

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.

IPR2024-01223
Patent 6,949,389 B2

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

BAER, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner, Samsung Display Co., Ltd., filed a Petition requesting an *inter partes* review of claims 34–37 and 40–46 of U.S. Patent No. 6,949,389 B2 (Ex. 1001, “the ’389 patent”). Paper 1 (“Pet.”). Patent Owner, Pictiva Displays International Ltd., filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). With permission of the Board, Petitioner filed a Preliminary Reply (“Reply”) (Paper 9) and Patent Owner filed a Pre-Institution Sur-reply (“Sur-reply”) (Paper 10) addressing discretionary denial.

Based on the authority delegated to us by the Director under 37 C.F.R. § 42.4(a), we may not institute an IPR unless the information presented in the Petition and any preliminary response thereto shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). For the reason below, we conclude there is a reasonable likelihood that Petitioner would prevail in demonstrating at least one of the challenged claims is unpatentable. Pursuant to § 314, we hereby institute an *inter partes* review to the challenged claims of the ’389 patent.

A. *Related Matters*

The parties indicate that the ’389 patent is at issue in *Pictiva Displays International Ltd. v. Samsung Electronics Co., Ltd.*, Case No. 2:23-cv-00495 (E.D. Tex.) and *Pictiva Displays International Ltd. et al., v. Samsung Elecs. Co., Ltd. et al.*, No. 2:24-cv-00532 (E.D. Texas). Pet. 8; Paper 4, 1. The ’389 patent is also the challenged patent in IPR2024-01222.

B. The '389 Patent

The '389 patent relates to an encapsulation method for organic light emitting diode (OLED) devices. Ex. 1001, code (54). According to the '389 patent, an “encapsulated OLED device is formed by: fabricating multiple OLED devices on a substrate; depositing at least one planarization layer on the OLED devices,” and “selectively depositing at least one barrier layer over the planarization layer.” *Id.* at code (57).

Figure 5 of the '389 patent is reproduced below.

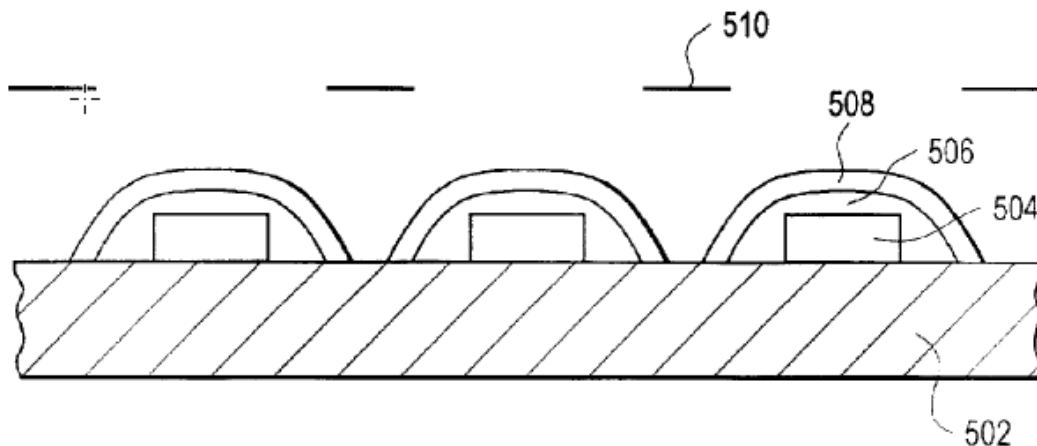


FIG. 5

Figure 5 is an “embodiment of encapsulation techniques in accordance with the present invention.” *Id.* at 6:54–55. In Figure 5, “OLED device **504** is . . . formed upon substrate **502**” and “[o]rganic layer **506** is deposited in a patterned fashion as well as barrier layer **508**.” *Id.* at 6:55–57.

C. Challenged Claims

Of the challenged claims, claims 34 and 41 are independent. Independent claim 34 is illustrative of the challenged claims and is reproduced below.

A method of encapsulating a plurality of devices fabricated upon a substrate, the steps of said method comprising:
fabricating a plurality of devices on a substrate;
selectively depositing at least one planarization layer upon said devices; and
selectively depositing at least one barrier layer over said planarization layer.

Id. at 10:65–11:5.

D. Asserted Grounds of Unpatentability

Petitioner challenges claims 34–37 and 40–46 of the '389 patent based on the asserted grounds of unpatentability set forth in the table below.

Pet. 9.

Claim(s) Challenged	35 U.S.C. §	References/Basis
34, 37, 40	103	Kijima ¹ , Suzuki ²
35	103	Kijima, Suzuki, Sturm ³
36	103	Kijima, Suzuki, Duthaler ⁴
41–46	103	Kijima, Suzuki, Fujimori ⁵

II. DISCRETIONARY DENIAL UNDER § 314(A)

A. Denial Based on Related District Court Proceeding

Patent Owner argues that the Board should exercise its discretion to deny institution under 35 U.S.C. § 314(a) in light of co-pending district court

¹ Japanese Published Application No. H09-245964, Pub. Sep. 19, 1997 (Ex. 1010, “Kijima”) (English translation).

² US 6,198,217, Pub. Mar. 6, 2001 (Ex. 1012, “Suzuki”).

³ US 6,087,196, Pub. July 11, 2000 (Ex. 1013, “Sturm”).

⁴ WO 2001/08242, Pub. Feb. 1, 2001 (Ex. 1016, “Duthaler”).

⁵ Japanese Published Application No. H10-41069, Pub. Feb. 13, 1998 (Ex. 1014, “Fujimori”) (English translation).

litigation. Prelim. Resp. 44–48.

We consider the following factors to assess “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.”

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Apple, Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”).

1. Factor 1 – Whether a Stay Exists or Is Likely to Be Granted if a Proceeding Is Instituted

Patent Owner argues that this factor favors denial because Petitioner has not requested a stay and there is no evidence the district court would likely grant one. Prelim. Resp. 44. We decline to speculate about how the District Court might rule on a motion that has not been filed. On this record, the first factor is neutral.

2. Factor 2 – Proximity of the Court’s Trial Date to the Board’s Projected Statutory Deadline

The District Court action is scheduled for trial on August 4, 2025. Prelim. Resp. 45. Patent Owner submits evidence that the District Court’s median time-to-trial is 21.6 months, which is consistent with the District

Court’s scheduled trial date. *Id.* (citing Ex. 2015). Our Final Written Decision is due to be issued approximately seven months after the trial’s scheduled date, in March 2026. In these circumstances, this second factor favors denial.

3. Factor 3 – Investment in the Parallel Proceeding by the Court and Parties

Petitioner asserts that “[t]he lawsuit remains in an early stage, with limited discovery activity to date.” Reply 1. Further, “by the institution deadline expert discovery would not have yet begun.” *Id.* Petitioner additionally asserts that it acted with diligence in filing its Petition “approximately five months after the service of infringement contentions” in the related district court matter. Pet. 70. Accordingly, Petitioner argues that this factor weighs against discretionary denial.

Patent Owner asserts that by the time we issue our Institution Decision, “the parties and the court will have invested heavily in the parallel litigation” including a *Markman* hearing, depositions, and document production. Prelim. Resp. 46.

Although the parties and the court have invested in the related district court litigation, we agree with Petitioner that much remains to be done, including expert discovery. In addition, we agree with Petitioner that its diligence in filing this matter approximately 7 months before the one-year statutory deadline weighs against discretionary denial. In these circumstances, this factor weighs against denial.

4. Factor 4 – Overlap Between Issues Raised in the Petition and in the Parallel Proceeding

Where a “petition includes the same or substantially the same claims,

grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.” *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (“*Fintiv*”) 12. “Conversely, if the petition includes materially different grounds, arguments, and/or evidence than those presented in the district court, this fact has tended to weigh against exercising discretion to deny institution.” *Id.* at 12–13.

Patent Owner asserts there is significant overlap between this proceeding and the parallel district court action because “Samsung asserts the same prior art references in the district court.” Prelim. Resp. 47.

Petitioner argues that there is incomplete overlap because “Patent Owner will need to narrow the asserted claims in advance of any trial . . . and Petitioner has challenged claims not asserted by Patent Owner, such that a trial could not resolve all of Petitioner’s claim challenges.” Pet. 70. Additionally, Petitioner has submitted a stipulation that, if the Petition is instituted, the District Court defendants “will not pursue an invalidity defense . . . based on the same grounds asserted in” this case. IPR2024-01222, Ex. 2018. This stipulation is similar to that in *Sand Revolution II, LLC v. Cont’l Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 12 (PTAB June 16, 2020) (informative), and is sometimes called a “*Sand Revolution* stipulation.” This stipulation weighs against denying institution. *See id.* at 11–12. Given Petitioner’s stipulation and the additional challenged claims not at issue in the district court, we determine that this factor weighs against exercising discretion to deny institution.

5. Factor 5 – Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party

Here, the defendants in the District Court actions are real parties-in-

interest with the Petitioner. Prelim. Resp. 47. Thus, this factor favors denial. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A).

6. Factor 6 - Other Circumstances that Impact the Board's Exercise of Discretion, Including the Merits

The sixth *Fintiv* factor takes into account other circumstances that may bear on our decision whether to exercise discretion to deny, such as whether the merits of the challenges are particularly strong. *Fintiv*, Paper 11 at 14–16. As outlined below, we find Petitioner's analysis shows a reasonable likelihood of prevailing. Beyond that, we do not find the merits in this case to be of particular significance such as to weigh this sixth factor for or against exercising discretion to deny the Petition.

7. Conclusion Regarding Discretionary Denial Based on District Court Proceeding

Although the trial date and relatedness of parties weigh in favor of discretionary denial, this must be balanced against Petitioner's diligence, the *Sand Revolution* stipulation, non-overlap of challenged claims, and the relatively modest investment in the district court action. On balance, after weighing the *Fintiv* Factors, we decline to exercise our discretion to deny institution.

B. Denial Based on Multiple Petitions

Patent Owner asserts we should deny the petition in IPR2024-01222 because it is one of two petitions challenging the same claims of the '389 patent. *See* Paper 7, 3. Patent Owner does not, however, argue we should deny the Petition in this case. *See id.* (arguing that “to the extent a trial is warranted, the Board should institute . . . [only] the IPR2024-01223

petition.”). Because Patent Owner contends only that we should deny the petition in IPR2024-01222, we do not address that issue here.

C. Claim Construction

1. “depositing by shadow mask, sputtering, ink jet deposition, screen printing evaporation”

Claim 40 recites “wherein the step for selectively depositing at least one barrier layer further comprises depositing by shadow mask, sputtering, ink jet deposition, screen printing, [or] evaporation.” Although the word “or” does not appear in the claim, Petitioner proposes we should construe the claim to include the inserted “or” consistent with the file history, which shows an examiner’s amendment intended to replace an original “and” with the missing “or.” Pet. 15 (citing Ex. 1002, 399, 418). Patent Owner does not dispute Petitioner’s proposed construction. *See* Prelim. Resp. 6–7. For purposes of institution, given the ’389 patent’s file history, we agree with Petitioner’s construction.

2. “planarization layer” and “selectively depositing”

Patent Owner asserts we should construe “planarization layer” and “selectively depositing” the same as “Petitioner’s real parties-in-interest (‘Samsung’) propose in the district court.” Prelim. Resp. 6. Specifically, Patent Owner asserts, “Samsung proposes in the district court that ‘planarization layer’ means ‘a layer of material that planarizes such that the propagation of defects from one layer to another layer is interrupted and the topography of the underlying layer is not reproduced.’” *Id.* “Samsung also proposes that ‘selectively depositing’ means ‘depositing a material in only desired areas, such that no additional processing must be performed for removing unwanted material.’” *Id.*

We decline to adopt these constructions. Despite what Samsung may have asserted in related district court proceedings, Petitioner has not proposed the same constructions here. Pet. 15. Furthermore, absent sufficient explanation addressing the merits of Samsung’s district-court constructions, we decline to adopt them simply because Samsung asserted them elsewhere.

D. Level of Skill in the Art

Petitioner argues a person of ordinary skill in the art “would have had a bachelor’s degree in Electrical Engineering, Materials Science, or a related field, and at least one year of experience in display technologies” and that “[a]dditional education might compensate for a deficiency in experience, and vice-versa.” Pet. 14–15. Patent Owner does not dispute the level of ordinary skill in the art. For this Decision, we agree with and adopt Petitioner’s proposal as reasonable and consistent with the level of skill reflected in both the prior art and the ’389 patent. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

E. Description of Primary Prior Art References

1. Kijima (Ex. 1010)

Kijima generally relates to a method of manufacturing a semiconductor element. Ex. 1010, code (54). Kijima’s Figure 12 is reproduced below.

[FIG. 12]

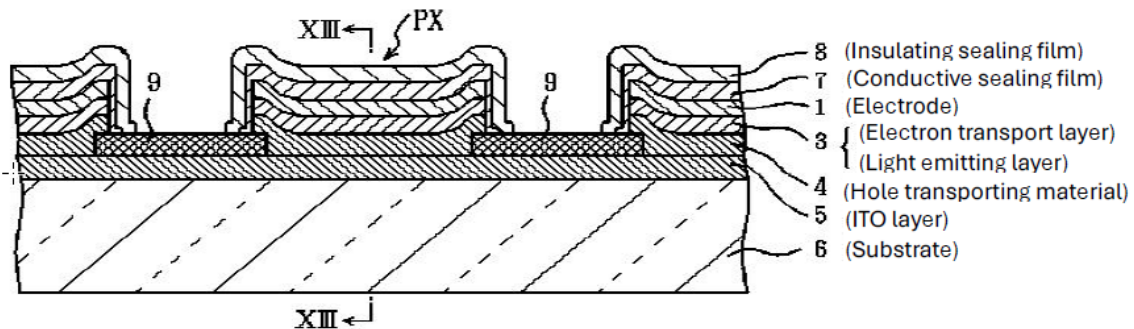


Figure 12 “is an enlarged cross-sectional view” depicting an organic electroluminescent (EL) element. *Id.* ¶ 53.

2. Suzuki (Ex. 1012)

Suzuki describes an “electroluminescent unit . . . covered with a protective double layer.” Ex. 1002, code (57). Suzuki’s Figure 1 is reproduced below.

FIG. 1

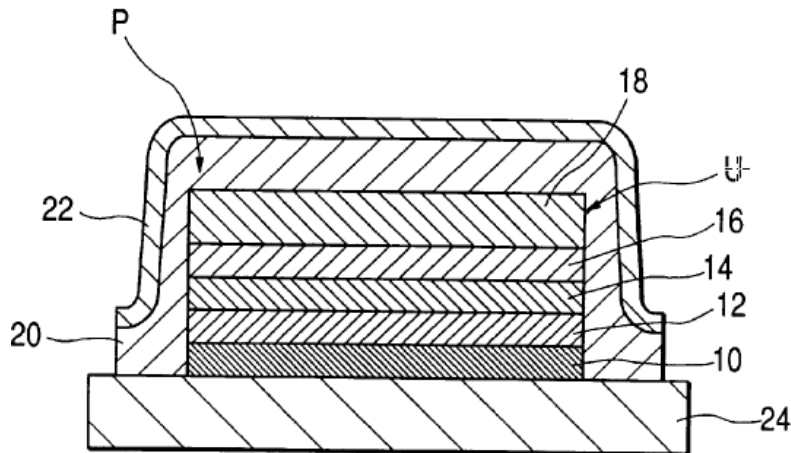


Figure 1 “is a schematic sectional view of an electroluminescent device.” *Id.* at 2:36–37. Figure 1 includes “inorganic barrier layer **22**” and “organic barrier layer **20** covering defects or pinholes inevitably formed particularly in the uppermost cathode layer.” *Id.* at 5:51–54.

III. OBVIOUSNESS ANALYSIS

Petitioner contends that challenged claims 34–37 and 40–46 would have been obvious over combinations of Kijima, Suzuki, Sturm, Duthaler, and Fujimori. Pet. 23–69. Based on the present record and for the reasons explained below, we determine that Petitioner has demonstrated a reasonable likelihood of success in demonstrating that the challenged claims would have been obvious over the asserted grounds.

1. Petitioner’s Proposed Combinations

Petitioner maps Kijima’s organic EL elements fabricated on a glass substrate 6 as depicted in Kijima’s Figures 2 and 12 to the independent claims’ “devices on a substrate.” Pet. 27. Petitioner explains that together, Kijima and Suzuki teach selectively depositing a planarization layer over the devices and a barrier layer over the planarization layer because Kijima teaches selectively depositing a protective sealing film (insulating sealing film 8) on its devices and Suzuki teaches improving such a sealing film by using a protective double layer made of organic planarizing barrier layer 20 and inorganic barrier layer 22. Pet. 28–38. Petitioner adds two additional references, Sturm and Duthaler, to address depositing a layer by ink jet or by screen printing, as recited in several dependent claims. *Id.* at 21–22; *see id.* at 42–49. Last, Petitioner adds Fujimori for its disclosure of a “mask attached to a substrate with magnetic force” to address additional elements in claims 41–46 that “specify particular requirements for using a mask when depositing the planarization layer.” *Id.* at 49 (quoting Ex. 1014).

Patent Owner challenges several aspects of Petitioner’s obviousness challenges. We address those issues below.

2. *Petitioner's Rationale for Combining Kijima and Suzuki*

According to Petitioner, a skilled artisan would have been motivated to add Suzuki's organic sealing layer between Kijima's OLED device and insulating layer to "help 'cover defects' and smoothen surface irregularities of the underlying conductive element, and . . . thus flatten the contours of Kijima's conductive layer 7 prior to depositing [Kijima's] Insulating layer 8." Pet. 33–34 (quoting Ex. 1012). Further, Petitioner explains, "[a] POSITA would also have appreciated, based on Suzuki's teachings, that the added organic sealing layer would help prevent the adsorption of moisture through pinholes, and in turn reduce the formation or enlargement of dark spots on the display manufactured according to Kijima." *Id.* at 34 (citing Ex. 1012, 5:38–58, Fig. 3).

Patent Owner asserts that one skilled in the art would not have added Suzuki's organic layer to Kijima for several reasons. First, Patent Owner asserts that Kijima's encapsulation method already prevented dark spot growth by depositing its conductive sealing film 7 and insulating sealing film 8 under vacuum. Prelim. Resp. 11–12; *see id.* at 20–22. On this record, we disagree with Patent Owner's argument. Kijima does not indicate that its method completely eliminates dark-spot concerns, as Patent Owner asserts. Rather, Kijima indicates only its methods produced devices with "good stability" because they produced no observable dark spots "for one month after production." Ex. 1010 ¶¶ 54, 58, 64, 68, 72. Kijima's lack of observable dark spots one month after production does not undermine that adding Suzuki's organic sealing layer would improve a single inorganic protective layer by preventing moisture adsorption through pinholes, as both

Suzuki and Petitioner's expert suggest. *See* Pet. 31–32 (citing Ex. 1004 ¶¶ 74–78; Ex. 1012, 5:59–67, Fig. 3).

Next, Patent Owner argues that Petitioner's combination fails because Petitioner has not shown that Suzuki's thin film encapsulation is more effective at preventing dark spots than Kijima's thick conductive sealing film deposited under vacuum. Prelim. Resp. 15–16; *see id.* at 21–22 (arguing that Kijima's sealing films are superior to Suzuki's at preventing dark spots). We disagree. On the present record, it is unpersuasive to argue that Kijima's sealing films are more effective than Suzuki's at preventing dark spots because we understand that Petitioner proposes augmenting Kijima's vacuum-deposited sealing films by adding Suzuki's organic sealing layer. *See, e.g.,* Pet. 32 (explaining that “th[e] simple modification would entail adding a new organic sealing layer on top of Kijima's OLED in order to form a smooth surface on which to **deposit Kijima's inorganic sealing film 8**” (emphasis added); *see also id.* at 33 (Petitioner's proposed combination of “Kijima, Fig 12 (modified according to Suzuki)” showing Suzuki's organic sealing layer added to Kijima's sealing films).

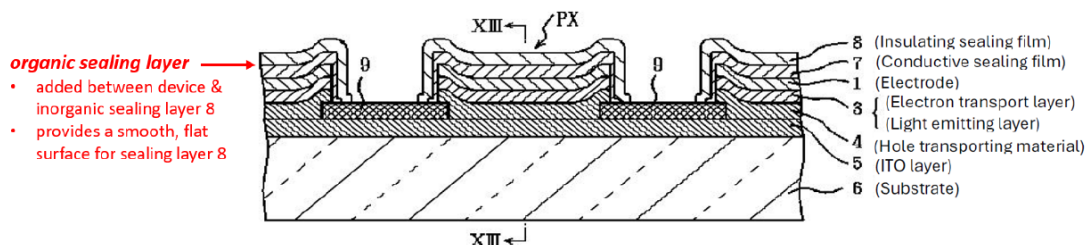
Next, Patent Owner argues that one skilled in the art would not have added Suzuki's additional layer because of the increased complexities, costs, and potential problems associated with adding additional layers. *See* Prelim. Resp. 22–23. We disagree with Patent Owner's argument because even if the proposed modification using Suzuki's teachings introduced potential risks and complexities, that tradeoff does not necessarily undermine Petitioner's proffered combination given Petitioner's articulated benefits, including the reduced potential for moisture contamination and dark spots. *See Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir.

2000) (“The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another.”).

Last, Patent Owner argues that there is no reasonable expectation of success for Petitioner’s proposed combination because adding Suzuki’s organic smoothing layer to Kijima is “against Kijima’s express teaching,” which cautions that radiant heat generated while depositing its insulating sealing film can degrade the underlying device absent a suitable conductive sealing film to dissipate that heat. Prelim. Resp. 32, *see id.* at 31–34. Patent Owner faults Petitioner for failing to address whether Suzuki’s organic film “could also efficiently dissipate the radiant heat to ensure the resulting device would operate.” *Id.* at 32.

On this record, we disagree with Patent Owner’s argument because it incorrectly assumes that Petitioner’s proposed combination omits Kijima’s conductive sealing film 7 that effectively dissipates heat to avoid damaging the underlying device. Petitioner’s proposed combination of “Kijima, Fig 12 (modified according to Suzuki)” is reproduced below.

[FIG. 12]



Pet. 33. As is clear in the figure above and in Petitioner’s descriptions, the proposed combination includes both Kijima’s heat-dissipating conductive

sealing film 7 and Suzuki's organic sealing layer. *Id.*; *see also, e.g., id.* at 32 (describing Petitioner's proposed modification as "adding a new organic sealing layer"). Indeed, according to Petitioner, the conductive sealing film of Kijima is actually part of the OLED because it is used to carry charge to the electrode. Pet. 25 n.4. In addition, Petitioner explains with support from its expert and the prior art that a skilled artisan would have a reasonable expectation of success in adding Suzuki's organic layer to Kijima's selective encapsulation method because both references teach depositing their sealing/barrier layers by vacuum deposition, and because other prior-art references describe using stacked double layers of inorganic and organic material to successfully encapsulate OLED devices. Pet. 34–35 (citing Exs. 1004, 1017).

Given Petitioner's analysis as outlined above, on this record, Petitioner has shown sufficiently that a skilled artisan would have had reason to add Suzuki's organic smoothing layer to Kijima's selective encapsulation methods and would have had a reasonable expectation of success in doing so.

3. *"selectively depositing [a] planarization layer"*

Independent claim 34 requires "selectively depositing at least [a] . . . planarization layer." Petitioner contends that together, Suzuki and Kijima teach this feature because Kijima teaches "selective encapsulation methods" and Suzuki teaches using an organic layer that "covers defects . . . and makes a smooth surface." Pet. 32, 36.

Patent Owner challenges two aspects of Petitioner's showing for this element. First, Patent Owner asserts that adding Suzuki's organic layer would not add a "planarization layer" because it "would be generally

following the topology of [Kijima's] underlying conductive sealing film 7.” Prelim. Resp. 17–18. We disagree with this argument because it relies on Patent Owner's “planarization layer” claim construction (i.e., requiring that the topography of the underlying layer is not reproduced), that we have not adopted, as explained above. Next, Patent Owner argues that “there is no evidence that Suzuki's method involves a selective deposition of a barrier layer.” *Id.* at 35. We disagree with this argument because it attacks Suzuki individually, rather than the combination of Suzuki's planarization layer and Kijima's selective-encapsulation methods that Petitioner asserts. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981).

Given Petitioner's analysis above, we agree that the proposed combination of Suzuki and Kijima teaches “selectively depositing [a] planarization layer” as claim 34 requires.

4. “*depositing by ink jet of an organic layer*”

Dependent claim 35 requires “depositing by ink jet of an organic layer.” Petitioner asserts that both Duthaler and Sturm teach depositing an insulating sealing film by ink jet and one skilled in the art would have been motivated to use that method to selectively deposit the organic sealing layer in the modified Kijima method for a number of reasons. Pet. 41–45. For example, Petitioner explains,

ink-jet printing is a non-contact deposition technique, and thus minimizes risk of contamination. Ink jet printing is also a directed deposition technique, which is very material efficient and limits the amount of waste generated compared to other deposition techniques. Similarly, the technique is conducive to depositing multiple coats, allowing for the deposition of thicker layers.

Finally, the technique is scalable because large numbers of inkjet heads can be ganged together to rapidly print over large areas.

Id. at 44 (citing Exs. 1004, 1013 1016).

Patent Owner asserts that a skilled artisan would not have used ink jetting to deposit an encapsulating film because ink-jetting is performed at atmospheric conditions, which would reintroduce contamination risks that Kijima avoids by using vacuum deposition. Prelim. Resp. 36. We disagree with this argument because Kijima's method for addressing contamination risks (vacuum deposition) does not teach away from a mitigating contamination in other ways, such as by avoiding contact via ink jet printing. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) ("A reference does not teach away . . . if it merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into the invention claimed."). In addition, even if ink-jet printing were inferior to vacuum deposition in one respect (i.e., contamination risks), that tradeoff would not necessarily undermine Petitioner's proffered combination given Petitioner's articulated benefits in other respects (i.e., efficient use of deposition material and scalability). *See Winner Int'l Royalty*. 202 F.3d 1340, 1349 n.8.

Next, Patent Owner contends that Petitioner's challenge fails because Sturm does not teach ink-jetting for an organic encapsulation layer and Duthaler concerns electrophoretic displays, rather than OLEDs. Prelim. Resp. 36–38. We disagree with these arguments because Petitioner relies on Sturm and Duthaler only for teaching ink-jet depositing and not for the features Patent Owner alleges are missing. *See* Pet. 42–43.

On the current record, we agree with Petitioner that its proposed combination of Duthaler/Sturm and the modified Kijima method teaches depositing an organic layer by ink jet as claim 35 requires. In addition, given Petitioner's analysis outlined above, Petitioner has articulated sufficient reasoning with rational underpinning to support the legal conclusion that its proffered combination would have been obvious. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

5. “*depositing by screen printing of an organic layer*”

Dependent claim 36 requires “depositing by screen printing of an organic layer.” Petitioner asserts that Duthaler teaches depositing electronic-device materials by screen printing and that one skilled in the art would have been motivated to use that method to selectively deposit the organic sealing layer in the modified Kijima method because it “provided advantages, including low-cost and high throughput, as described in Duthaler.” Pet. 48 (citing Ex. 1016, 14:13–23).

Patent Owner argues that a skilled artisan would not have used screen printing to deposit an insulating sealing film because “screen-printing would not only expose the devices to air before completion of encapsulation, but would also require a new set of equipment and processing conditions that disrupt [Kijima's] continuous operation.” Prelim. Resp. 41. Patent Owner's argument does not undermine obviousness because even if screen-printing is inferior to vacuum deposition in some respects, that tradeoff does not undermine Petitioner's articulated benefits related to low-cost and high throughput. Moreover, Petitioner does not need to show that Duthaler's screen-printing method “was an improvement in a categorical sense” over Kijima's method of vacuum-depositing encapsulation layers. *See Intel*

Corp. v. PACTXPP Schweiz AG, 61 F.4th 1373, 1381 (Fed. Cir. 2023) (internal quotation omitted). Rather, there is a motivation to combine when, as here, “a [known] technique ‘has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way.’” *Id.* at 1380 (quoting *KSR*, 550 U.S. 398, 417). In other words, Duthaler’s screen-printing does not need to be the best option for depositing an encapsulation layer, so long as it is a suitable one. *See PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197-98 (Fed. Cir. 2014).

On the current record, we agree with Petitioner that its proposed combination of Kijima, Suzuki, and Duthaler teaches depositing an organic layer by screen printing as claim 36 requires. In addition, given Petitioner’s analysis outlined above, Petitioner has articulated sufficient reasoning with rational underpinning to support the legal conclusion that its proffered combination would have been obvious.

6. *Petitioner’s Reliance on Fujimori*

Petitioner adds Fujimori for its disclosure of “manufacturing OLED display elements using a ‘mask attached to a substrate with magnetic force,’” to address additional elements in claims 41–46 that “specify particular requirements for using a mask when depositing the planarization layer.” Pet. at 49 (quoting Ex. 1014). According to Petitioner, a skilled artisan would have been motivated to use Fujimori’s magnetic-mask approach because it “maintain[s] robust alignment between the mask and the underlying substrate during deposition to prevent errors due to offsets,” and thus “improve[s] accuracy and enable[s] smaller pixel size.” *Id.* at 54 (citing Ex. 1004 ¶ 130).

Patent Owner contends that Petitioner’s challenge involving Fujimori fails because Fujimori “does not disclose or suggest using its magnetized masks for depositing . . . an organic planarization layer or an inorganic barrier layer” but instead “uses the magnetized masks to deposit . . . electrodes above the (OLED) organic layers.” Prelim. Resp. 43. We disagree with this argument because it attacks Fujimori individually, rather than the combination that Petitioner asserts—i.e., “Fujimori’s masking approach . . . used in the modified Kijima method, which entails using masks for selectively depositing the organic elements, electrodes, and sealing films.” Pet. 55.

On the current record, we agree with Petitioner that Fujimori teaches the additional elements in claims 41–46 related to using a mask when depositing the planarization layer. *See* Pet. 53–69. In addition, given Petitioner’s rationale as outlined above, on this record, Petitioner has shown sufficiently that a skilled artisan would have had reason to use Fujimori’s magnetic mask in Kijima’s modified encapsulation method.

7. Summary

Other than as outlined above, Patent Owner does not additionally challenge Petitioner’s obviousness showing. We have reviewed Petitioner’s arguments and the underlying evidence cited in support and we are persuaded that, at this stage, Petitioner sufficiently demonstrates a reasonable likelihood of succeeding in its asserted obviousness challenges to claims 34–37 and 40–46.

IV. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable

likelihood of success in proving that at least one of the challenged claims of the '389 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition. 37 C.F.R. § 42.108(a). At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed waived, even if that argument was presented in the Preliminary Response.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an IPR of claims 34–37 and 40–46 of the '389 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), an IPR of the '389 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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