

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.

IPR2024-01187
Patent 9,257,492 B2

Record of Oral Hearing
Held: November 19, 2025

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

APPEARANCES:

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

1:00 p.m.

JUDGE BAER: Hello, everyone. This is our hearing for IPR 2024-1187. I'm Judge Baer. With me is Judge Repko and Judge Quinn is here as well. Let's go ahead and get the parties' appearances if we could, please.

Who do we have for Petitioner?

MR. WEIDENFELLER: Good afternoon, Your Honors. Scott Weidenfeller for Petitioner. And with me today is Jared Frisch, Dave Garr, and Scott Burger.

JUDGE BAER: That's great. Thank you.

And for Patent Owner?

MR. WARRICK: Philip Warrick for Patent Owner.

JUDGE BAER: Great. Thank you, Mr. Warrick.

It's good to have you all here. We appreciate you making the effort to be here. We set forth our procedure in our hearing order. Just a few reminders, each side will have 60 minutes of total time. Split that up how you like. We do have the full record, including the slides in front of us. But if you would, as you're speaking, let us know what slide you're referring to or if you're referring to an exhibit, that would help us keep the record clear.

With that, any questions from Petitioner? Anything we need to address housekeeping-wise?

MR. WARRICK: No questions, Your Honor. We have paper copies if either of Your Honors would like them.

JUDGE BAER: That would -- I would appreciate it if you would bring a copy up.

1 Mr. Warrick, I don't know if you'd like -- this would be a good time if
2 you have them --

3 MR. WEIDENFELLER: No questions, but I also have paper copies.

4 JUDGE BAER: That would be great. Thank you.

5 MR. WEIDENFELLER: Do you want one?

6 JUDGE REPKO: I would not. Thank you.

7 JUDGE BAER: Appreciate it. Mr. Weidenfeller, anything further?

8 MR. WEIDENFELLER: Nothing further --

9 JUDGE BAER: Mr. Warrick, anything further from you?

10 MR. WARRICK: No, Your Honor.

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

12 Mr. Weidenfeller, do you want to reserve any of your 60 minutes for
13 rebuttal?

14 MR. WEIDENFELLER: Thank you, Your Honor. Mr. Frisch will be
15 arguing and we'd like to reserve 15 minutes.

16 JUDGE BAER: Great. I'm going to put 45 minutes on the clock.

17 MR. FRISCH: Thank you.

18 JUDGE BAER: And you may begin when you're ready.

19 MR. FRISCH: I'm happy to begin whenever Your Honors are ready.

20 JUDGE BAER: Please.

21 MR. FRISCH: Good afternoon, Your Honors. Jared Frisch of
22 Covington & Burling for Petitioner Samsung Display. Go to Slide 3 of
23 Petitioner's presentation. As a brief background, the challenged '492 Patent
24 is directed to a method of forming a passive electronic component, for
25 example, a capacitor, as well as a method for forming an optoelectronic

1 assembly that includes both that passive electronic component and an
2 optoelectronic component combined. Independent Claims 1 and 16, as this
3 will become relevant later, are both directed to the passive electronic
4 component, whereas Independent Claim 10 is directed to the optoelectronic
5 assembly having both the passive component and then optoelectronic device.

6 Moving to Slide 4, review is instituted based on three grounds with
7 Ground I based on Ingle in view of Hasei, Ground II based on Hanamura,
8 and Ground III based on Hanamura in view of Egitto.

9 Moving to Slide 5, the disputes as to each of the instituted grounds are
10 actually fairly limited here. The disputes as to Ground I concern two claim
11 elements and then the separate issue of whether the proposed combination
12 results in a working capacitor. The disputes as to Ground II are primarily
13 grounded in Pictiva's claim construction positions. Pictiva's claim
14 constructions do not impact Ground I, so I'm planning to discuss those in the
15 context of my presentation regarding Ground II, unless Your Honors have
16 questions before that. The dispute for Ground III is limited simply to
17 whether a person of ordinary skill in the art would've been motivated to
18 implement Egitto's particular resistor design shape in Hanamura's structure.

19 Turning to Slide 7 and Ground I, Ingle in view of Hasei. Ingle is a
20 patent publication that shares the same named inventor as the '492 Patent
21 that's being challenged. Looking at Slide 8, as a result of this shared
22 inventorship, the '492 Patent uses substantially the same base structure as
23 was previously disclosed in Ingle.

24 Moving to Slide 9, further, just as described in the '492 Patent, Ingle
25 teaches the use of a structured process, for example, printing, to reduce the

1 manufacturing time and costs associated with photolithography. So they
2 share that common goal and the common structure.

3 And moving to Slide 10, Ingle teaches that its base structure is
4 versatile. It could be used to build any number of electronic components,
5 including a capacitor and/or an OLED, which is what we're going to get into
6 later.

7 Moving to Slide 11 and moving for a moment to Hasei, Hasei was
8 published approximately seven years before Ingle. It's an earlier reference
9 and it taught a process for building an organic EL device and specifically it
10 taught a process for building an active Matrix OLED display. And again,
11 that will become important later because an active matrix display is known
12 to use a capacitor with an OLED, so a passive electronic component with an
13 optoelectronic component.

14 Moving to Slide 12, like Ingle and the '492 Patent, Hasei also taught
15 the use of a structured process, specifically a printing process known as
16 droplet discharge.

17 JUDGE BAER: Counsel, just to --

18 MR. FRISCH: Yes.

19 JUDGE BAER: -- sort of cut to the chase, could you articulate for me
20 what exactly are you using from Hasei? What is your combination
21 specifically? What do you need from Hasei and what's already in Ingle?

22 MR. FRISCH: Sure. So if I can start with Ingle, because that's the
23 base reference. So Ingle provides a base on which to build any number of
24 components, as I noted. So you can build a capacitor, you can build an
25 OLED. Ingle leaves open how to finish those particular components. So it

1 talks about, for instance, building on the first electrode layer, it talks about
2 building a dielectric. It talks about building a spot for the OLED. It then
3 says you can kind of finish those components under any known
4 manufacturing method.

5 Hasei comes in because Hasei actually provides specifics as to how
6 it's building, for example, its OLED, right. So it tells you the particular
7 layers that go in the OLED and the cathode. And more to the point of what
8 the parties are arguing over, it tells you that when you're building that last
9 electrode layer, that cathode layer, to do it in a structured fashion. So you
10 can use this droplet discharge printing method to build just the electrode or
11 the metal where you want to build it.

12 And so essentially, what we're taking from Hasei and putting into
13 Ingle is the OLED stack. So the actual OLED itself, we're putting that
14 exactly where Ingle says to build that OLED. And then we're taking this
15 process of using this printing -- which Ingle does discuss, by the way, as I'm
16 going to get into. But Ingle has a background where it also says you can use
17 printing including for its metal layers. But we're taking the idea that
18 specifically for that top metal layer, Hasei explains, well, you can use this
19 printing process to print on that metal. So that's essentially what we're
20 taking over from Hasei and putting --

21 JUDGE BAER: But who teaches where to put that top metal
22 component? Is that Hasei, or is that Ingle, or is that relying on your expert
23 testimony to fill that in?

24 MR. FRISCH: I think it's a little bit of both of Hasei and Ingle. So
25 Ingle already tells you where to put the OLED, the whole stack. And so you

1 would know that the cathode has to be on top of that stack, so you know the
2 location of where that would go in Ingle. That's the right side of their base
3 structure.

4 And then in terms of the other side, Ingle actually does tell you that
5 when you're building these components, the trench that has the insulating
6 material that goes into it is the -- forms the later insulation for the electronic
7 component. So you would take from that that if you're building a capacitor,
8 one of these electronic components, you're going to build it in that spot
9 where you have kind of the insulator already built. And that's the point we
10 make is that Ingle already tells you that you'd essentially build the electronic
11 component there. It has two of the three components of a capacitor already
12 at that point and so you would understand that if you're finishing that
13 capacitor, that is where you'd put the cathode.

14 JUDGE BAER: I'm just a little confused because Patent Owner
15 makes the point that the dielectric there doesn't overlap very much with the
16 first layer and that you might have a problem with a capacitor. And yet
17 Ingle actually says you can build a capacitor. So what is Ingle talking about
18 there? It seems like an awkward fit there when Ingle is talking about, you
19 could use this for a capacitor.

20 MR. FRISCH: Sure. Thank you, Your Honor. I think first of all, the
21 amount of kind of overlap, which is this fight, I think assumes a scale that --
22 that's not provided in Ingle. I think Ingle actually tells you that it can go
23 beyond. That there is no scale in its images. And so --

1 JUDGE BAER: But Ingle doesn't teach that -- excuse me. Hasei
2 doesn't teach that capacitor, does it? Or does Hasei actually teach that
3 capacitor?

4 MR. FRISCH: Hasei teaches a capacitor in the sense that it's building
5 an active matrix and both sides' experts agree that you can't have an active
6 matrix OLED without a capacitor next to it. Every active matrix has a
7 capacitor that holds the charge on that optoelectronic component.

8 JUDGE BAER: So in that Hasei Figure 3, is the capacitor there
9 between -- I think it's layer 50. I can't remember. The one that's colored
10 gray. Where is the capacitor in Hasei?

11 MR. FRISCH: The capacitor is not shown in the figures in Hasei. It
12 would be understood by the experts, and indeed Pictiva's expert
13 acknowledged in his deposition that he would agree that an active matrix has
14 a capacitor, but it is not shown in that figure.

15 JUDGE BAER: So you're using just Hasei's cathode to make a
16 capacitor. Do I have that right?

17 MR. FRISCH: That's right. That's the only thing that's necessary on
18 top of what Ingle already has. Ingle already has the first, I guess I would
19 say, two thirds of a capacitor with the first electrode and the dielectric. And
20 the capacitor is just a sandwich of two metal layers, the anode and the
21 cathode, with dielectric in between. So Ingle already has two parts of that
22 and specifically tells you, you know, you can use this to build a capacitor.
23 And yes, we're essentially using Hasei's droplet discharge method, which it
24 is using already as a cathode for the OLED, to build two cathodes at the
25 same time.

1 JUDGE BAER: So is your answer to why there's this awkward fit,
2 and this awkward fit being why Ingle says, you can use this to build a
3 capacitor, and yet there doesn't appear to be much overlap, your answer is
4 just, well, that's not drawn to scale. There would be more overlap?

5 MR. FRISCH: I think that's part of the answer. I think the other part
6 is that capacitors were ubiquitous by the time of both Ingle and the '492
7 Patent. They've been around for a very long time.

8 JUDGE BAER: And I appreciate that they're ubiquitous, but the
9 claim does articulate a particular arrangement. And I don't see that
10 arrangement in prior art so that's where I'm struggling a little bit with exactly
11 where do you get that? Do you get that arrangement -- and that arrangement
12 being the above limitation, do you get that arrangement from one reference,
13 from both references, or the way you put them together?

14 MR. FRISCH: I do think it's the way you put them together. I think
15 Ingle starts by teaching you that you're building the capacitor. It tells you
16 that it would be at that location. But admittedly, to do the last step, you're
17 getting that from the fact that Hasei is telling you how to build the cathode.

18 JUDGE BAER: When Ingle tells you to do it at that location, can you
19 point me to the disclosure in Ingle where it says to build it at that location?

20 MR. FRISCH: Yes, Your Honor. If you'd just give me --

21 JUDGE BAER: I assume this is the disclosure on Page 6 of Ingle.

22 MR. FRISCH: It's actually -- I believe it's at Ingle, Page 20, Lines 1
23 through 7, where it talks about the subsequent insulation -- the trench layer
24 and the insulation that goes in it being between the cathode and the anode of
25 the subsequent electronic component.

1 JUDGE BAER: What lines again on Page 20?

2 MR. FRISCH: I believe it's 1 through 7.

3 JUDGE BAER: Right. That has the trench.

4 MR. FRISCH: Yes.

5 JUDGE BAER: How is that then the location for the capacitor?

6 MR. FRISCH: Sure. So if you look on the image on the screen here
7 at one of the representative images where we built the capacitor, the trench
8 is that area between -- well, right underneath kind of where we've got the
9 gray showing the cathode or capacitor. So that's the trench. And then the
10 insulation material is sitting inside of that. That -- that's kind of the glob in
11 there. And so Ingle says, you build that trench right there and you put the
12 insulation material on it, and then you -- that's the later location for the
13 electronic component. That is what I just cited in -- on Page 20. And so
14 that's what tells you that you built the capacitor.

15 JUDGE BAER: Because there earlier on Page 3, it says the electronic
16 component could be the capacitor?

17 MR. FRISCH: Yes.

18 JUDGE BAER: Okay. Thank you.

19 MR. FRISCH: Any other questions or --

20 JUDGE BAER: No. You can proceed with where you were.

21 MR. FRISCH: Okay, sure.

22 So jumping ahead to Slide 18, looking at the issues in dispute, and
23 obviously we just talked about one of them. The disputes as to the first
24 round really boil down to three main issues. So one is the electrode layer
25 applied in a structured fashion. The second is the one that we just talked

1 about, an electrode layer applied above the first contact region. And the
2 third is this concept of a working capacitor.

3 Moving to Slide 19, I'll turn to the first argument. As we previously
4 discussed, both Ingle and Hasei teach the benefits of applying a layer in a
5 structured fashion. They specifically talk about using a structured
6 application over (inaudible). And I'd submit that Pictiva's arguments to the
7 contrary on this particular argument are unavailing.

8 Looking at Slide 20, first, Pictiva asserts that Ingle only contemplates
9 structured application of its dielectric and protective material layers, but
10 that's plainly incorrect. As is shown here on the screen, Ingle explicitly
11 teaches that other components, including the electrode regions and
12 electrically conductive layers, can be structured via printing. And printing is
13 the overarching method that's actually used by Hasei, Hasei's droplet
14 discharge, which is a printing method.

15 And second, moving onto Slide 21, Pictiva asserts that Hasei does not
16 disclose applying an electrically conductive electrode in a structured fashion.
17 And again, I think Pictiva's assertion is just flatly incorrect. Hasei also
18 explicitly teaches that it's electrically conductive electrode and that's
19 negative electrode 50 in Hasei, may be formed by droplet discharge method,
20 which is undisputedly a structured process. As you see on the screen, the
21 top right is the description talking about the Figure 3 embodiment and it
22 says, "The negative electrode 50 may be formed by the droplet discharge
23 method depicted in the description of Step S1."

24 In the bottom, right hand of the screen is the Step S1 that it's calling to
25 and it says, "With this method, the transparent electrode material is

1 discharged only onto the portion of the substrate where the conductive
2 pattern is to be formed." That's structured application.

3 Moving to Slide 22. To try to circumvent that plain statement in
4 Hasei, Pictiva argues that Hasei's Figure 3 illustrates negative electrode 50
5 as continuous. And this argument fails for a host of reasons. First, drawings
6 of the patent need not illustrate the full scope of the invention. And as just
7 discussed, Pictiva argument ignores Hasei's explicit written teaching to the
8 contrary.

9 If we go to Slide 24, second, Figure 3 is a two-dimensional cross-
10 section and as both sides' experts agree, you can't determine from a cross-
11 section alone whether negative electrode 50 as depicted is continuous across
12 the entire display or not. You can only see one side of it. Now, Pictiva
13 argues that negative electrode 50 is what they call a common electrode, but
14 it cites nothing from Hasei to support that proposition. There's nothing in
15 Hasei that calls it a common electrode.

16 And in fact, Pictiva's own expert, Dr. Pattison, he was only willing to
17 definitively take the position that electrode 50 is common as to Hasei's
18 subpixels. And that's just a portion of the display. That's just the red, blue,
19 and green, but that doesn't make up all of the pixels in the display. And in
20 fact, as shown here, Dr. Pattison explicitly acknowledged -- and this is not
21 even in his deposition, this is in his own declaration, that it may not be
22 common as to all of Hasei's pixels. That's what he wrote in his own
23 declaration.

24 Moving to Slide 25, even assuming Pictiva's characterization was
25 correct, which I don't believe it is, a person of ordinary skill in the art would

1 not just blindly apply electrode 50, even if it was being put down in a plainer
2 fashion, to Ingle, because doing so would create a short circuit between that
3 OLED stack. That's what we've shown here. You'd short out the cathode
4 and the anode. And a person of ordinary skill in the art is not an automaton.
5 They're not just going to put down a plainer -- or a layer of material and
6 short out the device. They're going to want to make sure to build a working
7 device.

8 And if you look at Slide 26, as Dr. Kattamis explained, a person of
9 ordinary skill in the art would've recognized that if you did build a plainer
10 layer, you'd then have to etch. And etching actually creates a risk of
11 damaging the OLED's organic material, which has been a well-known
12 phenomena for a long time that the OLED material does not do well with
13 etching. And therefore, you'd understand that you'd want to put it down in a
14 structured application so you did not have to perform that extra step.

15 Moving for a moment to the second argument. We've already covered
16 some of this, so I'll try to make it brief, but this is the applying electrically
17 conductive electrode above the first contact region argument. As previously
18 discussed, we think a person of ordinary skill in the art would be motivated
19 to build the capacitor next to the OLED because you're building an active
20 matrix here. Doing so does result in some overlap between this top contact
21 layer and that first electrode region on the left. I know there's been some
22 argument as to whether -- in this particular image, how much overlap there
23 is. But again, that's, A, an issue of scale and, B, ignores the fact that the
24 petition was quite clear, as shown here on Petition Page 38, that the degree

1 to which you'd have to extend that pink and gray would depend on what type
2 of capacity you're building.

3 Capacitance is based on the area of overlap between electrodes. It's,
4 again, a well-known equation. I don't think either side disputes that. And so
5 if a person of ordinary skill in the art is building a capacitor, depending on
6 how much capacitance they need, they will change the overlap. That's how
7 it's been done for many years prior to '492 Patent and prior to Ingle.

8 JUDGE REPKO: So your reasoning here is, like, you would adjust
9 this based on need?

10 MR. FRISCH: You would --

11 JUDGE REPKO: This overlap.

12 MR. FRISCH: Yeah. You would adjust it based on the -- how much
13 capacitance you need, right. So if you're building an active matrix, you have
14 to have a certain amount of capacitance to hold the charge on the particular
15 OLED. You always have to have some overlap, right, to have a capacitance.
16 Once you know you're building a capacitor, there has to be overlap in order
17 to make it function. And then the amount of overlap is varied based on how
18 much capacitance you're trying to build in your (inaudible).

19 JUDGE REPKO: Do you have anything on the record that kind of
20 talks about that trade off? You know, the correlating overlap of specific
21 devices?

22 MR. FRISCH: With respect to the area and the equation, we do. It's
23 cited in the Egitto reference, I believe, itself. Our expert also put in his
24 declaration, I believe, the kind of equation that describes that area

1 calculation. I apologize, I don't have those particular cites with me, but
2 yeah, I believe it's in the record.

3 JUDGE REPKO: Yeah, I was looking at your petition and the
4 obviousness rationale, and it seems just to generally talk about the overlap
5 and how it's useful, but I didn't really see any specific instances that you
6 were relying on, any specific embodiments or teachings from the references.
7 Is that a correct characterization of your obviousness rationale? You're not
8 relying on a particular degree of overlap for a particular application?

9 MR. FRISCH: That's correct that we haven't provided a specific
10 application where we say we need to have this X amount of capacitance and
11 therefore this amount of overlap. But again, I think we have set forth the
12 fact that in order to have any capacitance, you naturally have to have overlap
13 and then it's just a question of how much. And I don't believe the claims
14 require any specific amount of overlap. They just require that it is built
15 above. And in fact, in the '492 figures, you see that with the cathode kind of
16 coming up over the dielectric material and only partially overlapping the
17 electrode region.

18 JUDGE REPKO: Should I think of that as some sort of design choice
19 rationale? You know, being above. How should I see that obviousness
20 rationale?

21 MR. FRISCH: The part that it's above the electrode region?

22 JUDGE REPKO: Well, you're telling me you -- there's a certain
23 amount that someone would select based on the application, you know, the
24 overlap. Is that kind of like a design -- it sounds like a design choice?

1 MR. FRISCH: I think it is a design choice in the sense, again, that
2 you always need to have some overlap, so how much of it is a design choice
3 with respect to your particular application. But I think it's also -- you know,
4 and it's a known technique in terms of making sure that you have an overlap
5 between your anode and your cathode that you're applying to this particular
6 structure. So I think it's that as well, but --

7 JUDGE REPKO: Thank you. No further questions.

8 MR. FRISCH: Okay.

9 Jump ahead now to Slide 38 and the kind of third argument here,
10 Pictiva's argument about whether or not you'd result in a working capacitor.
11 And again, we've discussed this in quite a bit of detail, so I won't dive into it
12 too much, but essentially the argument depends on the same incorrect
13 assumption that we were talking about, that there is either no overlap or that
14 there's an insufficient amount of overlap. And for all the reasons I just
15 discussed, I think it would be obvious that, A, there is overlap. And again,
16 the claim doesn't require a specific amount. And B, that a person of ordinary
17 skill in the art would understand that you would need to have enough
18 overlap to create the capacitor for any particular implementation or circuit.

19 Moving to Slide 41, there's another argument that Pictiva makes about
20 the dielectric and Ingle somehow being too steeply curved. And again, this -
21 - once again, properly -- improperly assumes scale in Ingle's figures. As
22 previously discussed, no such scale exists.

23 It also just ignores the simple fact that a person of ordinary skill in the
24 art would not expect the real-world implementation of Ingle's dielectric to be
25 curved to a point where it wouldn't work. Ingle specifically tells you that

1 you're building a capacitor on that base structure. I don't think anyone
2 would take that teaching and think to themselves, well, I'm going to build
3 the capacitor in a way that it wouldn't function. And Ingle's obviously
4 talking about building a functioning capacitor.

5 Moving to Slide 42, as explained by our expert, a person of ordinary
6 skill in the art would understand that the process for forming the dielectric
7 can be readily adjusted to determine how much curve there is. And if we go
8 to Slide 43, indeed, the '492 Patent actually depicts similar rounding to what
9 Pictiva is pointing to. And actually, the '492 Patent itself even calls its own
10 dielectric rounded. This is at Column 12, Lines 13 through 22. However, as
11 Pictiva's expert acknowledged, the '492 Patent never identifies any rounding
12 of the dielectric as being a problem. This hypothetical problem about it
13 being too steeply curved, I don't think there's really any basis for that as to
14 why it wouldn't work as a capacitor.

15 JUDGE REPKO: Is this an issue with maybe specificity of why you
16 want to do this? I mean, it sounds like -- to a degree, like on Slide 42 -- look
17 at that for a moment.

18 MR. FRISCH: Sure.

19 JUDGE REPKO: It does seem like perhaps there is no specific
20 example that you're relying on. It's really just a design choice and you could
21 curve it in a certain way or get a certain degree of overlap. The ability to
22 change it seems to be known, but the specific structure, you haven't planned
23 anything. You're relying upon the petition.

24 MR. FRISCH: Sure. But I think the underlying issue here is they're
25 kind of looking at the particular figure and saying, if you look at this figure,

1 how it's drawn, this is just -- this as is drawn is just too steeply curved to
2 ever work. And I would just say there's no basis for that. And again, I don't
3 think any person of ordinary skill in the art would look at the figure in Ingle
4 and really make that assumption after Ingle's telling you to build it as a
5 capacitor. I think this goes back to the fact that there's no scale. I don't
6 think a person of ordinary skill in the art would look at that and say, oh, well
7 clearly you've just never built a capacitor on this base because look how
8 curved they've made the dielectric.

9 JUDGE REPKO: Like how curved you -- you've drawn it?

10 MR. FRISCH: Drawn it, yes.

11 JUDGE REPKO: Yeah. So there -- there's really nothing to -- I
12 mean, the whole drawing, you just kind of made up, right? I mean, the
13 whole Ingle drawing, the relationship, the curvature, the amount of overlap,
14 all of this stuff is selected by your expert, right?

15 MR. FRISCH: Well, no, the Ingle curvature of the dielectric is shown
16 in Ingle. So that is there. And what Pictiva's pointing to is not a
17 modification as done by us, it is just how the dielectric is actually drawn in
18 Ingle itself. And they're saying, well, the way Ingle drew it, it's so rounded
19 that you could never build a capacitor there. And, you know, again, the first
20 answer to that would be it's clearly not drawn to scale. The second is, a
21 person of ordinary skill in the art would not understand it to be so steep and
22 curved that you couldn't build what Ingle is telling you to build. And the
23 third is just that a person of ordinary skill in the art understands how to build
24 a capacitor. And if for some reason it was too steeply curved, which we
25 don't think it is, that's not something beyond the skill of a person of ordinary

1 skill in the art to change during the manufacturing or ensure during the
2 manufacturing it's not too steeply curved.

3 And again, the '492 Patent itself has curvature, says it's rounded, does
4 not identify any problem in building a capacitor based on that. This is just
5 something that has been asserted with no underlying foundation in any of the
6 references or really anywhere.

7 JUDGE REPKO: So if I'm understanding correctly, and you have
8 Figure 1, the symbols in Figure 1, you have any of these symbols, not
9 necessarily dimensions and shapes and things like that, that's how you view
10 Figure 1 there? And then you're going to modify it by adding additional
11 shapes on there, and that's what we see in the petition, this additional gray
12 part over the pink part, right? That was your expert modifying that?

13 MR. FRISCH: Yes. Adding the gray was the expert modifying, but
14 he didn't change any of the underlying shapes beneath that.

15 JUDGE REPKO: But they're just shapes. They're not -- you're not
16 saying that -- the expert is not saying, okay, this is how we -- dimensions,
17 the ratios. None of this is how --

18 MR. FRISCH: Yes. That's right. I believe that's consistent with case
19 law, which is that you don't read dimensions into the figures unless the
20 patent or the reference specifies that you should. And all of these references
21 are actually quite explicit that they're not trying to read dimensions into their
22 figures and that they are open to further interpretation that the claims go
23 beyond them.

24 JUDGE REPKO: All right. Thank you.

25 JUDGE QUINN: I have a question for you if I can interrupt.

1 MR. FRISCH: Yes.

2 JUDGE QUINN: Okay. It seems to me, some -- if you can address,
3 please, the argument Patent Owner makes that it's not just the idea that you
4 have to include this electrode layer with sufficient length or capacitance to
5 create a capacitor. Your dielectric also needs to be formed in a certain way
6 so that you have an effective capacitor. And drawing parallels there, with
7 the Figure 7 of the patent, it appears -- it looks to me like they're making like
8 a hindsight argument. And the only reason the electrode layer, where it is on
9 that dome, is motivated by the disclosure of the patent itself.

10 Can you address that please?

11 MR. FRISCH: Sure. Thank you. I think again, that goes back to the
12 previous item that we discussed, which is, I think Ingle actually does very
13 explicitly tell you that you build the trench, and that's where the capacitor
14 goes. So I would say that this is not in hindsight. This is following the
15 teachings of Ingle as to where it goes. And then it all --

16 JUDGE QUINN: But if I can --

17 MR. FRISCH: Sure.

18 JUDGE QUINN: Just to play devil's advocate with you on that, Ingle
19 says, you can put a capacitor, a transducer, a -- I mean, all sorts of devices
20 starting with the trench. It's not just a capacitor. So it's not really teaching
21 only that passive element. It teaches a lot -- many other things that you
22 could do with it. And obviously, the trench alone is not going to do it.

23 So are you still going from there to the specific disclosure of Figure 7
24 on the patent?

1 MR. FRISCH: Yes. I think that just goes to the fact that capacitors
2 were well known. It was well known that the capacitor's three elements, two
3 metal layers with insulation between them. There really isn't much more
4 unique to the capacitor than that. You're kind of building classic, like, ice
5 cream sandwich. And so this does go back to how would one read Ingle.

6 I agree with you that there are a number of things you could build at
7 that trench. One of which is a capacitor. And I think a person of ordinary
8 skill in the art looking at that teaching and saying, I'm going to build, in this
9 instance, the capacitor, although I could build other things, would look and
10 say, I already have one electrode. I already have my dielectric. The only
11 thing missing for the capacitor is just the other cathode layer. And so that's
12 why they would put that there.

13 JUDGE QUINN: So if you start with the knowledge that you can
14 build the capacitor using structure of the trench by using a dielectric on top
15 of that, wouldn't you also need to know how the shape of the dielectric
16 would be, resulting from whatever method you used to melt the dielectric
17 onto the surface? And then also how far you want the electrode to extend,
18 such that you can create a capacitor, don't you need also that knowledge?

19 MR. FRISCH: You would take into account -- this goes back to what
20 we were talking about earlier, the amount of capacitance you're building.
21 And I agree, if you wanted more capacitance, for instance, then you would
22 have to have more overlap. And of course, the two metal layers can't touch.
23 They short out if they touch. And so a person of ordinary skill in the art
24 would understand that you need dielectric throughout to keep them separate.
25 But I think it would essentially just be taking that into account. How much

1 capacitance do I need? It's the fundamental equation for capacitance based
2 on area. And you would just build it to that area.

3 In terms of even shapes, you know, for example, this steeply curved --
4 if you have more insulation, less insulation, you can still build a capacitor
5 even if it's not perfectly parallel. Now, it may change that equation a little
6 bit in terms of how you ultimately end up with capacitance. But these are all
7 well-known concepts. In fact, their expert acknowledged in his deposition
8 that both the idea of capacitors as well as how to vary these parameters have
9 been well known for a long time.

10 And I don't think that's an argument they've made in terms of person
11 of ordinary skill in the art wouldn't know how to build a capacitor. It's been
12 limited to this idea that the figure itself draws the dielectric too steeply for
13 that -- as we've modified it for that one exemplar, we haven't shown in the
14 image itself, you know, sufficient overlap. But I don't think they have said
15 that a person of ordinary skill in the art would not know how to do these or
16 would not be motivated to make those changes.

17 JUDGE QUINN: Well, I don't think that my question was addressing
18 specifically whether Patent Owner alleged that you wouldn't know how to
19 do it. My question is whether you proved that the knowledge was there and
20 also that the resulting structure would be such that you would have that
21 electrode and some way be above the first contact region, which your figures
22 that are provided to us do not show.

23 MR. FRISCH: I believe the figure does show some overlap, but I
24 would agree that the figure was meant to just be exemplar in the sense that
25 we showed that you had the base structure. And we were showing where the

1 cathode would go on top of the dielectric. The petition then went beyond
2 that and explained that what you would do if you wanted more capacitance
3 was that you would build out the insulation layer and that top cathode layer
4 as well. So I think that was all discussed.

5 In terms of proving it, I think we have our expert on the record
6 explaining that this was kind of well known how you build capacitor. And
7 we have their own expert, in his deposition, acknowledging that these are the
8 parameters you look at when building a capacitor. They were well known
9 and they were often used.

10 JUDGE QUINN: Thank you.

11 MR. FRISCH: Yep. Thank you.

12 I'll jump ahead, because I know my time is limited here, to the next
13 ground, Ground II, Hanamura, specifically Slide 47. As discussed, Pictiva
14 does not actually dispute that Hanamura renders obvious a majority of the
15 challenged limitations for this particular ground. Pictiva only argues that
16 Hanamura does not render obvious limitations 1(b) through (c) and 16(b)
17 through (c). And as we demonstrate in the briefing, the arguments really
18 depend almost entirely on the adoption of Pictiva's claim constructions. So
19 I'll jump to those.

20 Going to Slide 52, there's essentially three claim construction
21 disputes. And it's worth noting that none of Pictiva's claim constructions
22 were raised in the related litigation despite the fact that numerous terms were
23 briefed and construed for the '492 Patent. But none of these were raised.

24 Second, these disputes turn on three non-technical terms with
25 commonly understood meanings, namely, on, in, and forming. Pictiva hasn't

1 presented any legitimate reason to depart from the plain and ordinary
2 meaning of these terms.

3 Okay. It looks like it cut out for a moment.

4 JUDGE BAER: I see you've lost your screen. We'll -- it'll go back.
5 There we go.

6 MR. FRISCH: Oh. I think it's back. Thank you.

7 Indeed, Pictiva's expert has acknowledged that he's not presenting any
8 lexicography arguments, and Pictiva has not otherwise argued that there's
9 been any disavowal of claim scope.

10 Turning to Slide 56, which is the first of these issues, the first and
11 second electrically conductive layers. Pictiva has argued that these layers
12 should, one, exclude portions of the first electrically conductive layer not
13 formed on the substrate. Two, exclude portions of the second electrically
14 conductive layer not formed on the first. It's a very similar issue. And three,
15 exclude portions of the layers that are non-conductive.

16 Moving to Slide 57, Pictiva's first two restrictions effectively attempt
17 to define a layer by what it's on. And I would submit that Pictiva gets the
18 analysis kind of exactly backwards. A layer of material is independent -- or
19 is a layer -- a material is a layer independent of what it is or is not on.
20 Whether that layer then meets the remainder of the claim limitations is kind
21 of a separate question. And as their own expert acknowledged at his
22 deposition, you first need to determine if something is a first layer. Then
23 you need to determine if something is a second layer. Then you need to
24 determine kind of the position of those layers in order to determine if the
25 claim is met.

1 And I think this is actually best shown through Pictiva's own
2 hypothetical. This is a -- an image from the patent owner response that
3 Pictiva put together. As Pictiva's expert acknowledged, each of these
4 orange, green, and red materials depicted here are unquestionably layers.
5 Each one of them is a layer. It's drawn as a layer. And if they include
6 electrically conductive material, they would be electrically conductive
7 layers. Yet, Pictiva argues, that's what's highlighted here, that if the black
8 layer is mapped to the first electrically conductive layer, at least the central
9 portion of the orange, green, or red layer is not a second electrically
10 conductive layer, because it's not on the black first electrically conductive
11 layer. So according to Pictiva, continuous portions of each of these layers
12 just cease to be part of the layers merely because they're no longer above the
13 black layer. And that's --

14 JUDGE BAER: Well, I think their point is that it ceases to be a layer
15 on another layer. Not that it ceases to be a layer itself. And so what I'm
16 trying to do is give some meaning to this term layer. And I understand kind
17 of poking holes with each individual piece, but what I'm struggling with is
18 what do you understand a layer to be? Because I understand you to be
19 saying, well, look, it's not continuous material. So I get that. But what is a
20 layer? Is it a certain height? Is that what we're talking about?

21 MR. FRISCH: I think a layer is generally -- essentially, a certain kind
22 of thickness of material, you know? What I moved to on the screen here is
23 Slide 59.

24 JUDGE BAER: But if that's true, then your first electrically
25 conductive layer sort of fails that, because at one point, it's got a thickness.

1 And at another point, it doesn't have a thickness because that material no
2 longer exists.

3 Do I have that wrong?

4 MR. FRISCH: I would disagree with that respectfully, Your Honor.
5 A layer does not need -- particularly, as it's done in semiconductor
6 manufacturing, a layer does not need to be continuous. Layers are put down,
7 as the '492 Patent talks about, in structured fashion. They're also put down
8 in a planar fashion where you etch portions of that layer away. Now, all of
9 that material that remains is still one layer.

10 Now, in terms of the whole or the, kind of, absence region that we're
11 talking about, that may not be part of the layer, but it is still in the layer,
12 which is what the claim requires, right? So the claim is talking about
13 forming a trench in the layer, such that you've essentially separated two parts
14 of that layer, right? The purpose is to make sure they don't short circuit.

15 So I would disagree that what we pointed to is not a layer. We have
16 pointed to particular materials. Hanamura actually lays its -- what we call
17 the first layer down in one process. It puts a screen up top. It deposits a
18 layer of material. Now, it doesn't deposit it everywhere because it does
19 selectively -- it selected that position just like the '492 Patent calls for.
20 That's what forms that layer. You then form a second layer on top, actually,
21 doing a very similar exercise. You put a new screen on. You put a layer of
22 material down. It ends up on top of it. What results is you have these two
23 layers and you now have this trench formed in it, such that they don't short
24 circuit.

1 Right. Otherwise, this is exactly what their -- this is exactly what
2 Pictiva's expert said is the purpose of this kind of claim helmet. You form
3 the trench to make sure that, A, you get down to the substrate, and, B, you
4 separate the layer, so they don't short circuit. That's exactly what Hanamura
5 does through its structured process.

6 JUDGE REPKO: Is there a separate act of forming the trench, or is it
7 just the result of the first two steps?

8 MR. FRISCH: In Hanamura, it's part of -- it's simultaneous. It's part
9 of building the first and second. But I would submit that forming is not a
10 term of removal essentially or a subtractive step. That's what Pictiva has
11 argued, is that forming requires removal, but there's nothing about the term
12 forming -- we have the definition of forming in our briefs, and I can find it
13 here, to the extent helpful.

14 JUDGE QUINN: Okay.

15 MR. FRISCH: But removal is not part of the definition of forming.

16 JUDGE REPKO: Well, it has to be something though, right? Like,
17 you have three steps. Two of them, you form the first layer, form the second
18 layer. And then the third step is just it's there -- that the trench is there?

19 MR. FRISCH: It -- it's making sure that as you follow these steps,
20 that you have built a trench. You know, the Federal Circuit has found that
21 you don't have to read or you don't read order into steps absent, you know, a
22 logic or explicit definition implicit or explicitly telling you to do it. I would
23 submit that nothing here does that. A lot of the claims use language, like
24 later, after, things like that. The claims that we're looking at do not. And so

1 you don't read an order in. So what that third step tells you, is that by the
2 time you're done, you have to have formed a trench.

3 Now, it can be simultaneous as you build the others. And an example
4 that I've been thinking of in terms of an analogy is you can build a building
5 by building separate, you know, floors of that building. If you wanted to
6 build an alley in a building, right, you can build two buildings next to each
7 other and it results in an alley between the buildings. Now, you did not go
8 back and kind of dig through the building to create the alley. You formed an
9 alley by forming two buildings on either side. This is very similar, right?

10 So you particularly use the screen printing process to put the metal
11 layers down where you have to ensure that you have that. And in fact, that's
12 actually the purpose of Hanamura, right? So Hanamura teaches you that the
13 old process had a problem where the metal layers did overlap, and then you
14 get these short circuits. And so the whole point of Hanamura was actually to
15 screen print in a way that you make sure to have this trench. Because that
16 trench is what separates those particular regions and ensures that you don't
17 have that particular short circuit later. And that's where you build the
18 dielectric for that reason. Or partially for that reason. It's also for the
19 (inaudible) --

20 JUDGE REPKO: So you have three steps claimed in your -- two acts
21 in Hanamura, and you're mapping those two actions to all three steps?

22 MR. FRISCH: Yes. And I believe the Federal Circuit has found that
23 to be proper and has given instances where that's proper as long as the claim
24 doesn't require otherwise. And again, I think if you explicitly look at the
25 claim or the explicit language, the language does not provide a specific

1 order. And implicitly, it doesn't require it. And I think, actually, Hanamura
2 kind of shows you why implicitly it doesn't require it, because you can build
3 a trench by kind of performing those other two steps.

4 JUDGE REPKO: Okay.

5 MR. FRISCH: And I'll jump ahead to -- I think it's the third claim
6 construction that we have, but basically the claim construction we haven't
7 touched yet. And this gets into the first trench being in the layers. And here,
8 I'd submit -- going to Slide 68, that Pictiva's construction relies on an overly
9 narrow reading of the term "in." It's essentially trying to require that you be
10 adjacent to the edges of the electrically conductive materials. And to Slide
11 69, that -- that's just not the plain and ordinary meaning of "in."

12 JUDGE BAER: Well, I understand your point about the word "in."
13 We have more than "in." We have a trench in a layer, and that to me,
14 signifies something different. We're talking about, not just the word "in,"
15 but a trench in a layer. And just looking at your -- for example, Slide 25 has
16 a picture of the trench.

17 MR. FRISCH: Sure.

18 JUDGE BAER: And looking at that, it doesn't look like the trench is
19 in the first electrically conductive layer. How do you want me to read the
20 first electrically conductive layer such that that trench is in the layer, but also
21 such that the second electrically conductive layer is on the first layer?

22 MR. FRISCH: Sure. So if I can tease that out for a second, I think
23 the actual dispute over this is actually with respect to Hanamura, not Ingle.

24 JUDGE BAER: Did I say Ingle? I'm sorry.

25 MR. FRISCH: Oh, no. I'm just -- Slide 25 has Ingle. So --

1 JUDGE BAER: You're right.

2 MR. FRISCH: -- if I redirect this, maybe --

3 JUDGE BAER: It's your Slide 65, not 25.

4 MR. FRISCH: Okay.

5 JUDGE BAER: It's the reply at 25.

6 MR. FRISCH: Thank you. Just want to make sure we're talking
7 about the same figure. Sure. So I think this goes back to that manufacturing
8 process that we were talking about. And this is a great example of it shown
9 on Slide 65. So what you see here on the left, this is the structure they're
10 building. At the top, that kind of -- what's labeled essentially as 22, that's
11 your screen that you're printing through. So where there's a hole, that's kind
12 of where you're putting your layer.

13 So what has essentially happened here -- and I don't have the other
14 image, but I can describe what happens. First, you start out with just that
15 blue substrate. And then you're building what we believe is the first electric
16 conductive electrode layer. That's 13 and 12. And so you put a screen up
17 top, and you put those down just where you want them, right? And you've
18 ended up with a trench -- a larger trench, in fact, between those two to make
19 sure that they're not touching, there's no electrical short.

20 You then come in and you build your second electrically conductive
21 layer. And you actually have to make sure they're on top of one another. To
22 go to part of your question about "on" you have to, because that's going to
23 form the electrodes for each side of this capacitor. So they have to be
24 touching to allow for that current to kind of flow later.

1 You've filled in part of your kind of larger trench as part of that
2 process. But what you have now resulted in is a smaller trench between both
3 layers. You have the trench between the yellow and the green, as they're
4 kind of shown here, to make sure that neither one of these layers touch. If
5 that trench wasn't in the first layer, you'd end up short-circuiting your
6 capacitor and it just wouldn't work.

7 And again, this is actually the entire purpose of Hanamura, is to
8 ensure that that middle portion that's shown there with kind of the vertical
9 lines between the green, that you end up with that trench and that you keep
10 that trench as between all of your metal layers that are on the left side of the
11 image and all of your metal layers that are on the right side of the image.

12 JUDGE QUINN: So I have a question for you. So that may be the
13 purpose of Hanamura, but I'm interested in what is the purpose of the '492
14 Patent? Do you -- do you have any disclosure in the '492 Patent where you
15 have a trench that is described as being in the first and second layer but not
16 actually having a second layer abutting the sides of the trench?

17 MR. FRISCH: I don't think there is a particular figure or embodiment
18 that -- where it doesn't abut the edge of the layers. I'll agree with that. But
19 again, I think this just goes back to what the Fed Circuit has said -- or
20 Federal Circuit has said on a number of occasions, which is that you don't
21 limit your claims to the particular embodiments in the patents even if you
22 only have a single embodiment. And again, the patent here --

23 JUDGE QUINN: No. I understand that. But we have very specific
24 claim language that says first trench in the first and second. So in order to
25 give meaning to that "and" I'm wanting to find out if the '492 Patent

1 disclosure describes that relationship as broad as you are suggesting with the
2 Hanamura prior art.

3 MR. FRISCH: I think it does in the sense that it never describes it
4 more narrowly than its common use other than by providing specific
5 examples. And in fact, the example that we're talking about is -- actually,
6 Pictiva has pointed out, is really claim -- the dependent claim. Claim 9
7 actually talks about making it so that you have those edges aligned with the
8 trench, so that when the insulating material comes down, it touches those
9 edges. But that's just further proof that the Claim 1 is broader than that. As
10 we normally find, obviously, the independent claim has to be broader.

11 Now, I know there are other things as Pictiva points out added in
12 Claim 9, but there's still a presumption -- maybe not as strong as if it's the
13 only limitation, but there's still a presumption that you don't read the
14 limitations of the dependent claim into the independent claim. And I think
15 that's further proof based on the way they drafted those two claims. That
16 "in" should be given its broader meaning as opposed to trying to limit it to
17 exactly how it was shown in a particular figure.

18 JUDGE QUINN: But I -- and I understand that. I don't know that
19 you can use a dependent claim, then -- and that is a rebuttable presumption
20 anyway, and then say that you can then broaden the independent claim to the
21 point that you are reading out certain portions of the claim. So it can't be
22 that broad.

23 MR. FRISCH: I'm not -- I'm -- I apologize. I'm not sure if I followed
24 the last part about reading out a portion of the claim.

1 JUDGE QUINN: Reading out a portion of the claim, like you're
2 asking us to say -- to think that the -- and the second electrically conductive
3 layer doesn't really have to be there in -- evidence of it doesn't have to be
4 there in the trench?

5 MR. FRISCH: I don't believe you're reading it out of the claim. I
6 would respectfully argue that that goes back to this issue, which again is
7 even how their own expert framed it of it's in the second layer to the extent
8 that it's used to separate the layer. It's there to separate the layer to keep it
9 from short-circuiting. That's how the '492 Patent describes it. It's also
10 actually how Ingle describes it and how Hanamura. So I would argue you --
11 you're not reading that out of the claim. You still look for that. And I still
12 believe that's shown in Hanamura by the fact that you lay it down in the
13 structured process specifically to ensure that there is a trench between it.
14 Even if you then fill in part of that trench, you still have a portion of that
15 trench and a final trench remaining between both the first electrode layer and
16 the second electrode layer.

17 JUDGE QUINN: Okay. I understand your position. Thank you.

18 MR. FRISCH: Okay. Thank you.

19 And I'm over my time, so I will save what time I have left for rebuttal.
20 Thank you.

21 JUDGE BAER: Thank you.

22 Mr. Warrick, would you like to reserve any of your time for
23 surrebuttal?

24 MR. WARRICK: Yes, Your Honor. Fifteen minutes, please.

1 JUDGE BAER: I'm putting 45 minutes on the clock, and you may
2 begin whenever you're ready.

3 MR. WARRICK: Thank you, Your Honors. I'd like to, if I may, kind
4 of pick up where Opposing Counsel left off, which is talking about Ground
5 II. This is a ground that can really be resolved on claim construction. And I
6 think it's worth pointing out, for the first term, the layers, Samsung hasn't
7 proposed any construction for layer, which is why I think this has been a
8 little bit of a difficult conversation. But I'll point out they don't seem to
9 dispute in the briefing that a layer has to be material formed on an
10 underlying layer. And Counsel, even today, I think I heard him say, if you
11 have an electrically conductive material, then you have a layer. And one of
12 our points is just the natural consequence of that is if you have a space where
13 there's no material that's not part of your layer, and that's -- wait.

14 That's really -- they're trying to -- what -- the -- two things they
15 dispute. They don't really dispute the construction itself per se, but these
16 natural implications. If you have a gap between, that's not part of the layer.
17 They also don't dispute that, in fact, every disclosed embodiment is
18 consistent with our constructions. And that's true for all three constructions.

19 Now, as to why the '492 Patent would require two layers and why you
20 would have to have a trench that cuts through both of them, here's an
21 example. Claim 11, which is one of the asserted claims, talks about
22 removing a layer. Why do you do that? Because you have your capacitor
23 on the left -- and I'm sorry. This is Slide 9. You have your capacitor on the
24 left. You have your optoelectronic component on the right. And it's
25 important that you still have electrically conductive material in that first

1 layer. But you need to be able to remove a layer. If a layer includes, say,
2 the gaps, like, how do you remove that? How do you remove something
3 that's not material? Also --

4 JUDGE BAER: Mr. Warrick, I understand your point that layers are
5 materials. And I think we're sort of grappling with that a little bit. Is there
6 anything in the patent or in the prior art that gives an indication that in this
7 world, when we're forming chips like this, when I say layer, what I mean is
8 continuous material and not, for example, a space, a vertical space or
9 something like that? Is there anything in the -- yeah. In the record that
10 describes layer as you're suggesting?

11 MR. WARRICK: Well, so I don't know that it has to be continuous,
12 Your Honor. You could have a layer -- for example, you have a trench,
13 though you have layer on either side, it's part of the same layer. I think
14 maybe --

15 JUDGE BAER: But I think you would -- I think you said that the
16 layer is defined by the material such that when you put a trench in a layer,
17 the part that doesn't have material is no longer that layer, or is that not true?

18 MR. WARRICK: I think that's correct, Your Honor. I think it could
19 be in the layer. It's a joint end that's consistent with our proposed
20 construction and defined by the edges. I think to Your Honor's first
21 question, if we look at Slide 12, we have an excerpt from the '492 Patent that
22 describes the first trench. The depth of the first trench corresponds to a
23 common thickness of the two electrically conductive layers, which is to say
24 it's a -- there is a certain thickness implied, at least in the context of the '492
25 Patent. Every description, every figure is consistent. You have two layer --

1 planar layers of a single thickness. And then you either cut a trench through
2 both of them, or you remove one of them in a certain area for an electronic
3 component.

4 We talked -- this came up in Opposing Counsel's argument, but if we
5 look at Slide 14, Dependent Claim 9 does in fact talk about the dielectric
6 being heated and so it will flow into the trench, and it encapsulates the edges
7 and/or side surfaces. What Claim 9 adds is that melting step, that
8 encapsulation step. The fact that those edges are there, that's part of what
9 already exists in Independent Claim 1.

10 JUDGE REPKO: Doesn't these dependent claims lead us to believe
11 that independent claim is broader? I mean, there's some ordering cited in the
12 dependent claims that -- well, you know, Opposing Counsel showed 3, 9, 11,
13 and 12 all talk about before, first, after, and how these are formed. And I
14 think part of their argument is that there's no order in the independent claim,
15 so that certain steps can happen before -- simultaneously. Is -- how should I
16 view these dependent claims, which is like specific order, in regard to Claim
17 1 which does not?

18 MR. WARRICK: Sure. Your Honor, I believe you're referencing the
19 third construction, which is the forming step that we have in Claim 1. And I
20 would say Opposing Counsel has pointed out places where there are words
21 like before or then. And we, as we've shown on Slide 21, have pointed out
22 claim language where the claim specifically contemplates simultaneous
23 performance. I would actually suggest that the argument about ordered
24 performance is actually a little bit of a red herring, because what Petitioner is
25 arguing for is simultaneous performance.

1 And as, I think, Your Honor pointed out earlier, there is a risk of
2 actually rendering the forming steps superfluous if the trench or gap as you
3 have in Hanamura is formed simultaneously with the electrically conductive
4 layers. The case they rely on for simultaneous performance is Moba. But in
5 Moba, the specification specifically described simultaneous performance.
6 And that's simply not the case here.

7 JUDGE REPKO: Thank you.

8 MR. WARRICK: And of course we cite several cases to this effect
9 that the fact is there's also an implication in the claims that you form a first
10 layer. You form a second layer on top of it. You form a trench in the two
11 layers. That, at least, implies ordering.

12 JUDGE REPKO: So with this exposure of the first trench, is that an
13 act of exposing, or is that just the property? Right. It says the substrate is
14 exposed. Is that -- is that an action?

15 MR. WARRICK: I believe it is part and parcel of forming the trench,
16 Your Honor.

17 JUDGE REPKO: It seems like you could read that as a property,
18 though, right? Like you look the trench, trench does this. Is -- how do you
19 read that, right? Like, the forming of the trench, you're saying could be
20 removing. But then it says, "Such that the substrate is exposed." Is that an
21 accurate description?

22 MR. WARRICK: Correct, Your Honor. I mean, I -- so I guess to
23 clarify, it is part of the claim requirement. Forming the first trench, it has to
24 be in both the first and second electrically conductive layers, and it has to cut

1 all the way through them such that the substrate is exposed. Those are all
2 requirements of the trench being formed.

3 JUDGE REPKO: Right. So you just -- I understand you're saying
4 there has to be a first and second conductive layer in order to form
5 something in it. It's a prerequisite, you kind of view it as. But the act of
6 saying, this substrate is exposed in the first trench, it's just the property of
7 the trench. Can I read it like that? Just to say, okay, there's a substrate that's
8 exposed. This doesn't require exposing the substrate in the sense that we're
9 removing material to then create that?

10 MR. WARRICK: I believe I understand, Your Honor. So I think
11 actually I would agree that, yes, because it is part of this third step in Claim
12 1, it is exposing. It's something that was not exposed before. The trench did
13 not exist before. You create the trench by removing the material, which
14 thereby exposes the substrate.

15 And Petitioner here has made another claim differentiation argument.
16 They've said, and we see here -- I don't know if I have it here. They --
17 they've argued, you know, in a dependent claim, you -- there's a claim to
18 laser ablation, and so therefore Claim 1 has to be broader than that. But if,
19 as we show here on Pictiva Slide 25, the specification also contemplates
20 etching. So Claim 1 is broader by virtue of including both etching or laser
21 ablation, both of which would require removal, both of which thereby
22 expose the substrate.

23 JUDGE REPKO: Thank you.

24 JUDGE QUINN: Could I ask you something about this trench
25 limitation? If in Hanamura, you had a continuous layer for the -- or a more

1 continuous layer than the -- for electrodes 13 and 12, the yellow ones -- and
2 I'm looking at your Slide 29. And if you had -- if you had applied those
3 electrodes, just say, in a form is in a very similar fashion as you put the
4 second layer on there, the green layer with the same mask, 22, would you
5 have -- if you -- which in my opinion would result in a trench that does have
6 the two layers stacked on top of each other and a trench in there. But this
7 was formed differently. This was formed using that screen printing on top.
8 Would you agree that it's still a trench, even though it wasn't formed by
9 removing material from that area?

10 MR. WARRICK: So we would not. And just to be clear, we believe
11 Petitioner fails on the forming requirement for multiple reasons. One, that
12 there's not this removal step; it's part of forming. But also because the
13 trench is not in the two first and second electrically conductive layers.

14 JUDGE QUINN: Okay. So you got to have -- you got to have all
15 three. Form the first layer, form the second layer, and then remove
16 something. And that's specific for you to -- for you to contend that it meets
17 the claims?

18 MR. WARRICK: Correct. If we look at our Slide 31, you'll see our
19 argument is that the trench, the alleged trench, it's neither formed in the first
20 and second electrically conductive layers; i.e., you don't remove material to
21 expose the substrate that wasn't exposed before, but also it's not in two
22 layers. And I think we can just see that by virtue of the fact that it's only
23 abutting the green electrodes, 20 and 14, 13 and 12. Those two electrodes
24 are nowhere nearby. And again, this isn't the word "in" in the abstract.

1 This is a trench in a layer. The layer -- I think there's agreement, the
2 layer has to be material, so it just follows that we have to consider that this is
3 a trench. How do you make a trench? How do you form a trench in material
4 layers? Well, you cut through them such that the sides or the edges of those
5 layers define the trench.

6 JUDGE QUINN: Okay. That makes sense. I want to also ask you,
7 the way I'm reading the claim and trying to follow through the arguments
8 made today, the first two formings, the forming of the first and the forming
9 of the second conductive layers, they don't require any kind of structured
10 application, correct?

11 MR. WARRICK: That's correct in the '492 Patent, Your Honor. In
12 fact, the examples given in the '492 Patent consist of planar application with
13 subsequent structuring.

14 JUDGE QUINN: Okay. So the only two structures here that are need
15 to be applied in a structured fashion are the dielectric and the electrode that
16 is on top of the dielectric; is that right?

17 MR. WARRICK: That's correct. The '492 Patent also talks about a
18 protective layer, but that relates to claims that are not at issue here.

19 JUDGE QUINN: Okay. Thank you. I mean, I don't -- I'm now
20 appreciating that one of the problems here is that Hanamura has a structured
21 application for the first two layers that we're discussing here today, so that
22 was useful. Thank you.

23 MR. WARRICK: So in terms of -- I think, unless Your Honors have
24 any further questions, that really resolves Ground II for us. It really is a
25 matter of claim construction. The only argument that was made under our

1 proposed constructions was that some of those -- some of the electrodes
2 overlap. But again, that doesn't resolve the questions of the electrodes of the
3 layers of the appropriate places defining the trench or the forming limitation.

4 Very briefly, I'd like to address Ground III regarding Egitto. Here,
5 we're talking about a resistor design. I just want to point out the petition
6 basically said, you need to have a design. There's a particular design that's
7 claimed in Claims 3 and 5 of the '492 Patent. It would've just been a design
8 choice.

9 And then when we challenged that, in reply, Petitioner came back and
10 said, well, Egitto only has two resistor patterns, and effectively implying you
11 just have to choose one or the other. But Samsung's expert, as we see on
12 Slide 35 -- and apologies, before, I was looking at Slide 34. But Slide 35,
13 we have Samsung's expert conceding that there are, quote, "Many, many
14 ways that one could design the geometry of a resistor."

15 The only other point I'd like to make about this is, in the reply, there's
16 a suggestion that we are contradicting a finding of the District Court. But if
17 you look at Exhibit 2007, you'll see that's not the case. There was a
18 statement by the District Court about Samsung arguing that all taper designs
19 of a certain type would infringe the claim. The Court notes that Pictiva did
20 not dispute it, which is different from agreeing of course. And then the
21 Court went on to construe the claim just as plain and ordinary meaning.

22 Unless Your Honors have any questions about Ground III, I -- I'd like
23 to turn to Ground I.

24 JUDGE BAER: Mr. Warrick, one more question about the second
25 ground that I'd like to follow up with one of Judge Quinn's questions. The

1 last limitation there that has applying an electrically conductive -- excuse
2 me, an electrically conductive electrode layer in a structured fashion, does
3 that refer -- that layer, which is an electrically conductive electrode layer, is
4 that one solid piece of material, or is that a repeating piece of material with
5 gaps between it? Is my question clear?

6 MR. WARRICK: I -- I'm not sure, Your Honor. In the '492 Patent,
7 you're asking --

8 JUDGE BAER: The '492 Patent.

9 MR. WARRICK: -- about the second electrically conductive layer, or
10 you're asking the separate electrode, which is applied over the dielectric in
11 the '492 Patent?

12 JUDGE BAER: I'm asking about the last limitation. The electrode
13 that's applied in a structured fashion?

14 MR. WARRICK: Okay. So for that, yes, that structured application,
15 yes. Your Honor, that is -- there are certainly -- the layer, to the extent it is
16 even considered one layer, you have separate cathodes. That's separate
17 pieces of material that are applied selectively to form the cathodes.
18 Certainly, there are gaps between that material -- and whether you view
19 those as one layer or separate layers, that is the idea of the structure; you
20 know, applying the electrode in a structured fashion, as the claims say.

21 JUDGE BAER: But I guess what I'm struggling with, if you apply
22 something in a structured fashion to form a layer, right? And in a structured
23 fashion means we're not going to do just a solid layer. We're just going to
24 do a piece. How does that not imply that a layer can include something that
25 is not the material between two pieces?

1 MR. WARRICK: Respectfully, Your Honor, I disagree. As we've
2 said before, that the layer may not be continuous. You could have two
3 pieces of material that you would expect them to be parallel to each other,
4 that form the layer without the gap between being part of the layer. The
5 layer -- and I think there's agreement on this point. The layer has to be
6 electrically conductive material. Air or a gap between them, you know,
7 generally is not -- or at least generally not considered to be conductive. But
8 just to be clear, we don't argue, Your Honor, that a layer has to be
9 continuous.

10 JUDGE BAER: But you're arguing that a layer has to be -- I guess I
11 don't understand the difference between a layer being continuous and a layer
12 needing to be material. So we're talking about, I guess, a layer of
13 electrically -- I'm trying to think of how to articulate this. What is the
14 difference between a layer needing to be continuous and a layer needing to
15 be solid material? In other words, why doesn't -- in Petitioner's figure, why
16 doesn't 11 -- excuse me, 13 and 12, the alleged first electrically conductive
17 layer, why does that not extend between the two yellow portions? And I
18 thought your answer was because there's no yellow material there, but now
19 I'm hearing something a little different.

20 Could you just clarify that for me?

21 MR. WARRICK: Certainly. So if we look at, for example, our Slide
22 29, which has the figure 4 from Hanamura, we don't dispute that, for
23 example, electrodes 13 and 12 could collectively be a layer -- first
24 electrically conductive layer formed on the substrate, but that the space
25 between them is not part of the layer. And I think if you look at our Slide 9,

1 you'll see why this is consistent with the '492 Patent because this goes back
2 to the point about removing a layer.

3 If you can see here, the second electrically conductive layer, 14, part
4 of it is on the right and part of it is on the left of the optoelectronic
5 component of the active stack. And how is that possible? It's -- well, it's
6 because, as Claim 11 says, the second electrically conductive layer is
7 removed in that region. So the layer no longer takes up that space. It still
8 consists of the part of 14 on the right and the left. But the layer itself, it
9 doesn't say removing material of the layer, it says, removing the layer.

10 JUDGE BAER: So is it your position that that counts as one layer,
11 even though there's space in between, because at one point it was
12 continuous, and it was removed? Is that your position?

13 MR. WARRICK: No. I -- it -- we -- just to be clear, we do not argue
14 that a layer has to be continuous.

15 JUDGE BAER: I guess I'm not following the difference between a
16 layer needing to be continuous and a layer -- the argument that 13 and 12,
17 that trench is not in the first electrical conductive layer because it's in the
18 space between them.

19 Can you help me understand that?

20 MR. WARRICK: Well, to be clear, the trench -- to have a trench in a
21 layer, it has to be defined within two layers for that matter. Means that the
22 trench is defined by the edges of those layers. You have cut through them,
23 and the sides of those layers, both of them define the trench. And so that, I
24 think, is really our argument there. It's not that a layer has to be continuous
25 at any point in time. You can have a layer -- and in fact, it is implicit in the

1 idea of being able to apply a layer in a structured fashion, as the claims say,
2 that you could apply material only where you want it.

3 JUDGE BAER: And it would still be one layer, even though there's a
4 gap between it; is that correct?

5 MR. WARRICK: Correct. It would be one layer, but the gaps
6 between the material are not part of the layer. That is our position, Your
7 Honor.

8 JUDGE REPKO: It's not planar. You could have a non-planar layer.
9 We have a part of it here and part of it here, and that's a layer?

10 MR. WARRICK: Well, that's very much what is being argued by
11 Petitioner, Your Honor, by saying that you have -- according to them, that
12 the electrodes that slightly overlap and are somewhat in parallel are different
13 layers. Here the problem is that we have a first layer that has to be on the
14 substrate and a second layer that has to in turn be on the first layer so that
15 there -- we have a separate problem with that.

16 JUDGE REPKO: Okay. So I just want to be clear. So you could
17 have a discontinuous layer. A layer over here, a part of it over here. Two
18 regions that are separated. But you can't -- if I take one of the parts, and I
19 move it, displace it in some way, that's not a layer?

20 MR. WARRICK: With the '492 Patent doesn't speak to that situation,
21 so I'd be hesitant to speculate about that. It's not a position that was taken in
22 the briefing. It seems like theoretically, that it's potentially possible. I don't
23 think that would be inconsistent with what we've argued, but that's not the
24 situation presented in Hanamura or in the '492 Patent.

1 JUDGE REPKO: Well, in the figure you have a green part that kind
2 of goes up here, and then it's connected, right? Would that be a -- the green
3 part, see how it's, like -- there's -- it's kind of discontinuous. There's parts
4 that are offset --

5 MR. WARRICK: Uh-huh.

6 JUDGE REPKO: -- you know, from different levels. Is that -- it's
7 also another way?

8 MR. WARRICK: Well, the green -- we say, even here in our Slide
9 29, at least the portions of electrodes 20 and 14 that are on electrodes 13 and
10 12 could at those locations be considered a layer on the first layer. The
11 problem is not just the word layer. It's the fact that the second layer has to
12 be on the first layer.

13 JUDGE REPKO: Of the material?

14 MR. WARRICK: The material, correct. Yes. So -- and --

15 JUDGE REPKO: And the layer is defined by the material, not
16 necessarily by the geometry?

17 MR. WARRICK: I think that's fair. I think at minimum, there's not a
18 dispute that a layer has to consist of electrically conductive material.
19 Otherwise, you're reading those words out of the claim.

20 JUDGE REPKO: Okay. And then so, like, conceptually, it doesn't
21 encompass any vacant spaces. So when you're talking about the layer,
22 there's no -- there's a trench there, right? That's not part of that layer. The
23 absence of the material is not part of that layer, right?

24 MR. WARRICK: Correct, Your Honor. Just as the claims described
25 removing portions of a layer to make room for the optoelectronic

1 component, you also remove portions of the layer to make a trench, which is
2 in turn defined by the edges of the layer that remain.

3 JUDGE REPKO: Thank you. I understand.

4 MR. WARRICK: If I may, I would like to turn to Ground I, which is
5 Ingle and Hasei. And just a couple of points right up front talking about
6 Ingle. There was a lot of discussion earlier about what Ingle discloses in
7 terms of a capacitor, where you would put it, what it might look like. First,
8 Ingle discloses a base. It's a similar base. It's not the same base. We do
9 have these very rounded dielectrics, for example, 9 in figure 1I, which is on
10 our Slide 39. And Samsung's expert admitted, this is at his transcript,
11 Exhibit 2006, 101, Lines 2 to 12, that Ingle discloses a particular shape. It is
12 this rounded shape for the dielectric.

13 Now, in terms of where you would put a cathode -- I believe I heard
14 Counsel earlier refer to a trench 7, which was in figure 1D. It's described on
15 the top of Page 20 of Ingle. Well, if we look here, that's actually where
16 dielectric 9 is, which is where Petitioner later asserts that you would put the
17 optoelectronic component, not the capacitor. But in any event, if we look at
18 Slide 40, you'll see Samsung's expert conceded Ingle does not teach a
19 specific location for a cathode layer, nor does it disclose any particular
20 shape.

21 For that reason, Petitioner relies on Hasei. Our Slide 41, we have an
22 annotated version of figure 3. There is a layer that is not structured. I'm
23 happy to talk about this more. It is a continuous layer, regardless of how it
24 was applied. There's also -- and this is Slide 42. There's no dispute that

1 Hasei does not describe fabricating a capacitor. There's no discussion of a
2 capacitor.

3 Hasei also describes photolithography as the conventional method.
4 This is on Slide 43. That is consistent with Ingle, which also describes
5 photolithography as the conventional method, which is ironic because in the
6 petition, one of the reasons to combine the references that's provided is
7 because you would need to look to Hasei for the conventional method of
8 structuring -- of forming an OLED component, including the cathode. And
9 we have that here on Slide 45.

10 And just to make a brief point on Slide 47, this modified figure 1I
11 from Ingle is featured throughout the petition, the reply. We have cited it in
12 our papers as well, but just to be absolutely clear, the two darker purple
13 regions, the purported cathodes to form the capacitor on the left and the
14 optoelectronic component on the right, those are purely, A, imaginary.
15 They're speculative. It's conjecture. They were added by annotation by Dr.
16 Kattamis, Samsung's expert. And I just want to make the point that they
17 chose to frame their Ground in terms of this particular base figure shown in
18 figure 1I of Ingle. And they chose to apply the cathodes as they did, and we
19 can talk about the amount of overlap and the shape and the challenges those
20 present. That was all part of the theory as chosen by Petitioners.

21 Slide 48, just a couple of points. Samsung's expert admitted that there
22 is no disclosure in Ingle of applying a cathode layer in a structured fashion.
23 They have to look to Hasei for that. And also, even though Ingle talks about
24 using structured techniques for certain layers, there's no -- excuse me, no

1 disclosure of using structured techniques for every layer. And in fact, there's
2 no disclosure of how you would form the cathode at all.

3 And from that, it flows -- this is on Slide 49, that the only evidence of
4 applying a structured cathode in a structured fashion is Hasei. There was
5 some discussion later on in the transcript where Dr. Kattamis backtracked
6 somewhat and said, well, I think I knew that maybe I did this, or I knew
7 some people who did this. But we have the quote here from his deposition;
8 he does not have a publication that would show that.

9 Now, going back to Hasei again, there is disclosure in Hasei. In
10 Paragraph 37, we have it here on Slide 50 that you could use this droplet
11 discharge method to form electrode 50, which they are using to suggest,
12 inappropriately, we think, the application of a cathode in a structured fashion
13 on top of Ingle's base. But regardless of whether you use that method or a
14 different method, there's simply no structuring. The two options are you
15 either apply the material where you want it to create the structure -- and this
16 would be the gaps that Your Honors have referred to, or you apply it across
17 the entire device, and then you use etching or laser ablation or some other
18 removal process to create the structure. Here there's no structure at all, and
19 our expert explains that. It's on Slide 51.

20 And Samsung's expert, Slide 52, admitted that if you use the droplet
21 discharge method to apply a layer, and it's continuous, it would not be
22 structured. Samsung's expert, Slide 53, also agreed that, in figure 3 of Hasei,
23 that negative electrode 50 is continuous.

24 So what does Petitioner do? Well, in reply, Petitioner does a couple
25 things that we feel are improper. One, they say, well, Hasei's teaching of

1 this droplet discharge method would've become conventional by the time the
2 '492 Patent came around. They also say, well, even if there's not an express
3 disclosure of a structured layer electrode 50, well, the -- you know, there
4 could be additional parts of the structure that aren't shown in the figure or
5 aren't described expressly in the text.

6 And we would say to that, one -- well, overarching, really, it's really
7 one point. The burden never shifts back to the patent owner. And
8 effectively I think that's what Petitioner has done here. They're saying, well,
9 it could have been conventional. It could have been structured. You could
10 have done this in a different way. Rather than showing that the references
11 teach and would've motivated a person of ordinary skill in the art to do so.

12 And again, just to point out, this is on Slide 58, notwithstanding the
13 backtracking later to which Dr. Kattamis admitted he had no documentation.
14 He did testify clearly that he was not personally aware of anyone having
15 fabricated a device in the claimed manner prior to the '492 Patent. He only
16 relies on Hasei, and as we pointed out, Hasei doesn't have structure.

17 So a second problem is where the cathode is placed. So Slide 60,
18 again, Samsung's expert agrees; no disclosure of location or particular shape
19 for a cathode. And in fact, I directly asked Samsung's expert is whether
20 Ingle discloses applying a cathode over the first contact region?

21 He said, no.

22 JUDGE BAER: But I think Petitioner's point is that Ingle says it's a
23 capacitor. And you raise the point that, well, if we take Ingle at its face and
24 put a cathode up there, that's a non-working capacitor. And so my question
25 is, doesn't that cut in Petitioner's favor? Because aren't we going to assume

1 that Ingle is disclosing a working capacitor such that, if it's not possible
2 really to make a working capacitor with that picture, then that picture must
3 not be the only disclosure or an accurate disclosure?

4 Do you have a response to that?

5 MR. WARRICK: Yes, Your Honor. So first of all, Ingle doesn't
6 teach a capacitor. What it teaches is a base layer to which it says you could
7 form any number of electronic components. And for example, it says you
8 could form an OLED using a conventional process.

9 JUDGE BAER: But it does say you could form a capacitor as one of
10 the electronic components, and it says you could put that electronic
11 component in the gap 7. So, you know, assuming that Ingle's not wrong,
12 how can this not produce a working capacitor, and yet Ingle says you can put
13 a capacitor or you can create -- I'm trying to find the words here, an
14 electrical component including a capacitor in gap 7 with the disclosed
15 structure?

16 MR. WARRICK: Right. So, Your Honor, just to be clear again, Ingle
17 doesn't teach the POSITA to build a capacitor in any particular location.
18 The quote on the top of Page 20 of Ingle that Counsel referenced earlier, if
19 you look at it, talks about an electronic component. It's not specific to a
20 capacitor, and --

21 JUDGE BAER: Well, but it does say the separation area 7 represents
22 the electrical insulation between the cathode and the anode of the electrical
23 component. So I understood that to mean that the electrical component
24 occupies gap 7. Now, if that electrical component is to be a capacitor, and to
25 your point, for a capacitor to work, you've got to have some overlap. How

1 do I square those two things? That this is really what Ingle means; the
2 dielectric, the shape of dielectric, is really what Ingle means. And yet Ingle
3 says, you can have a capacitor in there.

4 And you're saying, well, that wouldn't work?

5 MR. WARRICK: Well, I think there are many ways that a POSITA
6 could potentially form a capacitor on this base structure. One, just
7 hypothetically, would be in between -- I'm showing now, this is our Slide 61.
8 It's the modified figure 1I from Ingle. You have the pink dielectric. And
9 what do you have? You have first and second electrically conductive layers
10 on the left. Also on the right, you have dielectric in between. That itself, if
11 you had sufficient depth of those layers, could be a capacitor. You have --

12 JUDGE BAER: Can you just make that point again and tell me
13 exactly where that -- we're looking at Slide 71? Where are you saying that
14 could be a capacitor?

15 MR. WARRICK: Yes, Your Honor. So Slide 61, just for clarity.

16 JUDGE BAER: Thank you.

17 MR. WARRICK: It's the modified figure 1I from Ingle. And we
18 have a trench on the left, and that trench is in a green and red layer. There's
19 green and red material on both sides. Those are the first and second
20 electrically conductive layers. And so what are those? Those are contact
21 regions, one on the left, one on the right. They are electrically separated
22 from each other, and you have pink dielectric in between them.

23 My point being, what do we have there? Well, we have opposing
24 electrically conductive layers. The two contact regions are facing each other
25 on either side of the trench with a dielectric in between. If you had

1 sufficient depth of the trench, if those materials are sufficiently -- and this
2 would all be a matter of, like, how deep they are and how far apart they are,
3 you could conceivably form a capacitor without adding a cathode. Ingle
4 doesn't tell you to add a cathode. The reason we're talking about adding a
5 cathode is because that's what the '492 Patent tells you to do. It's really
6 hindsight.

7 JUDGE BAER: So your point is that, just because it says at -- the
8 electronic component can be a capacitor, that doesn't necessarily imply or
9 mean a cathode; is that correct?

10 MR. WARRICK: Correct.

11 JUDGE BAER: And is there any testimony on this point? Anything
12 in the record on this point?

13 MR. WARRICK: About forming a capacitor without a cathode?

14 JUDGE BAER: Correct. That the capacitor need not be with the
15 cathode formed above the dielectric? And it's fine if you want to look and
16 respond.

17 MR. WARRICK: I don't believe -- I -- I'm sorry. I didn't mean to
18 interrupt.

19 JUDGE BAER: Go ahead, please.

20 MR. WARRICK: I don't believe we did, because this is not -- it's not
21 our burden to show how a capacitor could be formed. However, I could
22 refer Your Honors to some discussion that was had during the deposition of
23 Samsung's expert.

24 This is on our Slide 66. And in fact, I raised this question with him.
25 So this is on Slide 66. Look at Figure 1I, the electrically conductive layers

1 on either side of the dielectric. Why does that combination not form a
2 capacitor?

3 And his answer is that it's a scaling issue. He said, "Well, those would
4 be very thin, you would" -- and this is the highlighted part -- "So you would
5 have a very, very tiny surface area for a capacitor. So I wouldn't consider it
6 a capacitor, nor would it be something you could easily tailor to adjust
7 capacitance."

8 So that actually is -- so in his view, it's a scaling issue. Which is
9 ironic, because they tell us the drawings aren't to scale. That's what's been
10 argued today. And our point is the overlap that allegedly exists of this
11 imaginary cathode over the first contact layer is even smaller. Even if we
12 just assume these aren't to scale, it's even smaller than those first and second
13 electrically conductive layers.

14 But more importantly, the reason you wouldn't have a working
15 component is the petitioner's theory, is that -- well, first of all, they have the
16 drawing. They chose that. Then the only adjustment contemplated was
17 extending the dielectric and the cathode further to have greater overlap.

18 JUDGE BAER: And I understand you're saying that that's their
19 construct, but what I'm struggling with is that Ingle itself says a capacitor.
20 And I'm going to assume that's going to be a working capacitor.

21 I take your point that this just isn't going to work the way -- unless
22 you have significant overlap. So what I want to know is why is that
23 description of a capacitor -- and assume that means a working capacitor, not
24 read on your claims that require the overlap?

1 MR. WARRICK: Well, because, Your Honor, our claims require
2 very specific structure and formation of structure, you know, method of
3 forming the structure for a -- and technically, a passive electronic
4 component.

5 And that is that you have the two electrically conductive layers. You
6 form a trench. You add the dielectric, and then you -- in a structured
7 fashion. And then also in a structured fashion, you apply a cathode over the
8 dielectric, also over the first contact region and touching the second contact
9 region. All of that has to be met.

10 And none of that -- I shouldn't say none of that, but the -- certainly the
11 structured application of a cathode is not disclosed in Ingle. No location or
12 shape of a cathode is disclosed in Ingle.

13 And the things that are disclosed in Ingle are problematic. What I was
14 saying before is the petition suggested you could just extend the cathode
15 layer, but that would be problematic because then you could potentially have
16 a short between the cathode and the first contact region.

17 They also say, well, it's a scale issue. This is the primary argument
18 and reply. It's about scale. Drawings aren't to scale. You just make
19 everything bigger, you'd have more overlap.

20 And here's where we get to the problem of the shape. The -- you still
21 have this rounded shape -- and let me just find the right slide. Here we go.

22 So Slide 71, we have our expert, Dr. Pattison, explaining why the
23 shape, round, with a steeply curved shape, would be problematic. Even if it
24 was larger, you would have a very inconsistent distance between the --
25 effectively, the anode and the cathode.

1 That creates problems that could render a capacitor inoperable. And
2 this is something that Samsung's expert agreed. This is Slide 72. You
3 would not have a uniform distance. So what is -- I don't know what
4 happened with Slide 74, but the theory and the reply is actually inconsistent
5 with Dr. Kattamis' testimony.

6 JUDGE BAER: I should mention we have your Slide 74, and we've
7 got text in there. So if you've got it --

8 MR. WARRICK: I apologize. I'm glad you have it. It was in the
9 PDF.

10 So on Slide 74, I'm just pointing out that despite the text on the right,
11 which is from the reply -- or actually, I think that's actually -- I apologize.
12 That's actually from Dr. Kattamis' reply declaration talking about a POSITA
13 being able to form the dielectric in different shapes.

14 Earlier at his deposition -- this is on the left of Slide 74, he agreed that
15 Ingle does disclose a particular shape for the dielectric. So there's been a
16 fundamental shift in the theories between the petition and the reply. That is
17 also true, by the way, of the point about needing to etch over an OLED and
18 how that could be damaging.

19 The reply does cite back to Paragraph 91 of Dr. Kattamis' opening
20 declaration. But notably, that was not cited in the petition.

21 There's no discussion in the petition of the harms of etching over an
22 OLED. And again, if it was so commonplace, how is it that Dr. Kattamis
23 was aware of no one having performed that process before?

24 Unless Your Honors have any further questions, at this point, I will
25 reserve my time for rebuttal.

1 JUDGE BAER: Thank you.

2 MR. FRISCH: If I can just have one moment, Your Honor, to gather
3 my materials?

4 JUDGE BAER: Take your time.

5 MR. FRISCH: Ready when you are, Your Honor.

6 Okay. Just to start maybe going in reverse, at least for the beginning
7 here, we just talked about for a moment, the shape of the capacitor and the
8 idea about this dielectric being rounded and in terms of what their experts
9 said about it.

10 And we deposed their expert on this very issue, Dr. Pattison. And we
11 asked him about this supposed irregular distance that they have created here
12 to say why the capacitor doesn't work. And whether that irregular distance
13 would be present in exactly what the '492 Patent shows.

14 And he agreed that it was. He claimed that there was a difference in
15 how much of that irregular distance.

16 But again, the '492 Patent also has a rounded dielectric. He calls it a
17 rounded dielectric. It doesn't say anything about that being an issue with
18 respect to the capacitor. It doesn't describe any novel feature of the shape of
19 that dielectric in order to make that capacitor work.

20 It was known at the time -- and I think that's because it was known at
21 the time, by persons of ordinary skill in the art, how to build a capacitor.
22 There's nothing about the claims, the specification or otherwise, that
23 explains that for some reason, rounding is bad, or that you can only have a
24 certain degree of rounding.

1 JUDGE BAER: I take your point, but the claim is very specific about
2 how that capacitor is formed. Now, I get that it doesn't say a capacitor, but
3 the extent that you need it to be a capacitor, which you do, it is very
4 particular and it's not enough to just say, well, people knew how to form
5 capacitors.

6 And Ingle says a capacitor, I take your point there, but you need
7 something very, very particular, and you need a capacitor formed a
8 particular way, with the cathode overlapping that first area. And I'm a little
9 bit troubled with what the prior art discloses.

10 So can you articulate for me or show me where in the petition or in
11 your expert -- in your expert report, the best articulation of where the
12 reference teaches -- by teaching a capacitor, by teaching a working
13 capacitor, right, where the reference teaches all these things put together?

14 MR. FRISCH: Where in particular Ingle teaches all of those things
15 put together? I just want to make sure I'm --

16 JUDGE BAER: Either where Ingle teaches it all together in one
17 embodiment, or where Ingle teaches these things separately, and along with
18 the Hasei reference, and where you provided rationale for putting those
19 things together in the way you want.

20 MR. FRISCH: So going back to what we talked about earlier, we
21 would agree Ingle doesn't disclose all of them in one embodiment. We don't
22 have an anticipation around this is an obviousness combination. So --

23 JUDGE BAER: But I thought the only thing you were borrowing
24 from Hasei was the structured deposition. So put aside the structured
25 deposition, you still need a cathode overlapping the area.

1 Where does Ingle teach that?

2 MR. FRISCH: I think that's inherent to the fact that you're building a
3 capacitor. I think plus, the disclosure that we looked at earlier of where you
4 built the capacitor. And I do want to clarify, there was some discussion
5 about we build our OLED at the trench.

6 I don't think that's actually true. There's a separate area next to the
7 trench exactly where Ingle tells you to build it, that you build the OLED
8 stack. So I just wanted to clarify that. But it's Ingle telling you to build the
9 electronic component as you were discussing, with Counsel for Pictiva at
10 that particular spot. That is where it's telling you to build any electronic
11 component, one of which is a capacitor.

12 And that's where you get two of your components of the capacitor.
13 It's just known in the art, by persons who are very skilled in the art, that a
14 capacitor is three components. I don't think they dispute that. I didn't hear
15 anything to the contrary. And so you would know from that that you need
16 the third piece, you need the cathode.

17 JUDGE BAER: So simply by saying a capacitor, that gets you sort of
18 the entirety of the limitation in question, other than the structured
19 application; is that correct?

20 MR. FRISCH: It gets you all of the components of the capacitor. In
21 terms of meeting the specific limitations of the claim, I do think those are
22 already in Ingle, other than the structured application. That part is coming
23 from Hasei.

1 JUDGE BAER: So when it says capacitor, you're saying -- when I see
2 capacitor, I can read into that, that that cathode is over the first area as
3 claimed; is that correct?

4 MR. FRISCH: I think so, Your Honor, in the sense that it is
5 specifically telling you that you're building it at that trench, that that trench
6 already has the region that you're talking about it being over is the first
7 electrode. It already has the insulation and then it's well known that in order
8 to have a capacitor, you can't have a capacitor absent overlap.

9 I mean, that is how you build a capacitor. So it tells you that you have
10 to build the second part of that capacitor on top of that particular dielectric.
11 And what you result in is the particular structure. And I don't think that
12 should really be a surprise, in the sense that this isn't some random prior
13 reference we're looking at.

14 This is the '492 inventor's previous discussion. He was already
15 putting out there to the public the basic elements of what are in the '492.

16 JUDGE BAER: So I guess I'm confused why that matters. Because
17 isn't the question of whether a -- how a person of skill in the art would read
18 this, not how the author would read it?

19 MR. FRISCH: Yes. But what I'm saying is it shouldn't be a surprise
20 that the way Ingle describes building the base structure and then describes
21 what components will be on it, that it would lead to the same result as what
22 is in the '492 Patent, because this is the inventor's prior work.

23 JUDGE BAER: And I just want to make sure I'm not missing
24 something. Where is it in your petition or the expert report where you
25 articulated this very point, that by disclosing a capacitor, that gets us sort of

1 everything we need? Because a lot of your rationale has to do with building
2 the OLED, not with the capacitor.

3 If you need a minute for that, we can come back to that.

4 MR. FRISCH: Yes. We'll come back to it. I'm having someone
5 hopefully help me out.

6 JUDGE BAER: Sure.

7 MR. FRISCH: But they -- I do believe our expert declaration goes
8 into detail about how you build a capacitor, what the components of the
9 capacitor --

10 JUDGE BAER: This is around Paragraph 160-ish, I think, is the
11 discussion you're talking about?

12 MR. FRISCH: I believe that's correct, but I'm --

13 JUDGE BAER: We can come back.

14 MR. FRISCH: -- I can check. Yeah. Just on another point on this,
15 there was some discussion about, you know, you could build a capacitor
16 anyway, in Ingle. You could just look at the trench and you could say, well,
17 the left side is the electrode, and the right side is the other electrode, and the
18 insulation in between.

19 I would submit that that's actually directly contradictory to the other
20 arguments you heard from Pictiva. Pictiva specifically told you a number of
21 times that Ingle doesn't tell you how to complete the capacitor, and yet the
22 hypothetical they gave you was a completed capacitor all there already. One
23 first electrode, one second electrode with the insulator.

1 They were saying all the components are there, which goes directly
2 against everything else they told you about the fact that it was unfinished,
3 and you'd have to add something to it, which is what our petitioner did.

4 And by the way, I will just note we're looking for that cite, but the
5 expert declaration also explains why you build this in the way you do, in the
6 sense that you have a structured cathode, that you're already building it aside
7 for the OLED.

8 And so naturally, it makes sense to build the cathode in that same
9 structured fashion because you're building them out of the same metal layer,
10 in the same manufacturing process. That saves you steps. That saves you
11 risk of potentially any short circuit and other types of things.

12 And so it just makes sense -- and as we went over earlier, you
13 wouldn't do it in a planar sense, because if you put it down in a planar layer,
14 you're going to end up shorting your particular device.

15 And in terms of the cite, Your Honor, I would direct you to essentially
16 Pages 18 through 26 of the petition, but in particular, 18 through 21 of the
17 petition that goes through the rationale for this particular combination.

18 JUDGE QUINN: So if I can ask you a question? I'm intrigued by the
19 sentences in Ingle, Page 20, Lines 1 through 7. I think you have relied on
20 this sentence as well, that the 1S states, that the separation area 7 represents
21 the subsequent electrical insulation between the cathode and the anode.

22 I heard Patent Owner's Counsel refer to this explanation as disclosing
23 that the capacitor is already formed and that your cathode and anode there
24 are basically the plate. So the capacitor, what -- why is that not a reasonable
25 reading of this sentence?

1 MR. WARRICK: So first, I would point out it is in conflict with
2 everything else they had said in terms of the cathode not being formed, but
3 the particular slide that they pointed you to with our expert's deposition
4 testimony -- and I don't have the particular slide number, but there was a
5 discussion about this question having come up in our expert's deposition.

6 And actually, if you go back to that particular slide, our expert
7 explained -- I believe it was an unhighlighted text, that you wouldn't expect
8 to build a capacitor that way. And that actually goes to vertical scale versus
9 horizontal scale.

10 When you build in semiconductor manufacturing using layers, these
11 are very thin layers. And so if you build one layer on top of another, you
12 wouldn't expect to have enough thickness essentially to form plates. And
13 this is actually what counsel for Pictiva told you, about the fact that you'd
14 have to make it much larger.

15 Our expert explained that that's not something you would do in a
16 vertical scale, when you're doing semiconductor manufacturing. The
17 horizontal scale is actually different because you're building along a wafer.
18 So you have more room to build essentially laterally, than you do vertically,
19 because you're going to end up with the same amount of space laterally no
20 matter what when you kind of cut these dies. But vertically, you don't want
21 the device to be too thick.

22 So our expert discussed that and actually, pointed out in the testimony
23 on their own slide, why you wouldn't expect that to be a capacitor, which is
24 one of the reasons you think you would have to add a cathode, as opposed to
25 leaving the particular trench as is.

1 JUDGE QUINN: On what slide is that testimony at?

2 MR. FRISCH: Let me find it, Your Honor. I believe that's Pictiva
3 Slide 66, and that's our expert being asked a question about this.

4 And he's saying, "So you'd have a very, very tiny surface area for any
5 capacitor. So I wouldn't consider it a capacitor, nor would it be something
6 you could easily tailor to adjust capacitance."

7 He's explaining this concept.

8 JUDGE QUINN: Thank you.

9 MR. FRISCH: There was some discussion about Hasei's droplet
10 discharge. And as we showed earlier, we believe Hasei is actually quite
11 explicit that it's using droplet discharge in order to do a structured
12 application.

13 There was some discussion about how they said, well, you could use
14 droplet discharge, even though it's printing to actually print an entire planar
15 layer. And they said, you know, our expert acknowledged that you can do as
16 much.

17 Our expert also explained the fact that you wouldn't do that. I mean,
18 sure, you could try to print the entirety of something. But that's like taking a
19 piece of white paper and trying to print every dot of that white paper until
20 the paper is black. You would just start with black paper. You wouldn't use
21 a printing process to print an entire piece of paper until it is black.

22 And -- or Hasei, excuse me, is specifically talking about using a
23 structured application process for the same reason as the '492 Patent to avoid
24 all those steps of planar application and etching. That's the entire point of
25 the slide. So to then read that out in terms of just looking at one figure and

1 saying, even though it discusses a structured application process, that
2 somehow they didn't mean structured application and they meant you could
3 do it in a planar fashion, I think just goes against the teachings of Hasei.

4 There was a couple questions early on about whether reading the
5 claim steps to be able to happen simultaneously makes them superfluous. In
6 terms of the forming of the trench, I don't think they do. That third step
7 requires you to ultimately have a trench.

8 So you could perform those first two steps and not end up with a
9 trench, or you could perform those first two steps and end up with a trench,
10 which is why it's not superfluous to have a third step.

11 There was also some discussion about forming -- and in particular,
12 again, forming, the word "forming" doesn't require removal. And as one of
13 Your Honors pointed out, the claim then uses the same term, forming, for
14 other particular limitations; forming the first layer, forming the second layer.

15 Pictiva's not arguing that you then have to remove during those steps.
16 So we apparently need to read forming in the same claim to have a different
17 meaning, depending on which step it's on. So they're saying, well, you can
18 read it broadly for the first two steps, but you should read the same term
19 differently for that third step. I don't think that's proper.

20 There was some discussion about Egitto, so I'd just like to touch that
21 momentarily. And I think Pictiva's Counsel said that in the petition we just
22 described that as merely a design choice. I think that actually ignores the
23 rest of the petition.

24 While the petition did say that choosing these was merely a design
25 choice, I think the very next part of that exact sentence, which I don't believe

1 was on the slide, talks about how it is not merely a design choice, but it can
2 also be the application of a known technique to a known structure. And then
3 it goes through why that application is particularly proper.

4 There was also some discussion about what came up in the district
5 court. To the extent that our paper was inconsistent with what I'm about to
6 say, that was a mistake on our part. But the point we were trying to make
7 there is that in the district court, in the claim construction order, the Court
8 specifically found that Samsung had argued that because all possible taper
9 directions would satisfy the disputed phrase, the limitation is superfluous,
10 and therefore invalid.

11 And what the Court found was Pictiva does not dispute -- or well, the
12 Court said Pictiva does not dispute that all possible taper directions would
13 satisfy this language, but then stresses some other arguments.

14 So that was the point we were trying to make, is that the Court had
15 noted that Pictiva does not dispute that all possible taper directions would
16 satisfy this language.

17 JUDGE BAER: Counsel, I see you're over on time. I do have one
18 additional question, and I will make sure to give Mr. Warrick corresponding
19 time.

20 Going to the other issue, the other ground, that is, we were discussing
21 layers, what constitutes a layer.

22 Is there any disclosure in the record, either in -- particularly in the
23 patent, the challenged patent, of a layer including an area where there is not
24 that material? Do you follow what I'm asking?

1 MR. FRISCH: I believe I do, Your Honor. I mean, I would say that
2 this question has become a difficult one throughout the day in terms of how
3 we're talking about this. I do think Hanamura is in some sense of an
4 example of that. I do think a little bit of this discussion though, is somewhat
5 of a red herring in the sense that we have gotten into this issue of whether
6 the space is part of the layer.

7 And I think I -- what I would say is that the claims don't require the
8 space to be part of the layer itself. They're required to be in the layer, right?
9 And so meaning you had to have had a layer that you build or that you build
10 and remove -- this is the fight between the parties, but that ultimately has
11 kind of that space in it.

12 And again, this goes back to making sure that you're separating the
13 layers so they don't short circuit. And so I'm not sure that it necessarily has
14 to be quote unquote, "Part of the layer itself," that you have to include the
15 space as part of that layer. But it does have to be built into that layer, in the
16 sense that it has to separate portions of the layer.

17 JUDGE BAER: Thank you.

18 MR. FRISCH: Thank you, Your Honor.

19 JUDGE BAER: Unless any of my colleagues have any additional
20 questions?

21 Thank you.

22 And, Mr. Warrick, you have 18 minutes but we gave petitioner
23 another two minutes, so I will put 20 minutes on the clock. And you may
24 begin whenever you're ready.

25 MR. WARRICK: Thank you, Your Honor.

1 I -- I'd like to first go to this point about our Slide 66. I've put it on
2 the screen. Because what I believe I heard Counsel say is that their expert
3 testified that not only was it difficult to have any sort of working capacitor
4 with a typical film, but you just -- you couldn't do it. Something about
5 vertical versus horizontal.

6 But if you look at the rest of the testimony on the slide, we've
7 highlighted there where he says -- you know, he thought it would be a very
8 tiny area, couldn't easily tailor. Next paragraph says, at the end, "It's not
9 something you can tailor unless you make extremely thick films."

10 It doesn't say you can't do it. Effectively, what he is saying is it's a
11 matter of scale. He's saying at normal scales, you don't have enough
12 opposing contact regions. Now, we cited this for the point that, hey, the way
13 you propose putting this cathode over the dielectric in Ingle, it's also an
14 extremely small space that you would have trouble, even if you, you know,
15 adjusting. The answer here is you could scale.

16 Now, it's not that Ingle necessarily discloses a complete capacitor.
17 You probably have to do some of that scaling. But if you look at that top
18 part of Page 20 of Ingle, it talks about an anode and a cathode being
19 separated by that trench 7, into which you put a dielectric. If you had, as
20 Samsung's expert described, extremely thick films, we would posit that
21 could be a capacitor without the need for a cathode.

22 And again, going back to the deficiencies of the petition, Ingle does
23 not teach a cathode -- it doesn't teach applying a cathode in a structured
24 fashion. It doesn't tell you where you would put it. It doesn't tell you what
25 shape it would have. Hasei doesn't do any of those things.

1 They rely on Hasei for the structured application aspect of the claims.
2 But again, the electrode layer 50 of Hasei is not structured in any way, either
3 as part of the application process or subsequently.

4 Another point that was made was there was a reference to our expert,
5 Dr. Pattison. He had been asked questions at deposition about the '492
6 Patent, to which he said he thought certain things were not to scale and
7 perhaps could be adjusted, certain aspects of the dielectric.

8 And from that, the inference is that you could also do -- interpret the
9 Ingle reference the same way. However, that disregards the testimony of
10 Samsung's expert, that Ingle, in fact discloses a particular shape for the
11 dielectric. It's that round shape. And as we've explained, even if you
12 increase the scale of that shape such that you had more overlap of the
13 cathode over the first contact area, you would have problems because of the
14 non-uniform distance between the anode and the cathode.

15 There's another argument that you wouldn't -- in Hasei, why would
16 you use droplet discharge if you weren't going to have structured
17 application? Well, I don't know that you necessarily would. In fact, Hasei
18 says you could use this or you could use photolithography. That's in
19 Paragraph 37.

20 And in fact, the only example we have shown is for this negative
21 electrode 50, which our expert described as a common layer, and there's
22 really no reason to think -- other than if you shift the burden back to us as
23 the patent owner, that there would be a structure to that electrode.

24 And then another point that was made by Counsel had to do with the
25 word forming. So certainly, forming is in -- appears in multiple contexts in

1 the asserted -- in the challenged claims, but the context is so important.
2 Forming a first electrically conductive layer is very different than forming a
3 trench in the first and second electrically conductive layers.

4 It's, what are you forming? Well, you're forming a trench. You're
5 forming a trench in layers. The logical implication of that is that you are
6 cutting through the layers in some way. You're removing some of the
7 layers, such that you expose the substrate and the trench is defined by the
8 edges of those layers.

9 Those were the points that I wanted to address from Petitioner's
10 Counsel. I'm happy to address any other questions that Your Honors might
11 have regarding any other grounds.

12 JUDGE BAER: Anything further? Thank you.

13 Okay. With that, the case is submitted. We'd like to thank the parties
14 for their time and their explanations. That was quite helpful.

15 We can go off the record now.

16 (Whereupon, the above-entitled matter went off the record at 2:57
17 p.m.)

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