkavage et al.
- Exhibit 1009: U.S. Patent No. 5,668,411 to Hong et al.
- Exhibit 1010: Excerpt of El-Kareh, "Fundamentals of Semiconductor Processing Technologies," Kluwer Academic Publishers (1995).
- Exhibit 1011: Declaration of Dr. Li Jiang.
- Exhibit 1012: Library of Congress Catalog Record of Holloway et al., "Tantalum as a diffusion barrier between copper and silicon: Failure mechanism and effect of nitrogen additions," *Journal of Applied Physics*, 71(11), 5433-5444 (1992).
- Exhibit 1013: Library of Congress Catalog Record of Sun et al., "Properties of reactively sputter-deposited Ta-N thin films," *Thin Solid Films*, 236 (1993) 347-351.
- Exhibit 1014: Library of Congress Catalog Record of El-Kareh, "Fundamentals of Semiconductor Processing Technologies," Kluwer Academic Publishers (1995).
- Exhibit 1015: Stavrev et al., "Crystallographic and morphological characterization of reactively sputtered Ta, Ta-N and Ta-N-O thin films," *Thin Solid Films*, 307 (1997) 79-88.

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