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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZHUHAI COSMX BATTERY CO., LTD.,
Petitioner

V.

NINGDE AMPEREX TECHNOLOGY LTD.,
Patent Owner

IPR2025-00389
Patent 11,923,498

ORAL AND REALTIMED DEPOSITION OF

ULRICH VON SACKEN, PH.D.

APRIL 22, 2026

TAKEN VIA ZOOM VIDEOCONFERENCE

JOB NO.: 628792

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ANNETTE PELTIER, CSR, CRR

1 ORAL AND REALTIMED DEPOSITION OF ULRICH
2 VON SACKEN, PH.D., produced as a witness at
3 the instance of the Patent Owner, and duly
4 sworn, was taken in the above-styled and
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* * No Attached Exhibits * *	

1 ULRICH VON SACKEN, Ph.D.,
2 Having been first duly sworn, testified upon
3 his oath as follows:

4 EXAMINATION

5 BY MR. DOUGLAS:

6 Q. Good morning, Dr. von Sacken.

7 A. Good morning, Chris.

8 MR. DOUGLAS: So the last
9 time -- before we get started, I just wanted
10 to note on the record that the parties have
11 agreed to take this deposition remotely over
12 video, and so all the parties have agreed to
13 be in physically different locations,
14 including the court reporter.

15 BY MR. DOUGLAS:

16 Q. Dr. von Sacken, do mind stating
17 your full name and address for the record?

18 A. Ulrich von Sacken, and my address
19 is Unit 104 at 2319 Brethour Avenue, Sidney,
20 British Columbia, Canada.

21 Q. Thank you.

22 And, Dr. von Sacken, we've done

1 this before, but I just thought I'd walk
2 through the ground rules once again.

3 I'm going to be asking you
4 questions today, and you are under oath to
5 answer them truthfully and to the best of
6 your ability.

7 Do you understand that?

8 A. I do.

9 Q. And we have a court reporter
10 today, although the reporter is not
11 physically in the room with any of us, but
12 please make sure you do your best to respond
13 verbally, no head shakes or "uh-huhs," so
14 that the court reporter can accurately
15 transcribe your answers.

16 Fair enough?

17 A. I'll do my best.

18 Q. And also for the sake of the
19 court reporter, let's try not to talk at the
20 same time. I know that's hard over video,
21 but I'll do my best to make sure you're
22 finished talking before I start talking, and

1 I ask that you wait until I'm completely
2 finished asking my question before you start
3 answering.

4 Is that okay?

5 A. Yes.

6 Q. And, Dr. von Sacken, if you do
7 not understand one of my questions, please
8 let me know, but if you give me an answer, I
9 will assume that you understood the question;
10 is that fair?

11 A. Fair.

12 Q. And, finally, we'll take breaks
13 roughly every hour, but at any point feel
14 free to request a break. I only ask that if
15 there is a question pending, that you answer
16 the question before we take the break.

17 Fair enough?

18 A. Fair enough.

19 Q. Dr. von Sacken, do you understand
20 why you are here today?

21 A. I believe so.

22 Q. And why are you here today,

1 Dr. von Sacken?

2 A. To be deposed concerning the
3 contents of my declarations concerning this
4 patent case.

5 Q. And -- and by "this" case, do you
6 understand that we are currently here to talk
7 about an IPR proceeding?

8 A. Yes.

9 Q. And that IPR proceeding is
10 IPR2025-00389, correct?

11 A. Correct.

12 Q. And this relates to U.S. Patent
13 Number 11,923,498, correct?

14 A. Correct.

15 Q. And for the purposes of our
16 discussion today, will it be all right if I
17 refer to Patent Number 11,923,498 as the '498
18 patent?

19 A. That would be fine.

20 Q. Okay. That's fine.

21 And for the purposes of the
22 record, Dr. von Sacken, will you describe

1 your preparation for the deposition today?

2 A. I read over my latest declaration
3 several times, and I had a few hours with
4 the -- the lawyers for my side, going over
5 the declaration and the supporting materials.

6 Q. And when you say your "latest
7 declaration," Dr. von Sacken, are you
8 referring to what has been marked as
9 Exhibit 1033 in this IPR proceeding?

10 A. That's correct.

11 Q. And, Dr. von Sacken, do you have
12 a copy of Exhibit 1033, your declaration in
13 support of the Petitioner's reply with you
14 today?

15 A. Yes, I have that in front of me.

16 Q. And, Dr. von Sacken, does the
17 copy of Exhibit 1033 that you have in front
18 of you have any markings, highlighting, or
19 any notes?

20 A. No. It's a clean copy, delivered
21 by FedEx yesterday afternoon.

22 Q. And, Dr. von Sacken, I noticed

1 that you referred to Exhibit 1033 as your
2 latest declaration. Would it be fair to also
3 refer to Exhibit 1033 as your second
4 declaration in this IPR?

5 A. That is correct.

6 Q. Okay. And, Dr. von Sacken, just
7 to take a quick step back, similar to our
8 last deposition, we -- we also had an
9 electronic version of the exhibits we talked
10 about available via a download link, and we
11 plan to do the same in -- in this proceeding.
12 So we'll put that link in the chat for you.

13 You're -- you're -- you're free
14 to use the -- the clean copy that you have.
15 I just wanted to let you know that we'll also
16 put it in -- in the chat.

17 A. Okay.

18 Q. Dr. von Sacken, other than
19 reviewing Exhibit 1033, your second
20 declaration, what other materials did you
21 review in preparation for today's deposition?

22 A. I looked at my first declaration.

1 I looked at some of the exhibits, such as
2 Sato and Takemura. I looked at the
3 transcript of my last deposition. I think
4 those are the main things that I looked at.

5 Q. Just to make sure we're on the
6 same page, Dr. von Sacken, when you refer to
7 your "first declaration," that's the
8 declaration that's been previously marked in
9 this proceeding as Exhibit 1003; is that
10 correct?

11 A. That's correct.

12 Q. And, Dr. von Sacken, do you have
13 a copy of your first declaration,
14 Exhibit 1003, with you today?

15 A. Yes, I have it.

16 Q. And, Dr. von Sacken, is that also
17 a clean copy of Exhibit 1003?

18 A. Yes, it is.

19 Q. And, Dr. von Sacken, we put
20 those -- those -- both those declarations
21 into the chat, to the extent that you want to
22 look at an electronic version, but as I said,

1 you're free to use your paper copies.

2 Dr. von Sacken, you also noted
3 that you looked at exhibits such as Sato,
4 correct?

5 A. Correct.

6 Q. And when you refer to "Sato," are
7 you referring to what has been marked as
8 Exhibit 1005 in this proceeding?

9 A. I believe that's correct. Let me
10 find the right pile of papers. Hold on.

11 Yes, Sato is -5, 1005.

12 Q. Excellent.

13 And then for the purposes of
14 today's discussion, will you understand when
15 we are speaking about Sato, we are speaking
16 about Exhibit 1005 in this proceeding?

17 A. Understood.

18 Q. And, Dr. von Sacken, I believe
19 you also referred to a reference called
20 Takemura in your earlier answer. And is it
21 your understanding that Takemura has been
22 identified as Exhibit 1006 in this

1 proceeding?

2 A. That's correct.

3 Q. And for the purpose of our
4 conversation today, will you understand that
5 when we're referring to "Takemura," we're
6 referring to Exhibit 1006?

7 A. Understood.

8 Q. Excellent.

9 And, Dr. von Sacken, about how
10 long did you spend preparing for the
11 deposition today?

12 A. Probably about eight hours in
13 total.

14 Q. And I believe that you mentioned
15 that you met with counsel; is that correct?

16 A. Correct.

17 Q. And do you recall who was present
18 at those meetings with counsel?

19 A. It was mostly John, who was on
20 our computer, John Higgins. He's not here --
21 there he is. I just can't see his face,
22 yeah.

1 And Jason dropped in for the
2 second session.

3 Q. And was anyone who is not counsel
4 present at those preparation sessions?

5 A. No.

6 Q. Excellent.

7 And, Dr. von Sacken, I think
8 we've hinted at it, but this is your second
9 deposition in this IPR, IPR 2025-00389,
10 correct?

11 A. Correct.

12 Q. Excellent.

13 So I'd like to have you turn to
14 Paragraph 18 of your second declaration,
15 which is Exhibit 1033 in this proceeding.

16 A. Okay. I have it.

17 Q. Okay.

18 A. Yeah, I have it in front of me.

19 Q. Excellent.

20 And Paragraph 18 starts with you
21 stating, "My first declaration does not
22 propose inserting or adding Takemura's tape

1 into Sato's battery," correct?

2 A. Correct.

3 Q. And then it -- it states, "Nor
4 does my first declaration propose altering
5 Takemura's active material removal technique
6 shown in Figures 1 through 7," correct?

7 A. Correct.

8 Q. Okay. Then it continues,
9 "Rather, when addressing claim element 1.H, I
10 explained that 'it would'" be -- "'would have
11 been obvious to a POSA to apply Sato's
12 additional polypropylene adhesive tape to 'a
13 surface of the positive electrode active
14 material layer opposite to the second recess
15 across the separator in a thickness direction
16 of the positive plate,'" correct?

17 A. Correct.

18 Q. And then skipping down to about
19 the middle, there's a sentence that starts,
20 "Sato's description confirms."

21 Do you see that?

22 A. Yes.

1 Q. And it states, "Sato's
2 description confirms that this additional
3 polypropylene adhesive tape in Sato covers a
4 portion of the positive electrode active
5 layer (4B/9) to isolate that portion from the
6 negative lead and exposed metal on the
7 negative electrode where the lead is
8 attached," correct?

9 A. Correct.

10 Q. And in the sentence I just read,
11 what do you mean by "exposed metal on the
12 negative electrode"?

13 MR. FITZSIMMONS: Objection,
14 form.

15 THE WITNESS: Sorry, Jason, I
16 barely heard you.

17 MR. FITZSIMMONS: Objection,
18 form.

19 A. So where the lead is attached to
20 an electrode, the active material either has
21 to be removed or not present in the first
22 place to allow for welding. So there's

1 usually exposed metal from the current
2 collector in the vicinity of the attached
3 lead.

4 BY MR. DOUGLAS:

5 Q. Okay. And so the exposed metal
6 that you're referring to in Paragraph 18 is
7 distinct from the negative lead as you use it
8 in -- in the sentence I read to you from
9 Paragraph 18, correct?

10 MR. FITZSIMMONS: Objection,
11 form.

12 A. It is -- includes the negative
13 lead. It is also metal and it's also
14 exposed, but it also includes the current
15 collector in the vicinity of the lead.

16 BY MR. DOUGLAS:

17 Q. And the paragraph in -- or in the
18 sentence in Paragraph 18 that I read that
19 states that you "isolate that portion from
20 the negative lead and exposed metal on the
21 negative electrode where the lead is
22 attached," you're distinguishing between the

1 negative lead and the exposed metal, correct?

2 MR. FITZSIMMONS: Objection,
3 form. Mischaracterizes the witness's
4 testimony.

5 A. I'm not sure I'm clearly
6 distinguishing between exposed metal on a
7 negative lead and on the current collector.
8 For my purposes, it's all the same. It's
9 exposed metal on the negative -- around the
10 negative lead.

11 BY MR. DOUGLAS:

12 Q. And in -- in this proceeding,
13 Dr. von Sacken, we talked a lot about the use
14 of tape or insulating tape, correct?

15 A. That's correct.

16 Q. And, Dr. von Sacken, if you
17 placed tape over a negative lead and exposed
18 metal, would you consider that lead and metal
19 still exposed?

20 MR. FITZSIMMONS: Objection,
21 form and incomplete hypothetical.

22 A. Can you repeat the question,

1 please?

2 BY MR. DOUGLAS:

3 Q. Yes.

4 Dr. von Sacken, if you place tape
5 over a lead, would you consider the lead
6 still to be exposed metal?

7 MR. FITZSIMMONS: Same
8 objections.

9 A. The part covered by the tape
10 would not be exposed.

11 BY MR. DOUGLAS:

12 Q. And where you -- where you use
13 the terms "negative lead" and "exposed
14 metal," if insulating tape was placed over
15 both the negative lead and exposed metal,
16 would that lead and exposed metal still be
17 considered exposed in your -- in your
18 opinion?

19 MR. FITZSIMMONS: Objection,
20 form and incomplete hypothetical.

21 A. If the tape were large enough to
22 entirely cover all of the lead and all of the

1 exposed metal, then there would no longer be
2 any exposed metal.

3 BY MR. DOUGLAS:

4 Q. And then continuing on in
5 Paragraph 18 near the bottom of -- of the
6 page, there's a sentence that says, "While
7 Sato does not" --

8 Do you see that, Dr. von Sacken?

9 A. Yes.

10 Q. And it states, "While Sato does
11 not explicitly illustrate where the
12 additional polypropylene adhesive tape is
13 located relative to the negative lead, a POSA
14 would have understood that Sato's additional
15 polypropylene adhesive tape is located on
16 Sato's positive electrode material (4B/9) in
17 a position that faces the exposed foil 12/14
18 (recess) where Sato's negative lead 11 is
19 located to avoid lithium plating," correct?

20 A. Correct.

21 Q. And so we've just walked through
22 Paragraph 18, correct?

1 A. Yes.

2 Q. And, Dr. von Sacken, in Paragraph
3 18, do you rely on the teachings of Takemura?

4 MR. FITZSIMMONS: Objection,
5 form.

6 A. I have not -- not discussed
7 Takemura in Paragraph 18. I'm saying that
8 Sato discloses the use of the second tape.
9 BY MR. DOUGLAS:

10 Q. Okay. Dr. von Sacken, I'd like
11 to now turn to Paragraph 30 of your second
12 declaration, Exhibit 1033.

13 A. I have it in front of me.

14 Q. Okay. About -- strike that.

15 In the second sentence, you use a
16 phrase, "pattern coating."

17 Do you see that?

18 A. Yes.

19 Q. And in fairness, you may use the
20 phrase -- it may be "intermittent pattern
21 coating," but my question is, Dr. von Sacken,
22 is "patch coating" another phrase that you

1 would use to describe what you're referring
2 to as "intermittent pattern coating" in
3 Paragraph 30?

4 A. Yes, I would consider those to be
5 equivalent.

6 Q. Okay. So moving down to about
7 the sixth line, there's a sentence that
8 starts, "A POSA would have understood that
9 precise control."

10 Do you see that?

11 A. Yes.

12 Q. And it states, "A POSA would have
13 understood that precise control of the
14 machinery is needed to execute pattern
15 coating effectively and that this would be
16 challenging for high-speed manufacturing."

17 Do you see that?

18 A. Yes.

19 Q. And, Dr. von Sacken, do you have
20 experience with high-speed manufacturing?

21 A. Yes. Well, it was high-speed in
22 its day, but I haven't been in a

1 manufacturing plant for about ten years or
2 so. Maybe it's no longer considered
3 high-speed.

4 Q. And, Dr. von Sacken, is there a
5 way that you can quantify "high-speed
6 manufacturing" as it might differ between
7 what you were talking about ten years ago and
8 what might be today? I'm just trying to
9 understand your -- your last answer.

10 MR. FITZSIMMONS: Objection,
11 form.

12 A. Well, for something like a -- a
13 winding machine, you would quantify it as how
14 many windings per minute it would produce;
15 and for something like a coating machine,
16 it's the speed at which it runs, basically,
17 times the -- the width of the machine because
18 you're producing many electrodes in parallel,
19 basically.

20 So the trend is for the -- to
21 keep trying to increase the coating speed and
22 to use a wider machinery to increase output.

1 So there is lots of factors. It's a little
2 difficult to quantify easily.

3 BY MR. DOUGLAS:

4 Q. And, Dr. von Sacken, do you have
5 experience with pattern coating as you
6 describe it in Paragraph 30 of your second
7 declaration?

8 A. Yes.

9 Q. Okay. And based on your
10 experience with pattern coating, are there --
11 are there any known challenges when
12 performing pattern coating?

13 A. Yes, there's lots of factors.
14 Would you like me to list a few?

15 Q. Yes, please.

16 A. So when -- when you try to stop
17 the coating, there's generally a tailing off
18 effect, which means that the -- the coating
19 doesn't stop abruptly and cleanly the way you
20 would like. It tends to taper off; and also
21 it may be rather uneven, like basically some
22 strings that extend beyond where you want the

1 coating to end. So the term- -- coating
2 terminations can get messy.

3 And then when you begin the
4 coating, there tends to be some excess
5 material deposited at the initiation of the
6 coating, and that can be a significant
7 problem when you go to compress those
8 coatings because that lump of material
9 overcompresses the -- the current collector.
10 You're generally trying to compress these
11 electrodes as much as you can to the limits
12 of what the foil can take.

13 So that lump can then basically
14 embrittle the current collector and you get
15 breaks.

16 The third problem with the
17 pattern coating that -- is that it's upstream
18 of your winding machines. So if there's any
19 miscalculation or variance in the position of
20 the bare patch that you produce so it doesn't
21 fit into the winding properly, you've made a
22 lot of electrodes that are unusable and go

1 for scrap.

2 And that's -- those are the main
3 issues.

4 Q. And so to follow up on the third
5 problem that you just mentioned about
6 miscalculations, are -- are you talking about
7 the alignment between active material on each
8 side of an electrode?

9 A. I'm talking about the -- the
10 alignment of the two electrode -- it's more.
11 The -- you -- if you want a bare patch on the
12 positive electrode to be in a certain place
13 relative to the negative electrode over some
14 other feature in the winding, then because of
15 thickness variations, for example, these
16 things shift a little bit when you make the
17 winding and you have to allow for that. It's
18 a tricky business.

19 Q. And so understanding that
20 alignment of the two electrodes is tricky
21 business, would a person of ordinary skill in
22 the art know how to solve for the alignment

1 problem that you just walked us through?

2 A. Yes. That would be routine work
3 for a person with skill in the art, but it's
4 still -- I mean, these -- these issues exist,
5 and a POSA would have to -- to weigh the
6 effects of those issues when he decides to
7 remove material, for example.

8 Q. And I believe the first problem
9 you mention, Dr. von Sacken, you termed as
10 the trailing-off effect --

11 A. Yes.

12 Q. -- correct?

13 And the trailing-off effect
14 relates to poorly defined edges, correct?

15 A. Correct.

16 Q. And does the trailing off -- or
17 strike that.

18 Is the trailing-off effect
19 impacted by the speed at which pattern
20 coating is done?

21 A. Yes.

22 MR. FITZSIMMONS: Objection,

1 form.

2 A. Anyways, yes. The faster you
3 coat, the -- both the trailing off and the
4 bump at the start get worse the faster you
5 run your machines.

6 BY MR. DOUGLAS:

7 Q. And so is it your opinion that
8 the trailing-off effect could be mitigated by
9 a person of skill in the art by adjusting the
10 speed that the machines were run?

11 MR. FITZSIMMONS: Objection,
12 form. Objection, scope.

13 A. Well, there are various things
14 that can be done, but -- well, the -- it
15 would be simple to just slow it down, but
16 that's generally undesirable because it
17 impacts productivity.

18 BY MR. DOUGLAS:

19 Q. Dr. von Sacken, how would a
20 person of skill in the art mitigate the
21 trailing-off effect?

22 MR. FITZSIMMONS: Objection,

1 form, incomplete hypothetical.

2 A. There are things like adjusting
3 the viscosity of the -- the slurry that
4 you're coating. I mean, it depends a lot on
5 the specifics of the equipment that is used
6 for coating. There is -- it's hard to
7 generalize aside from the speed issue because
8 you can use reverse roll coaters, you can use
9 doctor blade coaters, you can use slot dye
10 coaters. They all have different
11 characteristics, so I think there's no simple
12 answer.

13 BY MR. DOUGLAS:

14 Q. In your experience,
15 Dr. von Sacken, does a person of ordinary
16 skill in the art know how to mitigate --

17 MR. FITZSIMMONS: Objection,
18 form.

19 A. Sorry, was that the complete
20 question?

21 MR. FITZSIMMONS: Was that the
22 complete question?

1 MR. DOUGLAS: No, I -- I was
2 just pausing for a second, Jason, if you'd
3 just give me a second to finish, but I agree,
4 it was not complete. Apologies.

5 Let's start again.

6 BY MR. DOUGLAS:

7 Q. In your experience,
8 Dr. von Sacken, does a person of skill in the
9 art know how to mitigate the trailing-off
10 effect as you defined it earlier in today's
11 deposition?

12 MR. FITZSIMMONS: Objection,
13 form.

14 A. A POSA would be -- would have
15 some countermeasures to mitigate the effect,
16 but it's not something that could be
17 completely eliminated if you want to run your
18 machinery fast.

19 BY MR. DOUGLAS:

20 Q. And based on your experience,
21 Dr. von Sacken, do battery manufacturers
22 perform patch coating?

1 A. Yes. It's a common -- common
2 method, certainly, of -- the short answer is
3 yes, it's common.

4 Q. Okay. Dr. von Sacken, could we
5 turn to Paragraph 31 of your declaration,
6 please, sir?

7 A. I have it in front of me, but --

8 Q. Okay.

9 A. -- I just thought I'd back up a
10 second.

11 Regarding the patch coating, it's
12 common for bare spots to extend across the
13 entire width of the coating. So it is not a
14 method suitable for making recesses that do
15 not extend the entire width of the coating.

16 Q. Still looking to Paragraph 31, in
17 the first sentence, Dr. von Sacken, you use
18 the term "laser ablation."

19 Do you see that?

20 A. Yes.

21 Q. And, Dr. von Sacken, do you have
22 any experience with laser ablation as you

1 describe it in Paragraph 31 of your second
2 declaration?

3 A. No, I do not.

4 Q. Okay. All right.

5 Dr. von Sacken, do you have the Takemura
6 reference still nearby? That's Exhibit 1006.

7 A. Yes, just give me a second to
8 unearth it.

9 Okay. I have it.

10 Q. And, Dr. von Sacken, you have a
11 paper version of Exhibit 1006, Takemura. And
12 is that a clean version?

13 A. It is.

14 Q. Okay. Will you turn to Paragraph
15 8 of -- of the Takemura reference?

16 A. Okay. I have it here.

17 Q. And, Dr. von Sacken, do you
18 recall referring to Paragraph 8 of Takemura
19 in your declarations?

20 A. Yes, I do.

21 Q. So I'd like to look at Paragraph
22 8; and starting just past halfway down,

1 there's a sentence that begins, "However, if
2 there is no..."

3 Do you see that?

4 A. I do.

5 Q. Okay. So Takemura states,
6 "However, if there is no opposing negative
7 electrode active material 4, such as the
8 positive electrode active material 3 arranged
9 around the negative electrode current
10 collector terminal 2 in Fig 9, the surface of
11 the positive electrode active material 3 has
12 to be covered with masking tape 7 or the
13 positive electrode active material 3 has to
14 be shaved off so that there is virtually no
15 positive electrode active material 3 facing
16 the negative electrode active material 4,"
17 correct?

18 A. That's correct.

19 Q. And in Paragraph 8 in the
20 sentence that I just read, when Takemura
21 refers to "no opposing negative electrode
22 active material 4," Takemura is referring to

1 exposed metal on the negative current
2 collector, correct?

3 A. That's correct.

4 MR. FITZSIMMONS: Objection,
5 form.

6 BY MR. DOUGLAS:

7 Q. And in your review of Paragraph
8 8, Dr. von Sacken, Paragraph 8 does not
9 discuss current collector terminals 1 or 2,
10 correct?

11 A. No, he doesn't mention 1 or 2.

12 Q. And current collectors --

13 A. Wait a minute. Terminal 2, he
14 does say "around the negative electrode
15 current collector terminal 2"; so he doesn't
16 refer to terminal 1, but he does refer to
17 terminal 2.

18 Q. Got it.

19 And current collector terminals 1
20 and 2 are discussed in Paragraph 7, for
21 example, correct?

22 A. Yes.

1 Q. Okay. Can we now turn to
2 Paragraph 22 of the Takemura reference,
3 please?

4 A. Okay. I have it.

5 Q. Okay. So about five lines from
6 the bottom of the page, there in Paragraph
7 22, Dr. von Sacken, there's a sentence that
8 begins, "In addition."

9 A. I see it.

10 Q. And it states, "In addition,
11 active material layers facing the current
12 collector terminals 1, 2 are not formed,
13 eliminating excess space due to the thickness
14 of the current collector terminals 1, 2, and
15 preventing lithium metal deposition due to
16 excess positive electrode active material,"
17 correct?

18 A. That's correct.

19 Q. And then in the next sentence,
20 Takemura -- next sentence of Paragraph 22,
21 Takemura introduces insulating tape 7,
22 correct?

1 A. Correct.

2 Q. And in Paragraph 22, when
3 Takemura introduces insulating tape 7, it
4 does so in terms of placing the tape opposite
5 the beginning of the winding end of the
6 negative electrode, correct?

7 A. That's what it says.

8 Q. And Paragraph 22 of Takemura does
9 not disclose insulating tape 7 being placed
10 opposite current collector terminals 1 and 2,
11 correct?

12 MR. FITZSIMMONS: Objection,
13 form.

14 A. Takemura has two methods of
15 preventing lithium plating. One is to remove
16 the active material, and one is to use
17 insulating tape; and in this embodiment, he's
18 using both. He's removed material opposite
19 tab current collector 2, and he's using tape
20 at the initiation of the -- of the winding to
21 cover a little bit of the exposed foil layer.

22 BY MR. DOUGLAS:

1 Q. But you'll agree with me, in
2 Paragraph 22, Takemura has not placed
3 insulating tape 7 opposite tab current
4 collector 2, correct?

5 A. No, he --

6 MR. FITZSIMMONS: Objection,
7 form.

8 A. Takemura's using his other method
9 of preventing the lithium plating which is to
10 remove the active material opposite the tab.

11 BY MR. DOUGLAS:

12 Q. So in this example,
13 Dr. von Sacken, Takemura is using the method
14 of removing active material opposite the tab,
15 correct?

16 A. He's using that method opposite
17 the tab, and he's using the tape opposite the
18 initiation electrode end.

19 Q. And in Paragraph 22, Takemura
20 does not disclose using insulating tape 7
21 opposite the tab, correct?

22 MR. FITZSIMMONS: Objection,

1 form; asked and answered.

2 A. He doesn't -- doesn't use the
3 tape in this embodiment, but he shows it in
4 other figures.

5 BY MR. DOUGLAS:

6 Q. Dr. von Sacken, will you turn to
7 the figures of Takemura with me, then,
8 please.

9 I believe they're on Page 13 of
10 the document that -- that you have.

11 A. You know, I think I have them
12 here.

13 Q. Okay.

14 A. Figure, specifically?

15 Q. Figure 1, please, sir.

16 A. Figure 1, got it.

17 Q. And, Dr. von Sacken, just -- just
18 for ease of review, the Takemura reference
19 that you have in front of you has a
20 translated version of the figures and then at
21 the very end a not translated. I just want
22 to make sure that you're seeing the English

1 version and you'll --

2 A. Yes.

3 Q. -- you'll know if you're in the
4 right spot because under Figure 1 there's a
5 list of parts that you can refer to.

6 Do you see that?

7 A. Yes, that's the one I'm looking
8 at.

9 Q. Okay. Excellent.

10 And so, Dr. von Sacken, is it --
11 is it fair enough that -- strike that.

12 Dr. von Sacken, under Figure 1,
13 there's a parts listing that shows parts 1
14 through 6.

15 Do you see that?

16 A. Yes.

17 Q. And then in, for example,
18 Paragraph 22 that we were just talking about,
19 Takemura rely -- refers to tape as reference
20 numeral 7.

21 A. That's right.

22 Q. Correct? Okay.

1 So, Dr. von Sacken, I'd like you
2 to look at Figure 1. And in Figure 1 of
3 Takemura, do you see tape 7?

4 A. There is no tape 7 in Figure 1
5 because this is Takemura's embodiment where
6 he uses his invention of removing the active
7 material. So there's no need for tape.

8 Q. Okay. And then turning to
9 Figure 2, Dr. von Sacken, does Figure 2 of
10 Takemura illustrate tape 7?

11 A. There's no tape 7 in Figure 2.

12 Q. Okay. Turning now to Figure 3,
13 does Takemura Figure 3 illustrate tape 7?

14 A. Yes, in Figure 3 Takemura uses
15 the tape at the winding initiation.

16 Q. Okay. Looking now at Figure 4 of
17 Takemura, does Figure 4 of Takemura
18 illustrate tape 7?

19 A. Again, in Figure 4 there is tape
20 at the winding initiation.

21 Q. Turning now to Figure 5 of
22 Takemura, does Figure 5 of Takemura

1 illustrate tape 7?

2 A. No, it does not.

3 Q. Now, on to the next page,
4 Dr. von Sacken.

5 Looking at Figure 6 of Takemura,
6 does Figure 6 illustrate tape 7?

7 A. No, it does not.

8 Q. Looking now at Figure 7 of
9 Takemura, does Figure 7 illustrate tape 7?

10 A. No, it does not.

11 Q. Turning now to Figure 8 of
12 Takemura, does Figure 8 illustrate tape 7?

13 A. Yes.

14 Q. And in Figure 8 Takemura
15 illustrates tape opposite the beginning of
16 the winding end of the negative electrode,
17 correct?

18 A. The tape is opposite the negative
19 tab, and that happens to be at the winding
20 end in this figure.

21 Q. Okay. And looking at Figure 9,
22 does Figure 9 illustrate tape 7,

1 Dr. von Sacken?

2 A. Yes.

3 Q. And in Figure 9, does Takemura
4 illustrate the tape opposite the beginning of
5 the winding end of the negative electrode?

6 A. He has tape covering the negative
7 tab and the exposed metal around it, which
8 happens to be at the winding end.

9 Q. Okay. And, Dr. von Sacken,
10 looking at Figure 10, does Figure 10 of
11 Takemura illustrate tape 7?

12 A. There is no tape in Figure 10.

13 Q. Okay. Dr. von Sacken, I forgot
14 to ask you at the beginning, do you -- do you
15 have the Kobayashi reference with you today?

16 A. Yes, I do.

17 Q. Exhibit 1008, if that's helpful.

18 A. Yes, I do. Should I dig it out?

19 Q. Would you mind, please, sir?

20 A. Okay. I have it.

21 Q. And does the -- strike that.

22 And, Dr. von Sacken, is the

1 version of Kobayashi that you have a clean
2 version?

3 A. It is.

4 Q. And for the purpose of our
5 discussion today, when I'm referring to what
6 has been marked as Exhibit 1008, will you
7 understand that I'm referring to the
8 Kobayashi reference?

9 A. Understood.

10 Q. Okay. And I think it might be
11 helpful, Dr. von Sacken, to also have your
12 second declaration, Exhibit 1003, and you
13 speak about the Kobayashi reference at
14 Paragraph 43.

15 MR. FITZSIMMONS: Chris, just
16 for the record, the second declaration, is
17 that the one you're referring to? You said
18 Exhibit 1003, which would be the first
19 declaration. I just want it to be clear for
20 the record.

21 MR. DOUGLAS: Yeah. No, you're
22 absolutely right, Jason.

1 BY MR. DOUGLAS:

2 Q. I apologize, Dr. von Sacken.

3 Second declaration, 1033.

4 A. Okay.

5 Q. Sorry about that, sir.

6 A. Paragraph 43, did you say?

7 Q. 43, sir, yes.

8 A. Okay, I have it.

9 Q. Okay. And so at the beginning of
10 Paragraph 43, you state, "As another example,
11 Kobayashi (EX 1008) discloses a second
12 battery 10 that includes an insulating
13 tape 25A applied over a recess 11f with a
14 lead tab 11a of positive electrode plate
15 11A."

16 Do you see that?

17 A. Yes.

18 Q. And if you'd turn with me to the
19 next page, same paragraph, you state,
20 "Kobayashi explains the reasoning behind the
21 placement of the insulating tape is to
22 prevent short-circuiting."

1 Do you see that?

2 A. Yes.

3 Q. And so insulating tape 25A
4 applied over recess 11f prevents
5 short-circuits, correct?

6 A. That is his intention.

7 Q. And placing insulating tape 25A
8 over recess -- recess 11f would prevent
9 short-circuiting, including short-circuiting
10 caused by lithium plating, correct?

11 A. This location on the positive tab
12 is never at risk of lithium plating.

13 Q. And, Dr. von Sacken, does
14 Kobayashi disclose placing insulating tape
15 over the negative tab?

16 A. I think there's only one figure,
17 Figure 6, which has the negative electrode in
18 it, and there is some tape on -- over that
19 tab and that's -- I believe Figure 6 is
20 Kobayashi's comparative example.
21 "Conventional example" is what he calls it.

22 Q. In looking at Figure 6, Figure 6

1 is split into Figure 6A and 6B; is that
2 correct?

3 A. Correct.

4 Q. And the -- the negative electrode
5 is shown in Figure 6B, correct?

6 A. Correct.

7 Q. And in Figure 6B, there's
8 insulating tape shown that's applied to the
9 lead; is that correct?

10 A. Correct.

11 Q. And does the insulating tape
12 applied to the negative lead in 6B prevent
13 short-circuiting caused by lithium plating?

14 A. I believe it's not an issue for
15 this conventional cell design because that
16 lead is beyond the end of the positive
17 electrode in the finished winding. So the
18 purpose of this tape would be more to prevent
19 shorts from tab burrs.

20 Q. And if the tab shown in Figure 6B
21 of Kobayashi was relocated to a centrally
22 located region that is directly opposite

1 positive active material, would the
2 insulating tape prevent short-circuiting
3 caused by lithium plating?

4 MR. FITZSIMMONS: Objection,
5 form, incomplete hypothetical.

6 A. It would have to be modified to
7 completely cover the exposed metal.

8 You'll see at the bottom where
9 there's Number 58, there's some exposed
10 current collector that would be -- if it were
11 placed like that, there would still be a risk
12 of lithium plating.

13 BY MR. DOUGLAS:

14 Q. But if the tape were to
15 completely cover the exposed metal around the
16 tab and including the tab shown in Figure 6B,
17 would the tape prevent short-circuiting
18 caused by lithium plating?

19 MR. FITZSIMMONS: Objection,
20 form, incomplete hypothetical.

21 A. If the tape were suitably sized
22 to cover all of the exposed metal, then it

1 should prevent lithium plating.

2 BY MR. DOUGLAS:

3 Q. Let's look to Paragraph 92,
4 Dr. von Sacken, of your second declaration,
5 Exhibit 1033.

6 A. 92?

7 Q. 92, yes, sir.

8 A. Got it.

9 Q. And here in Paragraph 92,
10 Dr. von Sacken, in the second line, you say,
11 "Because of this location, Kobayashi's
12 negative lead is not positioned opposite any
13 positive active material, making direct
14 insulation of the negative lead both
15 sufficient and practical in that context."

16 Do you see that?

17 A. Yes.

18 Q. And that's what you were telling
19 me a few moments ago about the location of
20 the negative lead and -- in 6B and its tape,
21 correct?

22 MR. FITZSIMMONS: Objection,

1 form.

2 A. Correct.

3 BY MR. DOUGLAS:

4 Q. And so as that paragraph
5 continues, it states, "In contrast,
6 Takemura's battery, as modified by Oh-539,
7 relocates the negative lead to a centrally
8 located region that directly opposes positive
9 active material."

10 Do you see that?

11 A. Yes.

12 Q. And then you state, "Under those
13 circumstances, a POSA would recognize that
14 insulating the opposing positive active
15 material -- rather than merely covering the
16 negative lead -- would be a more reliable
17 method of preventing lithium plating."

18 Do you see that?

19 A. Yes.

20 Q. And what do you mean that
21 insulating the opposite -- opposing positive
22 active material would be a more reliable

1 method of preventing lithium plating?

2 A. Well, one issue is that Kobayashi
3 is not showing the tape completely covering
4 the exposed metal. He seems mainly focused
5 on covering the tab itself to prevent shorts
6 from tab burrs, so that's insufficient.

7 That said, it's basically a
8 matter of making the tape large enough to
9 ensure that it completely covers all the
10 exposed metal.

11 It would be okay if it's directly
12 on the tab and the anode metal, but we're
13 starting with -- if we want -- let me back
14 up.

15 If you apply the tape directly to
16 the active cathode material, you can be a
17 little bit more assured that there's not any
18 diffusion of the lithium ions out of that.

19 Q. And so would a POSA recognize
20 that insulating the opposing positive active
21 material and covering the negative lead, as
22 you described them in Paragraph 92, to be

1 suitable alternatives for preventing lithium
2 plating?

3 A. Yes. I think you could do it
4 either way.

5 MR. DOUGLAS: I think we've
6 been going about an hour, maybe a little bit
7 longer, just based on when we got started.
8 Would now be okay for a break,
9 Dr. von Sacken?

10 THE WITNESS: That would be
11 fine with me.

12 (Break taken from 1:06 p.m. to
13 1:18 p.m.)

14 MR. DOUGLAS: Thank you,
15 Dr. von Sacken. I don't have any further
16 questions today.

17 THE WITNESS: Okay.

18 MR. FITZSIMMONS: I guess
19 we'll -- let's take a two-minute break and
20 then come back. It shouldn't be any more
21 than two minutes. Thanks.

22 (Break taken from 1:19 p.m. to

1 1:23 p.m.)

2 MR. FITZSIMMONS: No further
3 questions for Dr. von Sacken. Thanks
4 very much.

5 We can go off the record.

6 THE COURT REPORTER: I have
7 standing orders for Alston.

8 Jason, do you want a copy of
9 the deposition?

10 MR. FITZSIMMONS: Please, yeah.
11 We'll just do whatever -- we'll do the same.

12 (Deposition concluded at 1:23 p.m.)
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1 Certificate of Shorthand Reporter

2

3 I, Annette Peltier, CSR, Texas

4 Certified Realtime Reporter in and for the

5 State of Texas do hereby certify:

6 That Ulrich von Sacken, Ph.D., the
7 witness whose deposition is herein before set
8 forth, was duly sworn before the commencement
9 of such deposition and that such deposition
10 was taken before me and is a true record of
11 the testimony given by such witness.

12 I further certify that the adverse
13 party, Petitioner, was represented by counsel
14 at the deposition.

15 I further certify that the deposition
16 of Ulrich von Sacken, Ph.D., occurred via
17 Zoom videoconference on April 22, 2026,
18 commencing at 12:03 p.m. Central time to 1:23
19 p.m.

20 I further certify that I am not related
21 to any of the parties to this action by blood
22 or marriage, I am not employed by or an

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1 attorney to any of the parties to this
2 action, and that I am in no way interested,
3 financially or otherwise, in the outcome of
4 this matter.

5 IN WITNESS WHEREOF, I have hereunto set
6 my hand this 23rd day of April, 2026.

7
8 

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