

1 UNITED STATES PATENT AND TRADEMARK OFFICE  
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD

3 TAIWAN SEMICONDUCTOR Patent No. 7,808,184  
4 MANUFACTURING COMPANY, IPR 2014-00803  
LTD., et al., -- joined with --  
IPR 2014-00858  
5 Petitioners, IPR 2014-00996  
IPR 2014-01061

6  
7 vs.

8 ZOND, LLC, INC., Patent No. 7,808,184  
IPR 2014-00799  
-- joined with --  
9 Patent Owner. IPR 2014-00855  
IPR 2014-00955  
10 IPR 2014-01042

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15 VIDEOTAPED DEPOSITION OF LARRY D. HARTSOUGH, Ph.D.  
16 Berkeley, California  
17 Wednesday, February 11, 2015  
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24 REPORTED BY:  
TAVIA MANNING, CSR No. 13294, CLR, CCRR, RPR  
25 JOB NO. 90256

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February 11, 2015  
9:07 A.M.  
  
Deposition of LARRY D. HARTSOUGH, Ph.D.,  
taken on behalf of Petitioners at 200  
Marina Boulevard, Berkeley, California,  
before Tavia Manning, Certified Shorthand  
Reporter No. 13294, Certified LiveNote  
Reporter, California Certified Realtime  
Reporter, Registered Professional Reporter.

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1 APPEARANCES (CONTINUED):

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3 FOR THE PATENT OWNER ZOND, LLC:  
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10  
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13  
14  
15 Also present: Sean McGrath, Videographer

16  
17 \*\*\*

1 TSMC North America.

2 MR. HUH: Gregory Huh from Haynes and  
3 Boone, LLP, on behalf of TSMC and Fujitsu.

4 MR. McCOMBS: David McCombs, with Haynes  
5 and Boone on behalf of TSMC, TSMC North America, and  
6 Fujitsu.

7 MR. MAIER: Cosmin Maier, of WilmerHale, on  
8 behalf of The Gillette Company.

9 MR. TENNANT: David Tennant, from White &  
10 Case, on behalf of GLOBALFOUNDRIES.

11 MR. RISMILLER: Brett Rismiller, with White  
12 & Case, on behalf of GLOBALFOUNDRIES.

13 MR. VARDANIAN: Tigran Vardanian, with  
14 Radulescu, LLP, on behalf of the patent owners, Zond  
15 LLC.

16 And with me is my partner, David Radulescu,  
17 also with Radulescu, LLP, on behalf of Zond LLC.

18 MR. FITZPATRICK: Can counsel on the phone  
19 please state their names.

20 MR. VU: Yes. This is Robinson Vu, with  
21 Baker Botts, for Toshiba.

22 MR. FITZPATRICK: Go ahead.

23 MR. AGARWAL: Okay. This is Pavan Agarwal,  
24 at Foley & Lardner, for the Renesas, petitioners.

25 MR. KIM: And this is Rich Kim, with Duane

1 BERKELEY, CALIFORNIA;  
2 WEDNESDAY, FEBRUARY 11, 2015; 9:07 A.M.

3  
4 THE VIDEOGRAPHER: Good morning.

5 This is the beginning of Disk Number 1 of  
6 the videotaped deposition of Larry D. Hartsough,  
7 Ph.D., in the matter of Taiwan Semiconductor  
8 Manufacturing Company, LTD, et al., versus Zond,  
9 LLC, in the U.S. Patent and Trademark Office, before  
10 the Patent Trial and Appeal Board, Cases 2014-00799,  
11 joined with IPR 2014-00855, IPR 2014-00955, IPR  
12 2014-01042, and Case Numbers 2014-00803, joined with  
13 IPR 2014-00858, IPR 2014-00996, and IPR 2014-01061.

14 This deposition is being held at 200 Marina  
15 Boulevard, Berkeley, California, on February 11th,  
16 2015 at approximately 9:08 a.m.

17 My name is Sean McGrath from TSG Reporting,  
18 Incorporated, and I'm the legal video specialist.

19 The court reporter is Tavia Manning, in  
20 association with TSG Reporting.

21 Will counsel please introduce yourselves,  
22 starting with the questioning attorney.

23 MR. FITZPATRICK: Anthony Fitzpatrick, from  
24 Duane Morris, LLP, on behalf of petitioners, Taiwan  
25 Semiconductor Manufacturing Company, Limited, and

1 Morris, on behalf of the Taiwan Semiconductor  
2 defendants -- or petitioners, rather.

3 THE VIDEOGRAPHER: That's it?

4 Will the court reporter please swear in the  
5 witness, and we can proceed.

6  
7 LARRY HARTSOUGH, Ph.D,  
8 having been first duly sworn by the reporter,  
9 testified as follows:

10  
11 THE WITNESS: Could you please restate your  
12 name?

13 MR. FITZPATRICK: Sure. My name is Tony  
14 Fitzpatrick.

15 THE WITNESS: Fitzpatrick.

16 MR. FITZPATRICK: Good morning.

17 THE WITNESS: I do have hearing problems  
18 you've been made aware of, and so it would help me  
19 if you speak up.

20 MR. FITZPATRICK: Sure. Certainly.

21 THE WITNESS: I'll let you know.

22 MR. FITZPATRICK: Yes, please. If at any  
23 point you don't fully hear any of my questions,  
24 please let me know.

25 THE WITNESS: I will.

EXAMINATION

BY MR. FITZPATRICK:

Q. Do you understand that you've taken an oath to tell the truth today?

A. Yes.

Q. And your answers to my questions will be truthful?

A. Yes.

Q. They will be complete?

A. I will strive to make them complete.

Q. If at any point you don't understand any of my questions, will you please let me know?

A. I will.

Q. If you answer my question, I will assume that you've understood it; is that fair?

A. Yes.

Q. And you understand that if counsel for Zond makes an objection to any question, that you still are required to answer the question, unless they instruct you not to answer it?

A. I understand that.

Q. Have you ingested any medication or anything else that could impair your ability to testify truthfully and completely today?

A. No.

Q. Have you been deposed previously?

A. I have.

Q. On how many occasions?

A. I don't recall the exact number, but it is in my -- it's not on my CV, because I only go back five years in my -- what I provided to you. But, you know, on a number of occasions, probably five or six.

Q. Have you testified in court or before an arbitrator previously?

A. I have testified before an arbitration panel.

Q. On how many occasions?

A. On one.

Q. The occasions on which you were deposed previously, did those all involve expert testimony?

A. In the depositions that I made, I was always testifying as an expert.

Q. And did any of those instances involve technology relating to plasma generation?

A. Yes.

Q. All of them or some of them?

A. Most of them.

I would have to look at the details to recall my earlier ones, but in one form or another

it all dealt with plasma generation.

Q. And did they -- did they -- did any of them relate to magnetron sputtering technology?

A. Well, actually, I have to correct myself, because one of the --

Probably I should look at my CV to remind myself.

But the testimony before the arbitration panel was actually about wafer -- a wafer heating methodology. Although, it was in a sputtering system, it was really a wafer heating and cooling technology, not the sputtering part.

THE VIDEOGRAPHER: Mr. Hartsough, could you move your microphone to your tie or your other lapel?

(Pause in the proceedings.)

THE WITNESS: Do you have a copy of my CV?  
BY MR. FITZPATRICK

Q. Well, I'll show you what I do have, which is your declaration.

A. My declaration has a summary of my work experience, but -- yeah.

Q. Why don't I show you what's previously been marked as Zond Exhibit 2015 in IPR proceedings 2014-799 and 2014-803.

Do you recognize this document?

A. I do.

Q. What is it?

A. It is -- excuse me -- my declaration in regard to the U.S. Patent 7,808,184.

Q. And beginning on page 89 of the document, in Appendix A, is that a copy of your CV?

A. Yes.

Q. There's not a listing in this CV --

A. There is not a listing, yeah.

Q. -- of your prior experience testifying in depositions or before an arbitrator; correct?

A. Yes. That's correct.

I had submitted to counsel a qualification, a five-year history of cases and so on, which I presume was made available to your side.

So I don't have the list or the recollection of every single deposition that I made at this time. I just don't recall it all.

Specific cases -- I can -- I can remember that the -- well, actually, I wasn't deposed in the most recent case I had. I have to go back further than that. So it's been a while. I haven't had much depositions in the last five years.

Q. And the testimony that you provided before

1 an arbitral panel related to wafer heating  
2 methodology, you said; right?

3 A. In a sputtering system, right.

4 Q. And -- sorry.

5 Did you have more to say on that?

6 A. Another case had to do with processing  
7 of -- well, it wasn't -- it wasn't magnetron  
8 sputtering. It was a plasma processing system.

9 Q. And you have not testified in court; isn't  
10 that correct?

11 A. I have not testified in court.

12 Q. What did you do to prepare for today's  
13 deposition?

14 MR. VARDANIAN: Objection to form.

15 And caution the witness not to reveal any  
16 privileged information.

17 To the extent that you can answer without  
18 doing so, please go ahead and do so.

19 THE WITNESS: I reviewed pertinent  
20 documents to this particular case, and I met with  
21 counsel for about a day and a half.

22 BY MR. FITZPATRICK:

23 Q. When was that?

24 A. Just in this last week.

25 Q. And which counsel did you meet with?

1 THE WITNESS: Yes.

2 BY MR. FITZPATRICK:

3 Q. Did you review any other materials in  
4 forming the opinions set forth in your declaration?

5 A. What do you mean by "materials"?

6 Q. Well, you've used here, in paragraph 3, the  
7 word "materials."

8 Do you see that?

9 A. Yes.

10 Q. What did you have in mind when you used  
11 that word in your declaration?

12 A. Documents.

13 Q. Did you review any other documents, other  
14 than those listed here, in paragraph 3, in  
15 connection with forming the opinions set forth in  
16 your declaration?

17 A. In the -- in forming the opinions set forth  
18 in the declaration, I did review some other  
19 background material regarding various  
20 technologies --

21 Q. What were those?

22 A. -- just from -- to refresh my memory.

23 Textbooks that I had, articles regarding  
24 some basic technologies that were, you know, short  
25 articles online.

1 A. Mr. Vardanian and Mr. Radulescu.

2 Q. And which documents did you review?

3 A. I reviewed all of the pertinent documents  
4 that I list in paragraph 3 of my declaration, except  
5 at this recent review I did not review the file  
6 history, as I had not found it pertinent to the  
7 formation of my opinions during my preparation of my  
8 declaration.

9 Q. Did you review anything else in preparation  
10 for your deposition?

11 A. Other than the items that are listed here?

12 Q. Correct.

13 A. No.

14 Q. Now, while we're on paragraph 3 of your  
15 declaration, it lists materials that you considered  
16 in forming the opinions set forth in your  
17 declaration, and it says those materials include the  
18 '184 patent, the file history, the IPR petitions and  
19 exhibits, the board's institution decisions, and the  
20 prior art references discussed below; is that  
21 correct?

22 MR. VARDANIAN: Objection to form.

23 THE WITNESS: Sorry.

24 MR. VARDANIAN: You can answer it, if you  
25 can.

1 But mainly for background, just to  
2 refresh -- bring myself -- to refresh my  
3 understanding of the technologies in effect at that  
4 time. So just pretty basic stuff.

5 Q. When you say -- when you refer to the  
6 "technologies in effect at this time," what time are  
7 you referring to?

8 A. At the time -- you know, the patent --  
9 before the issuance of the patent.

10 Q. And what textbooks did you review?

11 A. Well, there are textbooks that I have in my  
12 possession, like one that's called "Plasma  
13 Processing for Semiconductor Processing" -- or  
14 "Plasma Processes for Semiconductor," something like  
15 that -- I don't remember exactly the name of it --  
16 to see if there were pertinent materials in there.

17 And there really wasn't much.

18 Q. Who is the author of that work?

19 A. I don't recall.

20 Q. Any other textbooks that you reviewed?

21 A. Not really.

22 I had a textbook called "Thin Film  
23 Processes" by Chopra, but it didn't really provide  
24 any information that was relevant to this patent,  
25 so...

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