

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG DISPLAY CO., LTD.,
Petitioner,

v.

PICTIVA DISPLAYS INTERNATIONAL LTD.,
Patent Owner.

IPR2024-01222 (Patent 6,949,389 B2)
IPR2024-01223 (Patent 6,949,389 B2)

Record of Oral Hearing
Held: December 9, 2025

Before MIRIAM L. QUINN, GARTH D. BAER, and JASON M. REPKO,
Administrative Patent Judges.

IPR2024-01222 (Patent 6,949,389 B2)

IPR2024-01223 (Patent 6,949,389 B2)

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1 P R O C E E D I N G S

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3 JUDGE BAER: Good afternoon, everyone. This is a combined
4 hearing for IPRs 2024-01222 and 01223. I am Judge Baer. With me is
5 Judge Repko, and Judge Quinn is here as well. If we could get the parties'
6 appearances, please. Who do we have for Petitioner?

7 MR. GARR: Good afternoon, Your Honors. David Garr for
8 Petitioner, and along with me are my colleagues, Scott Weidenfeller and
9 Derek Andros.

10 JUDGE BAER: Thank you, Mr. Garr. Will you be arguing the
11 cases?

12 MR. GARR: I will, yes.

13 JUDGE BAER: Thank you, Mr. Garr.

14 And who do we have for Patent Owner, please?

15 MS. ZHONG: For Patent Owner, Annita Zhong, and with me Mr.
16 Jonathan Lindsay, and we both will be arguing today.

17 JUDGE BAER: Thank you, Ms. Zhong.

18 Okay. We set forth our procedure in our hearing order. Just a few
19 reminders, each side is going to have 60 minutes of combined time for both
20 cases, to present your case. We do have the full record here, but if you
21 would, if you're referring to a slide or an exhibit, if you would articulate that
22 so it's clear for our record, that would be helpful.

23 Before we get going, does Counsel for Petitioner have any
24 questions?

25 MR. GARR: No, we don't. Thank you.

26 JUDGE BAER: And Counsel for Patent Owner, do you have any

1 questions?

2 MS. ZHONG: Nothing right now.

3 JUDGE BAER: Okay. Great. With that, we are ready to begin.

4 Mr. Garr, first of all, do you want to reserve any of your 60 minutes for
5 rebuttal?

6 MR. GARR: Yes, please. I'd like to reserve 15.

7 JUDGE BAER: Great. I'll turn on the clock. Give me just a
8 minute, and you go ahead and get set up.

9 MR. GARR: Thanks.

10 JUDGE BAER: And whenever you're ready, you may begin.
11 There's no hurry. Take your time getting set up, and we'll start the clock
12 when you're ready.

13 MR. GARR: Thank you very much.

14 JUDGE BAER: Actually, Mr. Garr, it looks like -- do you have
15 copies of your slides?

16 MR. GARR: I do, yes. Thank you.

17 JUDGE BAER: If you'd like to bring -- I'd like a copy. You need
18 a copy?

19 JUDGE REPKO: Sure.

20 JUDGE BAER: If you'd like to bring up a copy.

21 Ms. Zhong, do you have copies of your slides?

22 MS. ZHONG: Yes.

23 JUDGE BAER: Why don't we take care of that ahead of time?

24 Thank you. Thank you. And actually, before we get going, I understand
25 there are some confidential materials that will be discussed. Is that correct?

26 Let's start with Petitioner. Any concerns about confidential

1 information?

2 MR. GARR: We don't plan to discuss anything confidential in our
3 presentation.

4 JUDGE BAER: Okay. And for Patent Owner, Ms. Zhong?

5 MS. ZHONG: I hope not to. There's only one slide that may
6 implicate confidential information, and we will not discuss this.

7 JUDGE BAER: Okay. At this point, I believe we do have a public
8 line, so if we need to disconnect that, please just let us know.

9 MS. ZHONG: Yep.

10 JUDGE BAER: You can also, of course, just show the slide and
11 sort of refer to the materials without, you know, saying them out loud. I
12 don't think we have a visual public line, so that's fine, too.

13 MS. ZHONG: Okay.

14 JUDGE BAER: Is that agreeable, Ms. Zhong?

15 MS. ZHONG: That's fine.

16 JUDGE BAER: And for Petitioner, is that agreeable?

17 MR. GARR: Yes.

18 JUDGE BAER: Great. Thank you. Mr. Garr, give us just a
19 minute.

20 MR. GARR: Sure.

21 JUDGE BAER: And we're ready to begin when you are, Mr. Garr.

22 MR. GARR: Wonderful. And we're going -- I'm going to be
23 going in order. I'll just start with petition 1 and then go into petition 2.

24 JUDGE BAER: That's just fine.

25 MR. GARR: Okay. Great. Okay. Good afternoon, Your Honors.
26 I'm going to start with the '1222 petition, in which there were five grounds of

1 unpatentability, based on two primary references: Yamazaki and Weaver.
2 Now, some of the central disputes in these cases revolve on whether the
3 references satisfy the planarization layer and the selectively depositing
4 limitations of the '389 Patent. Patent Owner has raised a number of
5 arguments about the claim construction of these terms, so I'm going to touch
6 on that issue first.

7 Now, for both planarization layer and selectively depositing, we
8 did not propose specific instructions to those terms in the petition, and the
9 reason was because we did not think it was necessary to do so in order to
10 resolve the issues as we presented them in the petitions. And as an example,
11 I'm going to start with the planarization layer, and I'm going to turn to Slide
12 8 of my presentation. This shows excerpts from the Yamazaki and Weaver
13 references that are the primary references in the first petition.

14 JUDGE BAER: Mr. Garr, before we jump into what the prior art
15 has, let's go to your Slide 4, and you have Patent Owner's construction there.

16 MR. GARR: Yes.

17 JUDGE BAER: Do you dispute this construction?

18 MR. GARR: No, we don't dispute it. Sorry. I got to make sure
19 I'm in the right mouse position. Our position is that it doesn't matter what
20 the construction is for this --

21 JUDGE BAER: I understand that, but you do not dispute this
22 construction.

23 MR. GARR: No.

24 JUDGE BAER: You would say this is the correct construction.
25 It's the right construction. This is your construction, as well. Is that right?

26 MR. GARR: We have no problem with the construction. We

1 think it's a reasonable one.

2 JUDGE BAER: Okay. Thank you.

3 MR. GARR: The position that we have is that it would come out
4 the same way either way.

5 JUDGE BAER: I understand.

6 MR. GARR: And that's why we didn't propose it in the petition.
7 And I just wanted to point out, turning to Slide 8, this gives an example of
8 why we didn't feel it was necessary to propose a construction in the petition
9 when assessing -- when advancing grounds based on Yamazaki and Weaver.
10 Yamazaki, and I'll talk about these in more detail, discloses a cover layer
11 that has planarity. And Weaver, on the right, discloses planarizing layers
12 made of planarizing material, so --

13 JUDGE BAER: Now, when you say that this is the correct
14 construction, is that because this is how somebody of skill in the art would
15 understand that word, when you say planarity or planarization? Is it that
16 these two features, we could call it the smoothing feature and the flattening
17 feature, is it because when a person of skill in the art reads that in the prior
18 art or in the patent, that's what they understand, or is it particular to this
19 patent?

20 MR. GARR: Certainly, in connection with this patent, we think it
21 would be a reasonable construction. It describes the specification of the '389
22 Patent, touches on these concepts. And so, in terms of what a person would
23 understand, certainly, and I'll turn it back to construction on Slide 4, a layer
24 of material that planarizes such that propagation of defects can be
25 interrupted and the topography is not reproduced. Those are both aspects of
26 the planarization layer as it's described and discussed in the '389

1 specification.

2 JUDGE BAER: And when -- I guess my question is, is that
3 specific to the '389 Patent? In other words, when a person of skill in the art
4 is reading a prior art reference, and it says planarization or planarity, does
5 that mean something different in the context of the prior art as compared to
6 the patent?

7 MR. GARR: I understand, Your Honor. No, we don't think, in
8 general, it has a different meaning within the patent that we think that
9 persons of skill in the art would understand planarization layers in this field
10 of endeavor to accomplish both of those aspects of interrupting defects and
11 ensuring the topography of the underlying layer is not reproduced.

12 So, just one last point on planarization layer, the Patent Owner
13 argues that we're taking inconsistent claim construction positions simply
14 because the specific construction, which hadn't been proposed at the time of
15 the petitions, was not literally addressed in the petition. We think that's
16 illogical because the references satisfy the planarization layer for the same
17 substantive reasons that are discussed in the petition.

18 JUDGE QUINN: Counsel, this is Judge Quinn here. Part of the
19 construction that you've advanced here refers to the topography of the
20 underlying layer, and from your Slide 8. What portions of the specification
21 actually speak to this topography? If you can, help me with that.

22 MR. GARR: One example, Your Honor, would just be in column
23 1 of the '389 Patent, which describes, in the background of the invention,
24 that typically, for PML structures, a planarization layer is formed on top of
25 an OLED structure, and it's provided to give a planar surface for the
26 deposition of the PML structure 112a. And this is being discussed in

1 connection with Figure 1 of the '389 Patent, which I'm going to just put up
2 on the board if I can.

3 So, this is the image that's being referenced in the portion of the
4 specification that I read, and it explains that planarization layer 106 is giving
5 a planar structure for the deposition of what comes on top of it. So, you can
6 see 104 here is the OLED. The 106 planarization layer creates a flat surface
7 on top of it so that the next layers on top of that can be sort of more
8 planarized in shape. So --

9 JUDGE QUINN: (CROSSTALK) -- Oh, I'm sorry.

10 JUDGE BAER: I think what Judge Quinn was saying -- it uses the
11 same word here, planar and planarization, and what Judge Quinn was asking
12 was particularly about the topography not being reproduced. Where is that
13 in the specification?

14 MR. GARR: I'm doing my best to explain where I see that, and I'd
15 say it's just, the topography is visually depicted here with 104 being, you
16 know, raised above the substrate where it is, and so that if you looked sort of
17 -- if you were to go put something down directly on 104, that's a uneven
18 topography. It juts up with respect to substrate 102. So, if you were to put
19 layer 108 directly on top of 104, it would have a, you know, stair/step shape.
20 And so, this shows a smoothing of that.

21 JUDGE QUINN: So, I question that because that Figure 1 also
22 describes a PML structure 112, and that also contains a planarization layer
23 110, which does not have the change in topography.

24 MR. GARR: As it's drawn here, I would agree with that. It does
25 not show -- not depict any visibly apparent topographical variations. But if
26 it's a planarization layer, the -- I think the way that would be interpreted is it

1 was something that would cause that flattening in the event of variations
2 below it.

3 JUDGE QUINN: Well, what I'm trying to get at is that whatever it
4 is flattening doesn't necessarily need to be the entire OLED structure. It
5 could be the surface irregularities that are formed in the underlying layer. Is
6 that right?

7 MR. GARR: I think I agree with that. I think the idea is that a
8 planarization layer is going to smooth out irregularities, whether those
9 irregularities are sort of unintentional, in the case of a defect, or deliberate,
10 in the case of a structure that's raised higher than its surrounding area. The
11 planarization layer will cause those variations to be -- not to reproduce as
12 -- onto the layers above it.

13 JUDGE QUINN: All right. Thank you. And then I want to ask
14 you also about the source of the construction. I understand, is the claim
15 construction from the district court?

16 MR. GARR: That's correct. And I have to acknowledge that I'm
17 not of record in that case. That's Samsung Electronics, so we're not
18 representing them there, but that's my understanding is that it was an agreed
19 construction between the litigants in the district court.

20 JUDGE QUINN: I understand that, but you did introduce into the
21 record Exhibit 2048, which is a Claim Construction Order --

22 MR. GARR: Yes.

23 JUDGE QUINN: -- which has the judges' analysis of how that
24 construction Samsung proposed is supported by the specification. And from
25 reading it, it looks like the page 18 of Exhibit 2048, that the explanation
26 provided for support for that topography came from the file history and

1 some argument concerning whether metals and the topography that would be
2 reproduced with metals, as opposed to some other material. Can you explain
3 that or elucidate on that, or is what we have in the order is what we have?

4 MR. GARR: I'm not sure exactly what the question is, but I would
5 -- if there's a particular one, I can try to address it on my rebuttal time.

6 JUDGE QUINN: Well, are you prepared to discuss the analysis
7 that is provided in Exhibit 2048?

8 MR. GARR: At a high level, yes. If there are particular questions,
9 I'm not sure what they would be, but they're get --

10 JUDGE QUINN: What portion in the file history supports the
11 example that the Court provided about Applicants explaining how metal can
12 produce the topography of the underlying layer, and therefore, cannot be
13 used as a planarization layer?

14 MR. GARR: So I think this relates to the rejection relating to
15 metal studs in the Palmans reference. And they determined there -- the
16 determination there was that the metals would not be sufficient, were not be
17 able to serve the function of covering up the imperfections of the underlying
18 layer, and rather, would reproduce the topology of it. And so, that's sort of
19 characteristic of what happens is an organic layer, such as you see in some
20 of the reference being discussed here, will serve that function of making sure
21 the things below it don't get propagated up.

22 In contrast, metals, such as the one being discussed here, or such as
23 the gold sealing layer in the -- the gold conductive sealing film in the Kijima
24 reference, will not cause that planarizing function to take place. And so, in
25 Kijima, for example, to the extent there are irregularities on the cathode,
26 those irregularities would propagate up and be on the surface of the

1 conductive sealing film in that reference, which is why we believe it would
2 be obvious to add a planarization layer onto that, for example, because the
3 idea is that you want a smooth surface for your barrier layer, and so you
4 want something underneath it that will cause that to happen.

5 JUDGE QUINN: Okay. So what I'm hearing is that this is a
6 function of the material itself, like an organic material versus a metallic
7 material; is that right?

8 MR. GARR: I think as generally of -- at a general level, yes, that
9 is.

10 JUDGE QUINN: All right. Thank you.

11 MR. GARR: Okay. Let me turn to selectively depositing, which
12 is addressed on our Slide 5. Here, we have a slightly different scenario in
13 that the Patent Owner has argued that the Board should adopt the
14 construction that was proposed by the Defendants, even though the Patent
15 Owner thinks it's incorrect, and even though it was not adopted by the Court.

16 Again, our position on this is that it doesn't matter. We don't think
17 there is any inconsistency between our positions here and the proposed
18 construction that you see here on Slide 5, and that the references satisfy it
19 even if this construction were to be adopted, but -- and I can get into that as
20 we go through the references. But again, we just -- we think it would satisfy
21 under these district court constructions, if they were to be adopted.

22 Okay. So let me turn to Yamazaki, and I'm going to go to our
23 Slide 20. So Yamazaki discloses a number of embodiments. Here, on the
24 board, are examples, Figures 11 and 14, and these both show OLED displays
25 in blue that are encapsulated with what Yamazaki calls a cover layer in
26 purple, which serves the planarizing function, and a barrier layer in yellow.

1 And so, if I can address the aspects of the district court
2 construction, I'm going to turn to Slide 22. We think the -- serving the
3 function that the topography is not reproduced is evident both from the texts,
4 which describes that this material that's forming the cover layer has
5 planarity, and from the image, which shows the planar surface.

6 And then, for the second aspect, I'm going to turn to Slide 23.
7 Although we acknowledge that the reference does not specifically discuss
8 defects, that a person of skill in the art -- and we've explained -- would
9 understand that Yamazaki's layer would interrupt the propagation of defects,
10 it was known that defects are inevitable on -- in forming devices, such as the
11 OLEDs in Yamazaki, and it would be known that an organic layer, such as
12 the cover, the cover disclosed in Yamazaki, would interrupt them and make
13 a smooth surface.

14 There is some disagreement from the other side about whether
15 Yamazaki's layer would be thick enough to serve the planarizing function.
16 And I would just point out -- I'd point out a couple things. First of all, our
17 expert, Dr. Subramanian, has explained that it would be thick enough. And
18 if the Board is interested in hearing more about that, I would refer you to his
19 reply deposition, Exhibit 2050, starting at page 28, where he walked through
20 that in some level of detail with Counsel, explaining why the Yamazaki's
21 disclosures and the sort of dimensions there would be sufficient to cause that
22 interruption of defects.

23 And I'd also point out that Yamazaki discloses that if the
24 planarization needs to be -- or it discloses that the planarization layer can be
25 made more thick, if necessary. And so, for both of those reasons, we think
26 this would serve the planarizing function of interrupting defects, Yamazaki's

1 cover layer.

2 I'm going to turn to the obviousness modification, and for that, I'm
3 going to turn to our Slide 27. Now, Yamazaki only specifically discusses
4 encapsulating a single device. But as we've explained, and as the admitted
5 prior art and other art of record, including Ghosh that we've applied here, as
6 those references and admitted art both independently make clear, it was
7 known that OLED displays, such as this, were commonly manufactured in
8 bulk.

9 And so, what we've shown here, on Slide 27, is just reproduced
10 from our, I believe, the petition, where we showed what that would look like
11 when you were to use a bulk manufacturing method, based on a large sheet
12 of substrate, to manufacture multiple devices, such as those in Yamazaki, at
13 a time.

14 And there are two aspects of this, of this modification, for which
15 the Patent Owner has raised disputes. One concerns whether the barrier
16 layer would be selectively deposited. Yamazaki expressly discloses that the
17 barrier layer, for example, in the Figure 11 embodiment, is, quote, formed
18 selectively using a shadow mask. That's from paragraph 183. And you can
19 see in other embodiments, including Figure 14, and also Figures 1B, 9B, and
20 13, that this barrier layer is consistently drawn in a selective manner.

21 So, if Yamazaki were to be modified in this situation where you're
22 going to make it in bulk, then the barrier layer would remain selective.
23 There's no reason to depart and to change from the manufacturing
24 methodology that Yamazaki discusses to a different one where the barrier
25 layer would be totally, you know -- or non-selective. And you can see, for
26 example, in Figure 14, how the cover layer in yellow sort of goes up, along,

1 and down, over the sides of the planarization layer. The sort of connector
2 for the -- I think it's called the FPC connector -- is exposed. There isn't a
3 reason why someone would depart from this approach to make a uniform
4 cover letter -- cover layer.

5 The other aspects that is disputed has to do with Yamazaki's
6 teaching that the cover layer can be deposited by inkjet. This is what we're
7 reading on the planarization layer. And arguments have been raised about
8 whether a POSA would have been motivated to use inkjet or would have
9 found it appropriate to use inkjet to put down the cover layer. Again, we
10 think this is sort of -- doesn't make much sense, because Yamazaki expressly
11 teaches forming this using an inkjet. And so, if you were to modify it and
12 make multiple Yamazakis at the same time, there's no reason why you
13 would depart from that.

14 There is arguments about how inkjet may be more challenging
15 when you have a larger layer of encapsulation, but we're not actually
16 enlarging the layer here. It's just multiple devices. So there's no reason
17 why, if Yamazaki teaches you, for example, in the Figure 11 embodiment,
18 that the cover layer, the planarization layer, is used -- formed by inkjet, why
19 you wouldn't continue to do it the same way when you are making it in bulk.

20 JUDGE QUINN: Well, I would like to ask you, you just said that,
21 concerning the arguments about the thickness of Yamazaki, that Yamazaki
22 suggests that it could be a lot thicker to get above 500 -- is it nanometers, I
23 think? So, if you're saying that it could do that with -- that if there is a
24 disclosure in Yamazaki that says you can make it thicker, and it discloses
25 using inkjet, then could we presume then that the inkjet would be
26 appropriate to accomplish the layers that are above 500 nanometers?

1 MR. GARR: So, you're talking, if one were to make a thicker
2 layer, and wanted to make it thicker than 500 nanometers, could inkjet still
3 be used? If that's the question, I think the answer is yes. And I think what
4 Yamazaki says is that you could make multiple passes. But that was a
5 slightly different argument than what I was just trying to address, which had
6 to do with --

7 JUDGE QUINN: I understand that.

8 MR. GARR: Okay.

9 JUDGE QUINN: But they're all interrelated.

10 MR. GARR: Yes.

11 JUDGE QUINN: If you're saying that Yamazaki could make the
12 encapsulation a lot bigger, and it also discloses inkjet, but all we're doing is
13 repeating it, not making it bigger, you're defeating one argument with the
14 other. So, just to be consistent, if you want to make the encapsulation layer
15 thick, right, to rebut what Patent Owner is saying about the thickness, then
16 you can still do that with the inkjet method, even if you're producing
17 multiples of these on a substrate.

18 MR. GARR: I think that's correct. I might be missing the
19 question, but I agree with what you just said.

20 JUDGE QUINN: Well, does -- and I asked you, does Yamazaki
21 suggest that that is the case, merely because it discloses inkjet method and
22 that you could also make the encapsulation layer thicker?

23 MR. GARR: Let me pull up Yamazaki, so I can make sure to have
24 the disclosure in front of me. I'm not immediately finding what I'm looking
25 for, but I guess I understand the thickness issue and the making multiple
26 instances of it as somewhat independent of each other, and I want to make

1 sure I understand the question about why Your Honor sees an inconsistency,
2 because I might be missing that question.

3 JUDGE QUINN: My question was actually a softball, in that I'm
4 asking you about what Yamazaki would suggest to a person of skill in the
5 art, and if you have both disclosures that you have an inkjet method of
6 depositing a layer, and a disclosure that you can make that layer thicker if
7 you wanted to, but regardless of how you are putting -- how many of these
8 you're putting on a substrate, Yamazaki suggests that both can be done,
9 inkjet plus a thick layer.

10 MR. GARR: I agree with that. Yes, Your Honor.

11 JUDGE QUINN: Okay. Thank you.

12 MR. GARR: Okay. I want to address the Weaver reference, and
13 on Slide 34, we have just some of the basics of Weaver. This reference
14 discloses an OLED device, shown in blue here, in Figure 6, encapsulated
15 with a multilayer barrier region comprising an alternating series of
16 planarizing layers 151a-c and high-density layers 152a-c. We have
17 explained in our briefing and in the reply why we think the planarizing layer
18 here plainly satisfies the planarization layer requirement.

19 I'm going to turn to Slide 30. Actually, I'm going to stay on Slide
20 34 and just note that the images here are reflective of a directed deposition
21 process, where the layers sort of get larger as you get above it, as you keep
22 going, and as a result, they sort of cover the top and then kind of go down
23 the sides of each other. And the reference explains why that's advantageous.

24 In terms of the specific deposition process, Slide 37 shows the
25 apparatus that Weaver discloses in connection with this issue. I don't
26 believe there is a dispute that this apparatus in Figure 8 is not -- there's not a

1 -- I don't believe there's a serious dispute that this is selective deposition.
2 There's a question as to whether the reference teaches you using this process
3 in connection with the upper barrier layer 150. And we think that's a
4 reasonable interpretation and the interpretation that a person of skill would
5 have.

6 But I wanted to point one more thing out, and we talk about in the
7 brief -- to the extent that there's a question as to whether Weaver specifically
8 discloses using Figure 8 with that upper layer, first of all, we've explained
9 that we think it would be obvious to use it. And second of all, we have a
10 number of combination grounds, such as the Burrows Ground, which is
11 Ground 5 of petition number 1, which explain multiple alternative selective
12 deposition processes or approaches that would be obvious to use in
13 connection with -- in connection with Weaver.

14 And I just want to point out the Burrows one in particular, because
15 there have been some questions raised as to whether this idea of a roll-to-roll
16 deposition is suitable for the upper barrier layer. The Burrows reference,
17 although it hasn't had a lot of focus during the briefing, is very similar to the
18 structure of Burrows. And in fact, the Patent Owner characterized Burrows
19 as proposing the same wraparound structure as Weaver. That's in the Patent
20 Owner Response at 66.

21 And what we've explained in our petition at page 88, going into 89
22 perhaps, is that Burrows teaches the use of shadow masks in a similar roll
23 coating process that uses decoupling material deposition stations, essentially
24 for planarizing material, and barrier deposition stations. So, to the extent
25 there's a question as to whether Weaver provides enough of a disclosure on
26 this, the Burrows Ground and the Burrows reference provides an alternative

1 that sort of, I believe, answers those concerns.

2 I want to touch on conception, and for that, I will turn to -- sorry
3 for the flipping around -- Slide 11. The Patent Owner's asserted evidence of
4 early conception is this one-page email chain that's been discussed in the
5 briefing. As we've explained -- and here, I'm turning to Slide 12 -- there are
6 a lot of -- there's a lot of language in this that suggests this was not a definite
7 and permanent idea. For example, these are all just undeveloped ideas.

8 And I'm looking forward to keep this discussion rolling. And I
9 wanted to point out that this is not just sort of a language issue, but I think
10 we've discussed -- and I'm going to turn to Slide 15 -- that these are three
11 different emails in an email chain. And the Frischknecht email and the
12 Pichler email are suggesting different approaches, and I think that's further
13 reflective of why Pichler's email concludes by saying, I'm looking forward to
14 keeping this discussion rolling.

15 The Frischknecht email, which is proposed as -- or is being
16 asserted as evidence of conception for selective deposition of a planarization
17 layer, proposes vapor deposition through a shadow mask for that layer.
18 Pichler, in turn, proposes a different approach for the organic layer that
19 would not be selective as we understand it. And so, it's not just the fact that
20 there is comments throughout about these being undeveloped ideas, and we
21 haven't tested them, but there's actually not quite a meeting of the minds as
22 to what should be used.

23 And I would note that the Pichler's email -- the Pichler email,
24 which suggests blanket deposition of the organic layer followed by removal,
25 is actually consistent with the Figure 3 and 4 embodiments of the '389
26 Patent, not the -- which do not involve selective deposition of the

1 planarization layer.

2 And I would just refer the Board, on that point, to Mr. Humphrey's
3 deposition. That's the expert for the Patent Owner, in Exhibit 1035, and I'm
4 going to try to pull it up here. I've got page -- this is from page 112 of
5 Exhibit 1035. I'm asking him about the Frischknecht -- or excuse me
6 -- about the Pichler email. And the Patent Owner's expert agrees that while
7 this may be a selective barrier deposition, it would not necessarily be
8 selective for the organic layer, based on this particular email.

9 And why not? Well, he goes on, Pichler, to talk about cross-
10 linking through a mask, that would suggest a blanket coating, and then using
11 a mask to cross-section a portion, and then remove it, or using the barrier,
12 the selective barrier, as a mask. So these are not selective deposition
13 approaches for the organic layer. And rather, they line up with different
14 embodiments of the '389 Patent that line up to different claims that are not
15 the subject of the IPR.

16 The other thing I wanted to stress on the conception email is that it
17 never discusses a planarization layer. The Patent Owner relies on the
18 reference to PML encapsulation as being sufficient to show that the -- that
19 there is an invention of a planarization layer, but there is no evidence in the
20 email, there is no testimony from the inventor, and there is nothing
21 contemporaneous to show that that was being understood. There's certainly
22 nothing to suggest that -- to get into the details of interrupting defects or
23 topology; it's just a mere reference to PML. The art --

24 JUDGE QUINN: So I want to ask you about that because there
25 was a deposition of Dr. Andreadis, I think it is.

26 MR. GARR: Antoniadis, yes.

1 JUDGE QUINN: Yes, Antoniadis. And a portion of that in the
2 record shows that he understood, when they were talking about the various
3 layers that Mr. Pichler is discussing -- or rather, Dr. Pichler that these were
4 referring to encapsulation and PML structures, and that these folks were
5 experts in this field. Why should that not inform us as to what the
6 understanding of a person of skill in the art is when reading their emails that
7 to include the various encapsulation layers that we are discussing here,
8 which is the planarization layer and the barrier layer?

9 MR. GARR: I think it may inform it, but it does not provide -- I'm
10 not sure that it provides evidence that it was a planarization layer as
11 envisioned at the time.

12 JUDGE QUINN: Well, I mean, you and I can read it, and it
13 doesn't say that to us because there is no word planar or planarized used.
14 But in the context of the discussion and using it in the context of the PML
15 structure that is known to be used for encapsulating devices on a substrate,
16 this would have to include a planarization layer; the inventors understood
17 that to be the case. Why is that not the case?

18 MR. GARR: I think I take your point here, but it's difficult to sort
19 of square the idea that a PML alone is sufficient to disclose a planarization
20 layer that the Patent Owner is arguing with the simultaneous arguments that
21 references, such as Yamazaki and Weaver, which discuss planarity and
22 planarizing, are at the same time insufficient.

23 JUDGE QUINN: Oh, so it's an inconsistent issue, not really
24 whether it discloses it or not.

25 MR. GARR: It certainly does not meet the level of disclosure that
26 the Patent Owner has been indicating that you need to find in the prior art,

1 nowhere close to that.

2 JUDGE QUINN: Well, I mean, we can decide one way or another
3 whether it discloses it or not and then take on whatever Patent Owner is
4 arguing for consistency's sake and whether that is the case. But for the issue
5 of conception, which is what we're arguing about here -- or, well, they're
6 trying to figure out what it says -- why it -- I want to know why isn't it
7 reasonable to conclude that when the inventors are referring to PML, that
8 that does not include a planarization layer?

9 MR. GARR: It may be, as a matter of obviousness or something,
10 that it would be obvious to use it as a planarization layer, but in terms of the
11 level of documentary proof and corroboration to show conception, we think
12 it's lacking.

13 JUDGE BAER: Is there any evidence anywhere in the record of a
14 PML layer that doesn't include a planarization layer?

15 MR. GARR: I am not aware of any.

16 JUDGE BAER: And then, several of the references, as I recall,
17 between the two cases, actually refer to the layer as a PML layer. Can you
18 remind me which of the two layers are -- that the prior art actually says these
19 are PML layers?

20 MR. GARR: I wonder if you might be thinking of the deposition
21 of the Patent Owner's expert because I did -- and if I'm wrong, you can
22 explain it. I just want to bring it up. I was asking Mr. Humphrey during his
23 deposition about the Yamazaki and, I believe, Weaver references, and
24 whether they were PML. I think it's Weaver, certainly Yamazaki and one
25 other. And he agreed that they were PML, even though the terms didn't
26 appear in the references, but I don't know offhand which references use the

1 specific term PML. If you'd like me to check on that, I can.

2 JUDGE BAER: Thank you.

3 MR. GARR: I want to just -- I know I'm almost out of time. I

4 want to touch, really briefly --

5 JUDGE REPKO: Before you do that, I do have a

6 -- (CROSSTALK) --

7 JUDGE QUINN: I do have a question for you.

8 MR. GARR: Sure, sure, sure.

9 JUDGE QUINN: Your expert, Dr. Subramanian, testified as to the
10 state of the art before 2002, and I'm particularly intrigued by paragraph 28 of
11 his declaration testimony in this case. It does say that prior to 2002, a
12 multilayer structure for an OLED had a typical PML structure that included
13 a planarization layer. So is it -- what is your contention about relying on
14 paragraph 28 as to the understanding of a person of skill in the art
15 concerning PML structures including a planarization layer?

16 MR. GARR: I think they would understand that they typically
17 include them. As far as whether they always include them and whether that
18 layer was always sufficiently thick to accomplish the function of
19 planarization in that particular function, or in that particular application,
20 there could be a question. But yes, it is -- I think we would acknowledge,
21 and Dr. Subramanian's testimony would support that it was common for
22 planarization layers to be used in PML structures.

23 JUDGE REPKO: So, with that in mind, reading this conversation
24 that you have here, we think they're talking about planarization levels in that
25 PML.

26 MR. GARR: They may be, but I would just -- we would say the

1 level of proof is not adequate to show that it satisfies the requirement in this
2 case.

3 JUDGE REPKO: So this particular exhibit also has invention
4 disclosures in there as well that discuss PML technology, correct?

5 MR. GARR: Yes, although they were subsequent to this email.

6 JUDGE REPKO: Right. It was in October or something, right?

7 MR. GARR: Yes.

8 JUDGE REPKO: What is the relevance of this? How should we
9 read this conversation in view of those which discuss PML having planar
10 layers?

11 MR. GARR: It's just a question of timing. It's just a question of
12 whether this email was sufficient to disclose it as of the time of February
13 2001. Certainly, by the time of those disclosures and by the time of the
14 patent filing, the planarization layer was in there. And the question is, can
15 we show that this was conceived beforehand, and it seems to be a bit of
16 circular logic to say, because they later on described it as a planarization
17 layer, that that's what they were meaning in the original email.

18 JUDGE REPKO: So we have evidence that says, typically, these
19 PML technology involves the planar layer. We know that just sort of at that
20 -- at the time of this conversation, that was correct, right? And we also have,
21 maybe a couple months later, the invention disclosure that explicitly states
22 that the PML technology involved planar layers. So what happened between
23 October and whenever this was? You know, February, right? I mean, did
24 technology change that much that it couldn't have been talking about a
25 different technology, and I guess that's -- because the issue is really what are
26 these folks talking about, right?

1 MR. GARR: Yep. I just don't know what the particular date at
2 which it became common knowledge. This was sort of earlier than the filing
3 date of the patent. So, by the time of the filing the patent, that was common
4 knowledge; I don't know if back in 2001, it was as common.

5 JUDGE REPKO: October of 2001 is when you had the invention
6 disclosure.

7 MR. GARR: Yep.

8 JUDGE REPKO: So it's like eight months before. You don't think
9 the invention disclosure says anything about what they may have been
10 talking about in this conversation?

11 MR. GARR: I think it's -- it may be instructive, but it's not -- it's
12 not clear.

13 JUDGE REPKO: Thank you.

14 MR. GARR: Sir?

15 JUDGE BAER: In the time you have, could you just briefly
16 address the Kijima reference --

17 MR. GARR: Yes.

18 JUDGE BAER: -- and its disclosure of this planarization layer?

19 MR. GARR: Okay. So, Kijima is Ground 1 of the second petition,
20 so I'm switching to '1223 now, just for the record. So, Kijima does not
21 disclose a planarization layer. Kijima discloses the structure you see here,
22 on Slide 46.

23 JUDGE BAER: And just to be clear, you're right. I meant Suzuki.

24 MR. GARR: Oh, okay.

25 JUDGE BAER: Could you discuss Suzuki's planarization layer in
26 the second petition?

1 MR. GARR: Yes.

2 JUDGE BAER: Thank you.

3 MR. GARR: So let me turn to Slide 49 of our presentation. Here,
4 we have some disclosures from Suzuki, on the left, that explains that the
5 organic barrier layer 20, colored in purple, covers defects and makes a
6 smooth surface on the relatively irregular surface of the cathode. And as I
7 think this sort of logically suggests, and as Dr. Subramanian's testimony
8 expands upon, what this indicates is that the smoothing function of the
9 planarization layer, or what's called here, the organic barrier layer, would
10 serve the function and would be recognized to serve the function of both
11 covering intentional defects, such as the fact that the blue juts up above the
12 brown substrate.

13 Sorry. I didn't -- sort of, just to back up, the blue in this picture,
14 Suzuki Figure 1, is the organic layer stack. The brown at the bottom is the
15 substrate. So, you see, the picture shows the layer 20 as sort of causing
16 some rounding of the corners. So, I think the understanding, and what we
17 think Dr. Subramanian has helped explain, is that this means that the
18 planarizing layer, the organic barrier layer 20, is serving the function of
19 smoothing out both unintentional defects and sort of known topographical
20 variations.

21 JUDGE BAER: But just to be clear, the second part of that, the
22 known topographical variations, is just from the picture, correct? It's just
23 from the apparent smoothing of that corner of layer 20 that's in purple in
24 Figure 1. It's not a direct disclosure in Suzuki, or it is from the text of
25 Suzuki?

26 MR. GARR: I think saying it makes a smooth surface on a

1 relatively irregular surface sort of just logically means that if you have an
2 irregular surface, whether that was deliberately irregular or inadvertently
3 irregular, it's still going to cause smoothing and cause things that are
4 relatively irregular to become more planar.

5 JUDGE BAER: Thank you.

6 MR. GARR: But in terms of the illustration, you know, of the
7 specific, deliberate topographical variation, I do think that the figure is at
8 least instructive on that point.

9 Let me just -- give me one second here to see if there is anything
10 else I wanted to mention before I sit down, because I know I'm over time.
11 Okay. Unless there are questions from the Panel, I'll keep the rest of my
12 time for rebuttal.

13 JUDGE BAER: Thank you, Mr. Garr.

14 MR. GARR: Thank you very much.

15 JUDGE BAER: Ms. Zhong, take your time in setting up, but
16 would you like to reserve any of your time for surrebuttal?

17 MS. ZHONG: Yes, 15 minutes. And also, Mr. Jonathan and I will
18 split the presentation.

19 JUDGE BAER: However you want to do that is just fine.

20 MS. ZHONG: Okay.

21 JUDGE BAER: And we'll just start the clock whenever you're
22 ready, but again, there's no hurry.

23 MS. ZHONG: So, may it please Your Honors, so I will start with
24 the claim construction issue. Your Honors asked the Petitioner whether the
25 two prongs of the construction were understood at the time of the invention.
26 We don't really think so. So, if you look at how the constructions came

1 about, the aspect with respect to the defect construction, it actually appears
2 in the preferred embodiment of the '389. And that's in Slide 17.

3 So, in the prosecution history -- actually, let's go back to Slide 16.
4 Slide 16 is where the inventors was explaining why one of the prior art
5 doesn't really disclose the planarization layer. And that's Exhibit 1002, page
6 371, and it's discussed on POR 19. And they refer to it: The sealing layer is
7 not a planarization layer since it is not used to interrupt the propagation of
8 the defects from one layer to another layer. And they refer to the
9 specification, page 7, lines 16 to 21. And on the right, I reproduced this
10 particular passage. And then if you

11 JUDGE BAER: I'm sorry. What slide are we on, Ms. Zhong?

12 MS. ZHONG: Slide number 16 for the '1222 deck.

13 JUDGE BAER: Oh, give us just a --

14 MS. ZHONG: Sorry. There was --

15 JUDGE BAER: No, we've got -- I've got the wrong deck. Give us
16 just a minute. Sorry about that. '1222, Slide 16?

17 MS. ZHONG: Yes.

18 JUDGE BAER: Thank you. Got it.

19 MS. ZHONG: And then, if you map what's referred to in the file
20 history page to the issued patents, that particular passage appears in column
21 4, lines 32 to 46. And what it says here is: Such an organic layer might
22 provide a planar structure on which to deposit a barrier layer and to
23 substantially cover point defects, e.g., dirt particles, in lower layers. The
24 fact that it says you might do it, it's a preferred embodiment. That means it's
25 not necessarily the case that it always happens, or a POSITA would
26 understand that's what's going to happen.

1 JUDGE BAER: I'm sorry. Are you contesting, now, the
2 construction?

3 MS. ZHONG: I'm not contesting the construction, but I'm
4 contesting that those properties were necessarily connected with the word
5 planarization layer in prior art.

6 JUDGE BAER: Okay.

7 MS. ZHONG: So, one other question Your Honor asked the
8 Petitioner is, if someone calls a planarization layer, or planarization material,
9 do they necessarily understand the two prongs of the construction? And my
10 point is, they don't necessarily understand it.

11 JUDGE BAER: If that's true, then why do they necessarily
12 understand that in the context of your claims?

13 MS. ZHONG: In the context of the claims, so first of all, this
14 prong is part of the prosecution history. So you can say, in light of the
15 prosecution history and how the inventors are defining the planarization
16 layer, what the planarization layer property has to have, that's how they
17 understand it. And that's also explained in the District Court's Claim
18 Construction Order, which we have reproduced on Slide number 14 of the
19 '1222.

20 JUDGE BAER: I guess, though, that I agree with you the patent
21 says it might cover it. You know, a construction --

22 MS. ZHONG: In the next sentence, it says, it is generally
23 desirable that the organic layer be depositing sufficient quantities or that
24 such a layer is no longer conforming to the point defect.

25 JUDGE BAER: I understand. That looks to me like it's saying
26 there are certain species of planarization layers that do this defect covering.

1 MS. ZHONG: Yes.

2 JUDGE BAER: But I don't understand that -- that's what it says to
3 me, but I don't understand that to be either party's position. I understand
4 both of the parties to be saying, planarization layer, when we say that, it
5 means two things, and we are not disputing that. And I want to know if
6 that's true. I understood Petitioner to say that. Is that true for Patent Owner;
7 you are not contesting that planarization means two things?

8 MS. ZHONG: In the context '389 Patent, that's true. That's not
9 necessarily the case for the prior art. Yamazaki, Weaver, when they use the
10 word planarizing, that's not necessarily the case.

11 JUDGE BAER: So, when the prior art uses the word
12 planarization, it means something different than when the petition uses
13 planarization; is that correct?

14 MS. ZHONG: Correct. Correct. So, and how do we know that?
15 So, if you take a look at the -- how they are applying the planarization layer,
16 so, if you take a look at the petition and their analysis, they don't talk
17 anything about defect. All they're saying that, in the case of Yamazaki, it is
18 a planarization layer because that layer covers the spec, which is to provide a
19 smooth surface or no reproduction of the topography underlying it, nothing
20 about the defects whatsoever.

21 JUDGE BAER: Is there anything in your patent that says, when
22 we say planarization layer, that means we've got a special definition in the
23 context of this patent, that means these two special features, not just that a
24 planarization layer can accomplish that or might accomplish that, but when
25 we say planarization layer, we've got a special definition of that based on our
26 disclosure in this patent?

1 MS. ZHONG: Okay. I don't think there is a definitional language
2 in there, but that's what a POSITA would understand. Definitely, based on
3 the prosecution history, you will see it, and

4 JUDGE BAER: But I don't understand why a POSITA would
5 understand your patent to mean something when it says planarization layer,
6 but that same POSITA reading the prior art and seeing planarization layer
7 would say it means something else.

8 MS. ZHONG: Because when you interpret the '389 Patent, you
9 also interpret the prosecution history, while that's not really the case with
10 Yamazaki and Weaver. Their prosecution history mentions nothing about
11 defects whatsoever.

12 JUDGE BAER: So it's based solely on the prosecution history that
13 somebody would understand this?

14 MS. ZHONG: Prosecution history, as well as a passage in the
15 embodiment, the preferred embodiment, column 4. Also with this --

16 JUDGE QUINN: So, can I ask you something?

17 MS. ZHONG: Sure.

18 JUDGE QUINN: So, there, I'm finding this difficult to follow
19 because the background of the invention uses the same wording, uses the
20 term planarization layer.

21 MS. ZHONG: Correct.

22 JUDGE QUINN: It also describes the prior art planarization layers
23 to protect from defects, so I don't see -- I don't see where lexicography
24 comes into this patent, where the same term used before the invention was
25 used with respect to certain functionalities so that later, and then subsequent
26 to the invention, that term means something else for the inventors. Where

1 specifically do we have that stated in the patent?

2 MS. ZHONG: So, first of all, it is really how the inventor would
3 understand the term. In column 1, lines 60 to 62 --

4 JUDGE QUINN: Okay, no. So let me stop you. You're going
5 back to the background of the invention.

6 MS. ZHONG: Yes.

7 JUDGE QUINN: I want to know. It sounds to me like you are
8 arguing a lexicography definition.

9 MS. ZHONG: It is, and it is not. There is no express lexicography.

10 JUDGE QUINN: Well, you cannot have is and is not. It's either
11 lexicography or not. So, which position are you taking? Are you defining
12 the words specifically with respect to the inventors in this patent,
13 lexicography applying to this term, or not?

14 MS. ZHONG: Definitely, if you look at the prosecution history
15 and how they are saying what properties the planarization layer must have,
16 that is (CROSSTALK) --

17 JUDGE QUINN: That was a yes or no question I asked. Are you
18 relying on lexicography for your definition of planarization layer in this
19 case?

20 MS. ZHONG: Yes.

21 JUDGE QUINN: Now --

22 MS. ZHONG: As reflected in the, for example, in the -- in the
23 prosecution history.

24 JUDGE QUINN: And the prosecution history that you're referring
25 to is what you showed us in Slide 16?

26 MS. ZHONG: In Slide 16, that's for the defect interruption.

1 JUDGE QUINN: So, where is the definition that you contend is in
2 the filed history that shows this lexicography?

3 MS. ZHONG: So there are two different parts. So, on Slide
4 number 16, that's where they mention that a sealing layer is not a
5 planarization layer because it lacks the defect interruption property. And
6 then, on Slide number 18, excerpting the Office Action Response, which is
7 Exhibit 102, page 18, where they explain that the planarization layer must
8 also have -- must not reproduce the topography of the underlying layer. So
9 those were the two properties that's included in the construction in district
10 court that the parties agreed to, and that's reflected in the file history.

11 Furthermore, regarding the not producing the topography, that one,
12 you cannot just say because it's covering the defects, then it's also -- that
13 property is met. So, during the construction, during the claim construction
14 argument, Samsung's Counsel mentioned that for the second function, which
15 is about a smoothing out of the underlying contour of what's there, and that,
16 that property must be met, even in situations where you have no defects,
17 which means, even if there are no defects, you are not covering defects, you
18 still should not be reproducing the topography underneath.

19 And on Slide 108, they explain further to say that why do you need
20 that feature separated from covering the defects, basically saying that when
21 you don't reproduce the topography of the layer, it avoids the sharp creases
22 and cracks, so it's much less likely that the barrier layer itself will have
23 defects. So, for the second not reproducing the topography, it's actually
24 trying to avoid the sharp corners and the creases to avoid forming defects in
25 the barrier layer. And it must be met even when the barrier layer is perfect
26 and have no defects.

1 And that has an effect when it comes to Weaver, when it comes to
2 Kijima plus Suzuki, because in those cases, the organic layer is actually
3 conforming to the underlying shape of the devices or the barrier layer, and
4 they reproduce the creases, the folds of the underlying layer. And as a
5 result, they actually don't meet the second requirement that it's not producing
6 the -- it's not reproducing the topography of the underlying layer.

7 JUDGE BAER: And just so I'm clear, we're on Slide --

8 MS. ZHONG: 108.

9 JUDGE BAER: -- 108 of which case?

10 MS. ZHONG: '1222.

11 JUDGE BAER: Of the '1222 case, and this cite here is a quote
12 from the --

13 MS. ZHONG: District Court.

14 JUDGE BAER: -- District Court from Petitioner's -- well, it's not
15 Petitioners. From Samsung's Counsel at the district court, is that correct?

16 MS. ZHONG: Well, they are also the Counsel for SDC in a
17 different court.

18 JUDGE BAER: Fine. This is a -- what I mean to say is this is an
19 attorney arguing at the District Court. Is that correct?

20 MS. ZHONG: That's correct.

21 JUDGE BAER: And was this based on any information or any
22 evidence? Is there any evidence in this case about rounding corners and that
23 sort of thing? Is that in this case as well?

24 MS. ZHONG: Rounding corners? I think Dr. Subramanian says
25 that if you round corners, then you are reducing the nonplanarity; then he
26 considers that to be providing the planarization function.

1 JUDGE BAER: Okay.

2 MS. ZHONG: So what I want to emphasize is that the two prongs
3 are two separate functions. One is to shield defects from traveling upwards,
4 and the other one is must be met, even when there are no defects, is to
5 provide a substantially smoother surface.

6 JUDGE BAER: And just so, because I've gotten confused on this
7 issue, when you say smooth, we're talking about the defects aspect; is that
8 correct? Or when you say smooth, are we talking about the topography
9 aspect?

10 MS. ZHONG: I think, in this context here, they're talking about
11 the second property, which is providing substantial smoother surface. It's
12 talking about not reproducing the topography, so it's a flatter surface.

13 JUDGE BAER: Smoothness is about topography; is that correct?

14 MS. ZHONG: Correct.

15 JUDGE BAER: So, when Suzuki talks about smoothness, does
16 that mean something else there? Because it does use the words smoothing
17 the surface in Suzuki, and it's your contention is that doesn't do the same
18 thing, so that's why I'm a little confused.

19 MS. ZHONG: I think, in the context of Suzuki, if you're adding
20 Suzuki -- you're combining Suzuki into Kijima. And the problem is their
21 combination is they're basically inserting the layer into two of Kijima's layer
22 that's following the topography of each other, which necessarily means that
23 the layer that you add to it is going to be following the topography of the
24 underlying layer.

25 So, there, our understanding is, they are arguing to add an organic
26 layer between Kijima's gold layer and the dielectric layer. But they, at least

1 in the petition, they did not argue to change the shape of that layer. They are
2 basically, if you look, it's in the '1223 slide, which my colleague is going to
3 discuss later. If you look at what their proposal is, they're proposing to add
4 the organic layer in between the gold layer and the dielectric layer, and it
5 will -- the layers will follow the topography of the underlying layer.

6 JUDGE BAER: But it says, or this is a quote now from Suzuki on
7 column 5: Organic barrier layer 20 makes a smooth surface.

8 So I thought your position was, yes, that's because it covers
9 defects, not because it suppresses topography, but I just asked you if that's
10 what you mean when you say smooth, and I understood you to be saying
11 something different. So the question is, smoothness, is that a defect issue or
12 a topography issue, or both?

13 MS. ZHONG: So, in the context here, when Samsung's Counsel is
14 talking about smoothness, they are using as a flatter surface, so it's talking
15 about topography. Suzuki may use it for a different -- like, use it differently
16 because of the context, because they say you are covering the defects, and as
17 a result, make a smooth layer, so that's different in that sense.

18 JUDGE BAER: So smoothness means one thing when Counsel
19 was talking about it, and it means something else when Suzuki is talking
20 about it; is that correct?

21 MS. ZHONG: Yes.

22 JUDGE BAER: Okay.

23 MS. ZHONG: So, back to Slide 36 of '1222 spec, in the petition,
24 the planarization layer analysis is only with respect to having a flat surface,
25 nothing about defects. And Counsel has conceded that Yamazaki doesn't
26 talk about defects, and the only discussion that comes from defects is

1 actually from Suzuki.

2 JUDGE REPKO: So, isn't it true that there's a separate process for
3 smoothing with respect to defects? I think I believe I saw some, you know,
4 evidence in the record. It was like when I -- like, there is different stages,
5 and one of them was a smoothing stage. Is that correct?

6 MS. ZHONG: When you say different?

7 JUDGE REPKO: Like, it's the process to make -- like a series of
8 steps, where the last step is essentially like smoothing out the surface to
9 address defects in particular. I think I saw it on one of your slides here or in
10 these briefs here. And I'm just wondering if Suzuki ever really -- if there's
11 any evidence in the record that kind of discusses that with respect to Suzuki,
12 not necessarily --

13 MS. ZHONG: I don't think Suzuki -- the only thing Suzuki talks
14 about is that one sentence, is to cover those defects, right?

15 JUDGE REPKO: Yeah, but you said that word smoothing, and
16 then there's the defects in there, and they don't really go into much depth
17 about what that process is in order to address that, right?

18 MS. ZHONG: Yeah. When Your Honor is talking about different
19 steps, are you talking about this one on slide --

20 JUDGE REPKO: Yeah, there you go, right.

21 MS. ZHONG: Okay. This is the inkjet printing, and it doesn't
22 really have anything to do with defects. This is just how inkjet, how you
23 form a film.

24 JUDGE REPKO: Yeah, it's -- yeah, also, right, right. So,
25 ultimately, the last step there, you had -- you know, there's your smooth
26 surface right there in order to attain that planarization.

1 MS. ZHONG: So what happens is you drop -- all these droplets
2 are dropped individually. Then they have to merge together in order to form
3 a film, right? And that's what happens in steps 3 and 4, and that's when,
4 also, the coffee ring effects may happen, because as, especially in the prior
5 art, where they dissolved solids into a solution, when the solvent evaporates,
6 you are leaving behind with solids that doesn't really, like, merge together.
7 And so, you actually form defects when you form the organic layer, and
8 that's what Mr. Antoniadis actually mention that one of the problems in the
9 prior art is when you deposit organic layer, you actually form particulates,
10 rather than forming defects.

11 And in the '389, what they thought is, instead of using the resin
12 dissolved in solvents, I'm just use UV-curable liquids, because liquid, you
13 can make sure that they actually merge and form a film.

14 JUDGE REPKO: Right.

15 MS. ZHONG: So that's a difference there. But I don't think
16 Suzuki mentions how -- all Suzuki is giving concept that you want to have a
17 layer that covers the defects, like the particles get covered up.

18 JUDGE REPKO: Yeah.

19 MS. ZHONG: And probably, they do it through like deposit to a
20 sufficient thickness, but they don't really give you any detail as to how to do
21 it. And as you can see here, at least with respect to inkjet printing, over a
22 large area, you have huge, like, challenge in order to form that defect-free
23 film, in order to disrupt the defect, because as you can see here, the solvent
24 evaporates. You leave behind solids that doesn't really merge, so you
25 actually leave behind all those defect channels. So, to say that you form an
26 organic layer, you necessarily form a defect free or interrupt the defect to

1 have a planarization layer, I don't think that's necessarily the case.

2 JUDGE REPKO: Thank you. That's helpful. I appreciate that
3 explanation.

4 MS. ZHONG: I also want to mention that for the defect, Petitioner
5 relies almost exclusively on Suzuki, but Dr. Subramanian actually conceded
6 that Suzuki is different from Yamazaki. So I ask him, saying that, you are
7 not saying Yamazaki has the same material sets or topology as Suzuki,
8 correct? He says, I'm not. And Yamazaki is not using this --

9 JUDGE QUINN: What slide are you on?

10 MS. ZHONG: I'm on Slide number 46.

11 JUDGE QUINN: Thank you.

12 MS. ZHONG: Of the '1222. And I also ask him whether
13 Yamazaki is using the same manufacturing methods as Suzuki. He says,
14 they're not identical either. And in particular, Yamazaki mentioned -- now,
15 I'm on Slide number 47. And if Your Honor recalls, Yamazaki uses two
16 methods in particular for depositing the organic layer, so --

17 JUDGE QUINN: So I have a question for you about your Slide
18 46. You refer to the question you asked Dr. Subramanian, and you use the
19 word topology in that question. What is the difference? Are you contending
20 there is a difference between topology and topography, or do you think that
21 is something different?

22 MS. ZHONG: Topology and topography are interchangeable
23 words, mean the same thing.

24 JUDGE QUINN: And this is your interpretation, or is this the
25 patent interpretation?

26 MS. ZHONG: The topology and topography?

1 JUDGE QUINN: Yes.

2 MS. ZHONG: I asked Dr. Subramanian in his first deposition. I
3 asked him whether he understand the two words differently. He said people
4 usually use it interchangeably. And that's my understanding as well.

5 JUDGE QUINN: That's great. Do you have a citation for that
6 testimony?

7 MS. ZHONG: I can look.

8 JUDGE QUINN: That would be great. Thank you.

9 MS. ZHONG: Yeah. It will be in the first deposition, but I can
10 look it up.

11 And Slide number 47, in particular, Yamazaki uses inkjet printing
12 and electric field application method, and those methods are not used in
13 Suzuki.

14 Another thing that you have to keep in mind is, Suzuki says it's
15 inevitable there will be defects formed. That's for Suzuki's particular
16 system. There is nothing about Yamazaki would necessarily have that
17 problem either. So, to say that there's going to be defect interruption
18 necessarily in Yamazaki, I don't think you can really draw that conclusion.

19 And Slide number 48 is the testimony I mentioned earlier by Dr.
20 Antoniadis. He actually says that when you put the organic layers down,
21 you introduce particles. So that means using the inkjet printing or like some
22 other methods to put the organic layer down, you actually not necessarily
23 interrupt the defect; you may be introducing the defects as well.

24 And Slides 49 and 50 are what I just discussed with Repko as to
25 what the problem was in the prior art, why the inkjet printing methods in the
26 prior art is a solution method is not really helping you. There may be

1 defects forming. While in the '389 Patent, by the use of UV-curable liquids,
2 where the liquids actually can merge, you overcome the old -- the prior art
3 problem to form a planarization layer that can actually interrupt the defects.

4 I also want to mention that, in paragraph 178, relied on by the
5 Plaintiff -- by the Petitioner, Yamazaki actually mentions how they address
6 the penetration of water and moisture. They don't do it through the use of a
7 planarization layer, but they rather use a material that's unlikely to allow
8 moisture and oxygen to permeate. So it's a different method, and they don't
9 really think about using -- Yamazaki definitely does not think about using
10 planarization layer to disrupt the defects at all.

11 I also want to move on to the second one, which is missing
12 limitation. Claims requires you to selectively depositing a barrier layer over
13 a planarization layer, and that planarization layer is, in turn, deposited over
14 multiple devices. What you have in the prior art is for Yamazaki, whether or
15 not there is selective deposition, it's over single device. When it comes to
16 multiple devices, both AAPA and Ghosh uses barrier layer that's not
17 selectively deposited.

18 AAPA itself the -- the background of the '389 Patent mentions that
19 one of the problems with the prior art is the electrical contact pads and the
20 scribe lines are covered by it, and that's a problem for yield and device
21 integrity, and comes to the Ghosh reference.

22 Ghosh, what it says, is that the oxide layer 22, which is a barrier
23 layer, is formed over both the encapsulation layer and the exposed portion of
24 the substrate, which means it's deposits now selectively. And that's also
25 mentioned on Slide number 73 in the file history. Ghosh was raised during
26 prosecution history on page 376 of Exhibit 102, and the Applicants

1 specifically said, in Ghosh, the second encapsulation 22, which is mapped as
2 a barrier layer, is non-selectively deposited. And Slide 74, which is the
3 petition, they cited this exact statement, and they don't dispute that
4 statement.

5 So what is really established is, as summarized on slide number 69,
6 the prior art, when you come to depositing a barrier layer, when there are
7 multiple devices, it's deposited non-selectively. And since this is a material
8 limitation, you have to point to in the prior art where to stop when you have
9 multiple devices; the barrier would be selective deposit, and they don't have
10 that.

11 JUDGE QUINN: Counsel, are you saying that all deposits using
12 inkjet will have a problem forming a planarization layer?

13 MS. ZHONG: Well, the prior art hasn't shown that the inkjet
14 printing could provide -- at least with Yamazaki's inkjet printing, let me
15 -- the only reference in the art that they have pointed to that use inkjet and
16 do planarization layer, or use the word planarization layer, is Yamazaki.
17 And we do think that Yamazaki probably does have a problem of forming a
18 sufficiently thick inkjet printing, and that's interrupting defects for the
19 reasons I've stated: Because they dissolve resins in the solution, then apply
20 it. And that's why it's only that 10 nanometers to 300 nanometers thick.

21 The much thicker layers that they mentioned, which is -- thick
22 layers, Slide 57. That's the much thicker layers that's in paragraph 90 of
23 Yamazaki. That's for a different method, which is the electric field
24 application method. And it is also for a different configuration, when the
25 cover layer is above the barrier layer, not when the barrier layer is above the
26 cover layer. So there is really no -- nothing in Yamazaki suggesting that

1 when you use an inkjet printing method, it can be thicker than 10 to the 300-
2 nanometer range, or that it's appropriate to use that thick -- a much thicker
3 layer when you have the cover layer below the barrier layer, as required by
4 the claims.

5 JUDGE QUINN: So do you --

6 MS. ZHONG: And I'm looking at Slide number 57. Sorry.

7 JUDGE QUINN: I apologize. I didn't mean to talk over you.

8 MS. ZHONG: Sorry, Your Honor.

9 JUDGE QUINN: Do you have, in the specification of the patent at
10 issue, a disclosure of the criticality of the thickness or something about
11 inkjet deposition of the layer that speaks to these distinctions you're making
12 with Yamazaki?

13 MS. ZHONG: It doesn't talk about specific thickness, but it does,
14 in column 4, it does mention planarization layer is generally desirable to
15 have, to be sufficiently thick to cover the defects, and so that it's not
16 conformal. And as I mentioned earlier, there is also disclosure of using UV-
17 curable liquids for the application to form the planarization layer.

18 JUDGE QUINN: The conformal quality of the layer is achieved
19 not just by the thickness, but by the type of material that is used for that
20 layer, correct?

21 MS. ZHONG: Certain materials -- so, if you deposit solids, it's
22 much less likely that you can get a totally non-conformal wall, while

23 JUDGE QUINN: I'm sorry. What word did you use? When you
24 deposit what?

25 MS. ZHONG: When you use a solid material.

26 JUDGE QUINN: The solid, okay.

1 MS. ZHONG: Yeah, a more solid material. Well, that's why the
2 inventors proposed using UV-curable liquids, right, rather than solids that's
3 dissolved in a solution.

4 So I want to come back to 69, as prior art doesn't really teach
5 depositing, selective depositing barrier layer when there are multiple
6 devices. And it's for Slide number 80 to 81, as well Slides 83 to 84, what the
7 petition's obviousness is only talking about why you would use a batch
8 fabrication method in the term of Yamazaki, but it doesn't really speak to
9 why you would, in the case when you have multiple devices, you would use
10 a selective deposition method for the barrier layer.

11 And Slide 82, they mention that it was conventional to use batch
12 fabrication to manufacture OLED displays with thin-film encapsulation, but
13 as their own references have shown that it is not conventional to selectively
14 deposit a barrier layer when there were multiple devices. So that
15 undermines their reasonable expectation of success argument if, in the prior
16 art, there is no disclosure of ever using up the selectively depositing a barrier
17 layer when you have multiple devices; why do you think that it would be
18 there is a reasonable expectation of success to expand the method of
19 Yamazaki?

20 I see that my time is coming up --

21 JUDGE BAER: Ms. Zhong, are you going to address the
22 conception and reduction to practice, or is your colleague?

23 MS. ZHONG: I am going to, but probably in rebuttals since my
24 time has come --

25 JUDGE BAER: Fair enough.

26 MS. ZHONG: Okay. For the Weaver one, again, for the

1 planarization layer, there is -- there's nothing about defects mentioning. And
2 another thing about the Weaver one is if you look at the 150 structure, the
3 -- each of the layer is totally conformal to the layer before -- below, and it
4 forms the same structure, so it is actually reproducing the topography of the
5 underlying layer. So it's not really -- despite the use of a planarization layer,
6 it is actually not a planarization layer.

7 I also want to mention that for the Weaver one, it is a roll-to-roll
8 process. That's not really disputed, and that's on Slide 121, my exchange
9 with Dr. Subramanian. I asked him, what are the steps shown in Figure 8?
10 Is that roll-to-roll? And he says, it appears to be.

11 And it is undisputed, as shown in Slide 122, even in 2015, as it is
12 understood by a POSITA, is for the inorganic layer that the only option in
13 R2R, which is roll-to-roll, is blanket coating followed by removal of
14 material at the end of the process. So, if in 2015, he cannot selective deposit
15 the barrier layer, how could he do it in 2001, 2002?

16 I see that they brought in Burrows. That is a new argument.
17 Burrows was only applied to Claim 37, not to Claim 34, not to Claim 35.
18 They're not allowed to raise a new argument for the first time at the oral
19 hearing.

20 I see that I have seven minutes left, and my colleague is going to
21 address the Kijima.

22 JUDGE BAER: Thank you, Ms. Zhong.

23 MR. LINDSAY: Can we stop the timer briefly while I set up?

24 JUDGE BAER: Sure.

25 MR. LINDSAY: Thank you. May it please the Board, Jonathan
26 Lindsay for Patent Owner, to discuss the '1223 IPR. This involves the

1 combination of Kijima and Suzuki. It's relied on for each of the grounds. It
2 does not, however, satisfy the planarization layer construction. So what is
3 this combination exactly? So it's a simple combination. This is on Slide 36.
4 We're told, whereby, they insert the organic layer from Suzuki between the
5 insulating sealing film and the conductive sealing film of Kijima.

6 And on Slide 37, they say how this is done. It's deposited right on
7 top of that conductive sealing film 7. And we have a graphic where they
8 have a little bit of sleight of hand, where they color the conductive sealing
9 film in blue, as if it's part of the OLED device, as opposed to being a barrier
10 layer, which is exactly, in fact, what it is.

11 But how is this constructed? This is important to the issue of
12 whether it satisfies the construction or not. So, Dr. Subramanian, on Slide
13 38, tells us. He was asked, for the preamble, this method of encapsulation,
14 what are you relying on? How is it formed? I'm pointing only -- I'm only
15 pointing to Kijima. I only point to the disclosures within Kijima itself.

16 On Slide 39, how about Element 34(a), fabricating devices on the
17 substrate? Again, he's only relying on Kijima's disclosure.

18 34(b), this is the selective deposition of our planarization layer, the
19 one from Suzuki. Again, he's performing the selective deposition. He's
20 relying on the disclosures of Kijima. This is on Slide 40.

21 And he goes on, on Slide 41, to say, okay, yes, it's true the
22 deposition techniques would generally follow Kijima. Even this additional
23 deposition step, right, the one from Suzuki, we're still following the kinds of
24 steps that are taught in Kijima.

25 So, from that, Mr. Humphrey, on Slide 42, concludes that what
26 you're doing is, when you're adding Suzuki's organic layer in between these

1 two existing layers, they're going to be done the same way. The deposition
2 step is going to be the same way. And what you're going to end up getting is
3 a reproduction of the topology below, because that's exactly what Kijima
4 does.

5 I'll go to the next slide, which kind of blows this up a little bit
6 more, 43. So, when you insert this blue layer here, as what we've kind of
7 graphically superimposed it, it's going to necessarily be applied the same
8 way Kijima applies all its other layers, in this topological consistent manner.
9 That means it's not satisfying the second prong, the failure to reproduce the
10 topology of the layer below. So Suzuki's

11 JUDGE BAER: So is it your position that it doesn't smooth out the
12 topology at all, or just that it, well, it may do some smoothing around the
13 corners; still, the overall topology is still very apparent when you put on
14 Suzuki's planarization layer?

15 MR. LINDSAY: Right. So, Your Honor is using the word
16 smoothing, and this came up earlier. I want to be clear on this. So, Counsel
17 for Samsung used the term smoothing during the oral -- during the Markman
18 hearing, and he used it in the context of contours, smoothing and contours.
19 He was clear about the second prong. Suzuki uses the term smoothing in a
20 very different context.

21 JUDGE BAER: That's how I understood it, too, and I'm fine with
22 that lexicon. So I'm not talking about Suzuki smoothing over defects.

23 MR. LINDSAY: Okay.

24 JUDGE BAER: But I'm talking about knocking off the rough
25 corners, if you want. Are you saying that, no, Suzuki doesn't dull the
26 corners, or are you saying Suzuki dulls the corners, but the topology is still

1 so apparent that it's not enough?

2 MR. LINDSAY: So, if Your Honor is referring to this figure from
3 Suzuki about the corners, the rounded corners, I'd like to address this,
4 because this is an important point as well. This is Suzuki's structure. Suzuki
5 made this using whatever methodology Suzuki used. He doesn't actually tell
6 us how he achieved these corners. In fact, on the next slide I'll show -- this
7 is Slide 45 -- he's got other figures that have, like, cut-off corners. He
8 assigns no value to the corners, is my point.

9 But even if you said, okay, well, Suzuki has rounded corners, that's
10 irrelevant. What they're -- they've already told us that they're not making the
11 barrier layer according to the methodology of Suzuki; they're making it
12 according to Kijima's methodology. That layer isn't a solid structure, right?
13 The material is vaporized. It's shot through a nozzle. It has no structure
14 independent of the way you apply it, and Kijima is very clear about the way
15 you apply it. He shows us in his figures. Every layer is conformal to the
16 layer below.

17 Also, this idea of these rounded corners, this is a new argument. I
18 want to be clear about that, right? So they were clear in the petition about
19 what they relied on. Dr. Subramanian confirmed that during his deposition.
20 This was never talked about in the petition. This came up in reply. I find it's
21 a classic new argument, because not only are you changing your theory, but
22 you have to rely on a different reference to do it, plenty of case law on that.

23 Okay. Second point is, where is the evidence? They need to have
24 evidence that shows us the motivation to combine because it's different now.
25 They're no longer taking out Suzuki's organic layer and inserting it and
26 doing what Kijima says. They're modifying Kijima to make a layer the way

1 Suzuki does. No evidence for that, so they've got multiple issues on this,
2 Your Honors.

3 JUDGE BAER: I understand. I take your point. Now, if you
4 would, please assume that I disagree with you, and that I do think that it's
5 going to make less sharp corners. Would you say that would suffice or that
6 would not suffice?

7 MR. LINDSAY: I would say that would not suffice, Your Honor.
8 And I would point to Slide 8, which is from the '389 Patent. It's giving us an
9 example of what it means about changing the topology here, right? What
10 you're talking about -- and this is their own argument before the district
11 court. I'll go to that slide in a moment. What we're trying to do is prevent
12 future imperfections or defects in the barrier layer, the outside layer. You
13 can't just knock off the corner a little bit and achieve that goal, the whole
14 goal of the planarization, which is to make sure you have a smooth, a
15 flattened surface, so you're not getting defects out along the periphery, so --

16 JUDGE BAER: Now, when Suzuki says smooth surface on the
17 relatively irregular surface, you're saying those irregularities are defects, not
18 corners; is that correct?

19 MR. LINDSAY: Yeah, yeah. So let's talk about that. This is the
20 only place in Suzuki that this ever appears. The word smooth is right here.
21 It's nowhere else. But if you read this in context, what Suzuki is talking
22 about is what, well, it's got this cathode, and the cathode has pinhole defect.
23 He says it's inevitably formed, but this is in the context of Suzuki's cathode,
24 mind you. So what is he going to do about that? Well, you want to cover
25 those. You want to make it smooth. So, at the end, you have this
26 substantially defect-free and dense construction. What Suzuki is trying to do

1 is cover defects, which he believes are inevitable in his cathode.

2 Okay, and the interesting side issue here is, well, what about in the
3 combination? Do we get some defect covering in the combination? And the
4 answer is, interestingly, no, because of the formation of the -- of what
5 they've done. So I'll go real quick to Slide 79. So this is what they're
6 creating, right? So you've got Kijima's cathode in black at the bottom, its
7 existing conductive sealing film, and then that's on top of that is where
8 they're adding the planarization layer, right? So the planarization layer is
9 not on the cathode like it is in Suzuki. It's somewhere else.

10 So, from that, oh, we looked at this. From that, they realize they
11 have an issue. So they say, well, that conductive sealing film -- I'm on Slide
12 76 now -- that, too, would be vulnerable to the same kind of problems that
13 Suzuki tells us its cathode has. Okay. Fine. Let's test that, however.

14 Dr. Subramanian said, okay, what are those defects we're talking
15 about? This is Slide 78. Well, those are the pinhole defects, just like
16 Suzuki. Suzuki has got pinhole defects in his cathode. Now, they're saying,
17 well, that's going to also occur in the conductive sealing film, sealing layer
18 7. Well, it turns out that that is absolutely not the case. It's not the case
19 because Dr. Subramanian confirms it's not the case.

20 According to Dr. Subramanian -- this is evidence in the record
21 when you're talking about pinhole defects, it depends on the thickness,
22 okay? If you have a film in the order of a micron, then no, you're not going
23 to get pinhole defects. Now, Suzuki's got a problem because its cathode is
24 very thin. It's 115 nanometers, so it's like pouring concrete on your sidewalk
25 where you're trying to fill holes. If you don't pour it thick enough, you're not
26 going to fill those holes in. Suzuki has that problem. A nanometer or a

1 micron thick layer does not.

2 On Slide 81, goes on, and I'll make this brief. Just to confirm, this
3 is straight out of Kijima, paragraph 50. Its conductive sealing film 7 is 10
4 kilo-angstroms, which is a micron thick gold layer. And in that case, Dr.
5 Subramanian said the likelihood of getting pinhole defects -- the whole
6 reason they're making this combination to begin with, mind you -- is
7 basically zero. There is no reason to make this combination the way they've
8 made it, where they are putting the planarization layer on top of the
9 conductive layer, not on the cathode, the way Suzuki does.

10 So I'll pause there. I know I'm over. Unless Your Honors have
11 any questions?

12 JUDGE BAER: Thank you, Mr. Lindsay.

13 Mr. Garr?

14 MR. GARR: Yes, thank you.

15 JUDGE BAER: You've got 12 minutes remaining in your time.

16 MR. GARR: Thanks.

17 JUDGE BAER: And you can start whenever you're ready, but take
18 your time getting set up.

19 MR. GARR: Thanks. I think this may be yours. Let's see if I can
20 get it to work again. Okay. I think I'm ready. So I'd like to just take up
21 -- come back right to the issue with the combination of Kijima and Suzuki
22 that was being discussed by Counsel.

23 This idea that Mr. Humphrey confirmed that the topology would
24 follow Kijima, it appears to be based just on looking at the figures of Kijima
25 and asserting that when we put in the planarization layer, it would do the
26 same thing. I'm not seeing any analysis, and I didn't see any looking at his

1 testimony, as to why that would be.

2 Certainly, we disagree, and it's totally not our position. In the
3 petition, we didn't draw a picture of the planarization layer in this
4 modification, but our understanding and our intent was that it would cause,
5 you know, less planar surfaces to become more planar, like you see, for
6 example, with the rounded corners in Suzuki.

7 And in the petition, at pages 33 going into 34, we say, talking
8 about the picture from Kijima on the lower right, essentially that picture, we
9 said, indeed, this film 7, which would be, I guess, what's colored green here,
10 has a visibly uneven surface, as illustrated in the figure. The added organic
11 sealing layer, which we proposed to add from Suzuki, would help cover
12 defects, smoothen surface irregularities, and flatten the contours of Kijima's
13 conductive layer 7.

14 So the theory is not that you have the exact same shape as in
15 Kijima. Rather, it's that when you add a planarization layer, such as the
16 organic layer from Suzuki, you achieve the functions of planarization, which
17 include both covering defects and smoothening things that may be not so
18 much of a defect, but more of a deliberate thing. So, for example, these sort
19 of sharp corners that are, you know, more acute than a 90-degree angle,
20 that's sort of based on how the thing was made. Those sharp changes would
21 be smoothed out by the planarization layer. And our expert has discussed
22 that in more detail.

23 JUDGE REPKO: Just to be clear, they were just focused on one
24 particular type of defect, but you're saying there are other defects that are
25 addressed by that planarization layer; is that right?

26 MR. GARR: No, no. I'm saying that the planarization layer would

1 both cover defects, such as pinhole defects --

2 JUDGE REPKO: Pinhole defects.

3 MR. GARR: -- and it would smooth out the sharp corners that you
4 see in the top left and the top right, which aren't necessarily defects, but just
5 artifacts of how the thing was made.

6 JUDGE REPKO: Are there other defects other than pinhole
7 defects?

8 MR. GARR: The pinhole defects, there aren't. Buckle defects
9 were discussed, at least, during the deposition. But in the petition -- this is
10 helpful, Judge Repko, because I wanted to bring up this point as well. We
11 did discuss pinhole defects in the petition. And Suzuki tells you that these
12 defects are inevitable when you are forming a cathode, such as you see in the
13 Suzuki reference.

14 The Patent Owner's -- okay. So I'm putting up on the screen Patent
15 Owner's Slide 81 from petition number 2 that was just being discussed, in
16 which the argument was made that these pinhole defects that are discussed
17 in the Suzuki reference would not be present in Kijima on account of this
18 gold layer that's on top of the cathode in Kijima. And the testimony cited
19 that says, I agree, the likelihood of getting pinhole defects in a 1-
20 micromillimeter film would be basically zero or close to zero. That does not
21 lead to the conclusion that there would be no pinhole defects in Kijima, and
22 let me explain why.

23 This is, I'm putting up on the screen Dr. Subramanian's -- the
24 transcript of Dr. Subramanian's reply deposition, when Counsel was asking
25 him about this issue, starting at around page 24, 25.

26 JUDGE QUINN: What is the exhibit number of that, please?

1 MR. GARR: 2049. Yes, Exhibit 2049. So, Counsel asked
2 -- sorry. I just clicked the Adobe signature function, which is not what I was
3 trying to do. I was trying to do highlight. So Counsel asked, is it fair in
4 your view -- asking Dr. Subramanian -- that Kijima's conductive sealing
5 layer 7 would not have pinhole defects if it were made of gold? He says, no,
6 that's not true.

7 Going back to what was on the slide that we just saw, this is a
8 question that was asked in a prior deposition. I remember the testimony.
9 The question I asked was not specific to the conductive sealing film. It was
10 about whether a 1-micron thick layer of gold would have defects. In that
11 answer, if I put down a -- I'm going to sort of skip a little -- it would be
12 unlikely.

13 But remember, starting on page -- and now I'm on line 9 on page
14 25. When you have a multilayer structure, when you're putting one layer on
15 top of another layer, on top of another layer, it's still possible for the defects
16 to propagate up. So, if I were to put a 1-micron thick gold layer on a
17 completely flat surface, I wouldn't expect it to have pinholes. That's what I
18 was answering in my previous answer. But if I'm putting a 1-micron thick
19 layer on top of other layers that have pinholes, the -- such as the cathode that
20 you're going to see that is discussed in Suzuki, and that's present in Kijima
21 -- those pinholes can propagate up. So that's why we think that the --

22 JUDGE REPKO: You mean propagate up regardless of the
23 thickness of the sealing?

24 MR. GARR: Because in this case, in Kijima -- let's see if I have a
25 picture of Kijima. Okay. There's a basic picture. In this case, Kijima has a
26 cathode 1 and a conductive sealing film on top of it that's made of gold.

1 Gold is a metal. It's not serving a planarizing function. So, insofar as there
2 is defects on the cathode, which Suzuki tells you are inevitable, they will
3 propagate up and still pose an issue if you're putting something on top of it.

4 JUDGE REPKO: Is that at all a function of the thickness of the
5 sealing film itself, whether or not they propagate?

6 MR. GARR: Dr. Subramanian's testimony, I believe, was talking
7 about a film of this approximate thickness. I don't know if it's amazingly
8 thick, if it's not going to happen, but at these scales, that propagation would
9 happen, is what Dr. Subramanian was explaining, as I understand it.

10 JUDGE REPKO: Okay. Thank you.

11 MR. GARR: The last thing I wanted to mention is their -- going
12 back to the '1222 petition, there was an assertion made that reliance on
13 Burrows was a new argument. That's not true. Burrows is one of our
14 grounds. It was asserted for Claim 37. Claim 37 is a dependent claim that
15 depends on Claim 34, so we did apply Burrows for Claim 34, as well, as part
16 of using it for that dependent claim, shows that it would have satisfied the
17 independent claim requirements of Claim 34.

18 In addition, and regardless of whether it's new for -- no matter
19 what, it certainly shows that it's not undisputed that roll-to-roll films are
20 -- cannot be used for barrier layers. Burrows is an example of a roll-to-roll
21 film used for selectively depositing barrier layers. In this case, it's a roll-to-
22 roll using a shadow mask, but it's an example, and it's one of the asserted
23 references. So the idea that roll-to-roll cannot be used for barrier layers is
24 undercut by one of the references that forms the ground of our petition.

25 Those are the points I wanted to get to. Are there any other
26 questions from the Panel?

1 JUDGE BAER: Thank you, Mr. Garr.

2 MR. GARR: Thank you very much.

3 JUDGE BAER: Ms. Zhong, you'll have 13 minutes. Whenever
4 you're ready, we'll start the clock when you start.

5 MS. ZHONG: May it please Your Honors, I'll start with Claim 37.
6 Claim 37 is actually about wherein the step for selectively depositing at least
7 one planarization layer further comprises depositing an organic layer
8 through a shadow mask. So it has nothing to do with depositing a barrier
9 layer. So what Counsel just said that the Burrows was applied to selective
10 depositing a barrier layer, that was just a lie. Claim 37 is about selectively
11 depositing a planarization layer, nothing to do with selectively depositing a
12 barrier layer.

13 Now, I want to talk a little bit more about Claim 35, which is using
14 inkjet printing to selectively deposit a planarization layer. Counsel
15 mentioned that it was known to use inkjet printing to print sufficiently thick
16 layers. Paragraph 17 of Subramanian's reply declaration, he cited two
17 references: Exhibit 2023 and Exhibit 1028. Both are a couple of years after
18 the invention date. So the testimony is on Slide 59. I ask him whether
19 Exhibit 2023 was after filing date, and he confirmed that, same with Exhibit
20 1028. So there is nothing in the record to say that you can actually use inkjet
21 printing to get a planarization layer in prior art.

22 In addition, their references doesn't even have to do with
23 depositing planarization layer. Exhibit 2023, I asked them specifically. It is
24 not for OLED planarization layer encapsulation. He said that's also fair.

25 And Exhibit 1028, again, I ask him, is that having anything to do
26 with the planarization layer for OLED devices, which is the context of

1 Yamazaki. He said that's true, as well. And this is Slide 61.

2 And for Slide 63, he cites Exhibit 1029 for the concept that you
3 will be able to deposit inkjet -- using inkjet printing to deposit a
4 planarization layer over a large area. Exhibit 1029 is an article published in
5 December 2002, again, after the invention date. And the exchange on the
6 invention date, the publication date for Exhibit 1029 is on Slide 64, and it's
7 from Exhibit 2050, 57, page 57, lines 10 to 18.

8 In addition, Exhibit 1029 is, again, not about the planarization
9 layer. Exhibit 1029 is about depositing the organic layer in the OLED
10 device itself, not about the encapsulation layer, but the layer that's for light
11 emission. So that's a completely different layer. That layer can be pretty
12 thin, and it needs to, actually needs to be thin. It's not a planarization layer
13 where it needs to be sufficiently thick and over a large area. That, so the
14 Exhibit 1029 is about the pixel area. It's not about the encapsulation that
15 covers multiple pixel areas. So, again, what you have here is there is just
16 nothing in the prior art about using inkjet printing to get a planarization
17 layer.

18 And in fact, for the Weaver Ground, they are relying on the
19 Palanisamy reference to -- for the inkjet printing method. But inkjet printing
20 in Palanisamy, I asked Dr. Subramanian specifically whether he contends
21 Palanisamy's passivation layer is a planarization layer, he said, or not. He
22 says, I do not contend that the Palanisamy teaches planarization with respect
23 to the layer in question.

24 So, what you have here, you may have inkjet printing, you may be
25 using inkjet printing to form some other layers, but there is nothing in prior
26 art that actually teaches using inkjet printing to get a planarization layer that

1 meets the definition.

2 Also, Judge Quinn asked me whether there is a testimony
3 regarding topology and topography. And it's in Exhibit 2020, page 51, lines
4 1 through 8, where Dr. Subramanian confirmed that the two terms are used
5 interchangeably. That's all I have for '1222.

6 JUDGE BAER: I'd like to address the conception and reduction to
7 practice issue. When we were discussing the definition of a planarization
8 layer, you asserted that in the challenged patent, it had a special meaning,
9 and you based that on prosecution history and lexicography. Now, when we
10 turn to the inventors and their email exchange back and forth, there is no
11 mention of these two special characteristics about a planarization layer.

12 So my question is, why is it that we can read -- we can read into
13 the patent a definition based on lexicography and the prosecution history that
14 we may not read, that you told us we should not read into the prior art. When
15 the prior art says planarization layer, it doesn't mean that, but then we can
16 read that into a discussion, an email discussion, between the inventors that
17 not only doesn't mention those two features, but doesn't even mention
18 planarization; it just mentions a PML?

19 MS. ZHONG: So, first of all, you need to look at what they, their
20 understanding of a PML includes, right? So, in the '389 background, they
21 mention the typical PML. At least as far as they're concerned, it includes
22 planarization layer.

23 JUDGE BAER: But you said that a person of skill in the art
24 wouldn't understand that reading the other references. So what I'm
25 wondering is -- and you said it was based on something special in the patent.
26 Why is it that we can read a definition based on something special in the

1 patent; how can we read that into an email exchange between the inventors?

2 MS. ZHONG: Because a POSITA will see that what the -- what
3 the PML actually meant to the inventors, and that, you can get it from all the
4 intrinsic evidence.

5 JUDGE BAER: But the whole point of going to the email
6 exchange is that we've got to get behind the patent, right? The patent, we've
7 got to get something earlier than the patent. And I understand you to be
8 saying, well, earlier than the patent, we've got a PML layer. And now I'm
9 asking, why do we know a PML layer has these special features in the
10 patent? And you said, the patent itself. But in the patent itself, there's a date
11 gap. So how can we do that?

12 MS. ZHONG: Because the intrinsic evidence itself reflects what
13 the inventors understood the term to be.

14 JUDGE BAER: As of what date?

15 MS. ZHONG: I think it's as of the email exchange date, because
16 they use the terms consistently. So their email is February 2001. There is
17 nothing reflecting that between February 2001 and their invention disclosure
18 in August 2001, or like September 2001, there was any change, or when it's
19 as reflected, as incorporated into the final.

20 JUDGE BAER: But you specifically argued that the prosecution
21 history is what really informs our construction and your construction of that
22 term, so -- and that prosecution history is not present in their email
23 exchange. So, if we're getting that definition from the prosecution history,
24 how can we read that prosecution history into their email exchange as well?

25 MS. ZHONG: Because those also reflect what the inventors
26 actually understood the PML -- like, their understanding, it reflects their

1 understanding of the PML.

2 JUDGE BAER: The prosecution history understands the
3 inventors' construction of a PML; is that correct?

4 MS. ZHONG: As well as -- so, in the background, they
5 specifically mention the traditional PML has a planarization layer and a
6 barrier layer. And the specification itself also discuss certain features that's
7 incorporated in the planarization layer. And that's made more crystal clear
8 in the prosecution history.

9 So, a POSITA, when they read the specification, as well as other
10 parts of the intrinsic evidence, they will have an understanding as to what
11 the inventors understood the term to be. And they can then draw the
12 conclusion whether they were in possession of the planarization layer as
13 defined. But that's not necessarily case for Yamazaki or Suzuki, because
14 Yamazaki and -- Yamazaki, for example, or Weaver, they don't mention
15 anything about defects.

16 JUDGE BAER: No, but they mention a planarization layer.

17 MS. ZHONG: But their planarization layer, PML, it's not a term
18 of art. Each person may have their own reflection of what that planarization
19 layer features have to -- like, the -- what features they have to have, and you
20 have to read the patent to see what the -- that particular inventor had in mind
21 as to the properties a planarization layer have to have.

22 JUDGE BAER: Thank you.

23 MS. ZHONG: Can we stop the clocks?

24 MR. LINDSAY: I'd like to first address two points that came up
25 earlier. One was Dr. Subramanian's testimony about this multilayer
26 structure and having pinholes. It was, he was kind of trying to backtrack on

1 his original answer. May or may not be true. Unclear what he was actually
2 trying to testify to there. If you have pinholes, and then you have multiple
3 layers that have holes, is that defect going to not just propagate up, but
4 maybe multiply up? It's unclear.

5 But we do know then, in the context of the combination, that the
6 defects, if they're going to occur, are going to be on the cathode, right? So
7 that's the cathode of, according to Suzuki, as all we know right now is from
8 Suzuki, tells us that cathodes have defects, pinhole defects. So that's one
9 layer. That's the very layer right below where our conductive sealing film is,
10 right? That's -- and that's our micron thick layer. That's going to, according
11 to Dr. Subramanian, that's going to fill any pinholes here. There's going to
12 be no defects. It doesn't have the thin issue like Suzuki has. So that's, and
13 again, it's not in the papers. This is testimony that I don't believe has been
14 cited anywhere, but that's my recollection of it.

15 You know, the second thing that's interesting is, my colleague said
16 that it was in his intent that there would be smoothing that would occur in
17 this combination, but they didn't show it in the figure, but there was -- it
18 would be intended because that's, I guess, we're supposed to assume that.
19 And that makes sense because they didn't propose a construction, right?
20 They wanted this broad description of the combination, and it certainly
21 helped them on institution, but they have to live with that vagueness and that
22 broad combination now when they have to show how that combination
23 satisfies the construction, and they can't do that. It's not in the petition.

24 And Claim 35, I'll just jump to Claim 35. It has the same problems
25 as the other -- as the '1222 has, and that's that they rely in Sturm for inkjet
26 depositing the encapsulation layer. I'm on Slide 87. There is no

1 encapsulation or sealing layer in Sturm at all. And this is their description of
2 Sturm. I'm not cherry-picking disclosure here. This is from the petition,
3 okay? As you see, they're saying that Sturm discloses a method to create
4 selective deposit islands of material, and they give different examples:
5 electrodes, contacts, insulators, things like that.

6 So what we have is from -- I suppose I should go into this view.
7 So Claim 35, right, we're inkjet depositing a planarization layer that's the
8 encapsulation or sealing layer. We know that neither of the two Kijima or
9 Suzuki references have that, so they rely on Sturm. Sturm also doesn't have
10 it. So what you have is you have three references, none of which inkjet
11 deposit in a encapsulation layer. If none of the three references do that, the
12 combination can't do that.

13 Now, maybe it's like, well, okay, they're still inkjet printing some
14 things. What's it -- is it a big deal that it also applies to the encapsulation
15 layer? Well, apparently, it is, because their expert from the litigation said
16 that the printing technology for TFE, thin-film encapsulation -- this is his
17 words -- very different than when you're printing OLED device patterned
18 areas. Slide 90.

19 And Slide 91, he goes on to talk about, it's totally incompatible.
20 It's actually provided by a different vendor, and we're talking about
21 currently, okay? So it's not, you know, back when the time of the invention.
22 So what we see is that there is no disclosure in the references of what they
23 need, which is an inkjet-deposited encapsulation layer. And then we have
24 their expert saying, if you did want to do that, it would be totally different.

25 JUDGE BAER: With that, Mr. Lindsay, I'm afraid we're going to
26 have to ask you to conclude.

1 MR. LINDSAY: Yes.

2 JUDGE BAER: Any questions from my colleagues before we
3 finish up? Great. Thank you.

4 With that, the cases are submitted. We certainly appreciate
5 everybody's efforts to be here. We are going to leave, but if the parties
6 would please stay, and if our court reporter has any questions, as far as
7 spellings or anything like that, you can address that. But with that, the cases
8 are submitted, and we're adjourned. Thank you.

9 (Whereupon, the above-entitled matter went off the record at 3:14
10 p.m.)

IPR2024-01222 (Patent 6,949,389 B2)

IPR2024-01223 (Patent 6,949,389 B2)

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