

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG DISPLAY CO., LTD.,
Petitioner,

v.

PICTIVA DISPLAYS INTERNATIONAL LTD.,
Patent Owner.

IPR2024-01222
Patent 6,949,389 B2

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. 2; Paper 4, 1. The ’389 patent is also the challenged patent in IPR2024-01223.

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.

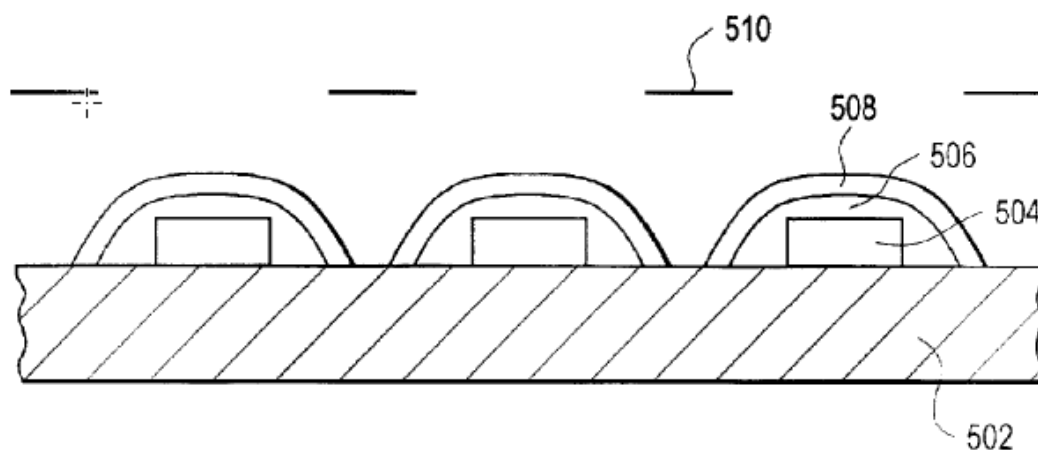


FIG. 5

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.

The '389 patent was filed on May 2, 2002 and does not claim priority to any earlier application. Ex. 1001, codes (22), (65). However, Patent Owner asserts that some of the challenged claims’ subject matter “were conceived by February 8, 2001,” and that “Patent filing between 2001-2003 by the inventors also provides evidence of reasonable diligence exercised by

the inventors.” Prelim. Resp. 6, 10. We decline to address Patent Owner’s assertions on the priority issue for two reasons. First, Patent Owner alleges that a subset of the challenged claims is entitled to the alleged priority date, but does not explain how the priority determination for only some challenged claims impacts the remainder of Petitioner’s asserted grounds. *See* Prelim. Resp. 6 (identifying only claims 34–37, and 40; *see also* Reply 3 (noting that the alleged priority date would not extend to all challenged claims). Second, Patent Owner has presented a bevy of arguments and evidence addressing the inventors’ alleged conception and diligence. Prelim. Resp. 6–14. Patent Owner bears the burden of production for these fact-intensive issue and, at this juncture, Petitioner has not had an opportunity to challenge or present contrary evidence. *See In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1375–76 (Fed. Cir. 2016) (“a patentee bears the burden of establishing that its claimed invention is entitled to an earlier priority date than an asserted prior art reference”). Thus, this issue is best resolved on a full record at trial.

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. 3.

Claim(s) Challenged	35 U.S.C. §	References/Basis
34, 35, 37, 40	103	Yamazaki ¹ , Ghosh ²
41–46	103	Yamazaki, Ghosh, Fujimori ³
34, 40	103	Weaver ⁴
35, 36	103	Weaver, Palanisamy ⁵
37	103	Weaver, Burrows ⁶

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 litigation. Prelim. Resp. 64–68.

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;

¹ U.S. 2003/0206332, filed Mar. 27, 2001 (Ex. 1005, “Yamazaki”).

² U.S. 2001/0052752, Pub. Dec. 20, 2001 (Ex. 1006, “Ghosh”).

³ Japanese Published Application No. H10-41069, Pub. Feb. 13, 1998 (Ex. 1014, “Fujimori”) (English translation).

⁴ U.S. 2002/0140347, filed Mar. 29, 2001 (Ex. 1008, “Weaver”).

⁵ U.S. 2003/0011300, filed July 12, 2001 (Ex. 1007, “Palanisamy”).

⁶ U.S. 6,866,901, filed Sept. 28, 2001 (Ex. 1009, “Burrows”).

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. 64. 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. 65. 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.* at 65 (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. 91. 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. 65.

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 has also asserted the same primary references in the district court.” Prelim. Resp. 66–67.

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. 91. 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. Ex. 2018. This stipulation is similar to that in *Sand Revolution II, LLC v. Continental 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. 67. 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 because this is one of two petitions challenging the same claims of the '389 patent. *See* Paper 7, 2. As our Consolidated Trial Practice Guide explains, "one petition should be sufficient to challenge the claims of a patent in most situations." PTAB Consolidated Trial Practice Guide (Nov. 2019) at 59. However, the Trial Practice Guide recognizes that "there may be circumstances in which more than one petition may be necessary," including "when there is a dispute about priority date requiring arguments under multiple prior art references."

Id. Here, there is such a dispute because even though the '389 patent was filed on May 2, 2002 and does not claim priority to any earlier application, as noted above, Patent Owner contends that some of the challenged claims are entitled to an earlier priority date. *See* Prelim. Resp. 6–14. Given this apparent priority dispute, we agree with Petitioner that two petitions—one asserting prior art that is vulnerable to the priority dispute and one asserting art that is not—are justified. *See* Paper 3, 3.

Patent Owner contends that despite the priority-date issue, Petitioner could have included all of its challenges in a single petition, as evidenced by Petitioner's inclusion of two separate primary references (Yamazaki and Weaver) in separate grounds here. Paper 7, 1. According to Patent Owner, "Petitioner offers no reason for why it could not have filed a single petition that includes only the Kijima and Yamazaki (or Weaver) grounds." *Id.* at 2.

We disagree. Petitioner's grounds involving Weaver challenge only five of the eleven total challenged claims in this case and IPR2024-01223. *See* Paper 3, 2 (grounds chart). Given word-count limits, Petitioner could not have reasonably included its Kijima-based grounds from IPR2024-01223 in its Petition in this case instead of its Weaver-based grounds because the Kijima grounds are far greater in scope—they challenge six additional claims beyond the Weaver grounds. *See* Paper 3, 2. In addition, we disagree with Patent Owner's suggestion that one petition with Petitioner's Kijima- and Weaver-based grounds would have been sufficient because again, Petitioner's limited Weaver-based challenge to just five claims is not a suitable alternative to its more comprehensive Yamazaki-based challenge that addresses all eleven challenged claims.

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. 10 (citing Ex. 1002, 399, 418). Patent Owner does not dispute Petitioner’s proposed construction. *See* Prelim. Resp. 18–19. 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. 18–19. 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.* at 19. “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 at this juncture. Despite what Samsung may have asserted in related district court proceedings, Petitioner

has not proposed the same constructions here. Pet. 10–11. 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. 9. 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 Yamazaki (Ex. 1005)

Yamazaki generally relates to a method of manufacturing a self-light emitting device. Ex. 1005, code (54). Yamazaki’s Figure 11 is reproduced below.

Fig.11

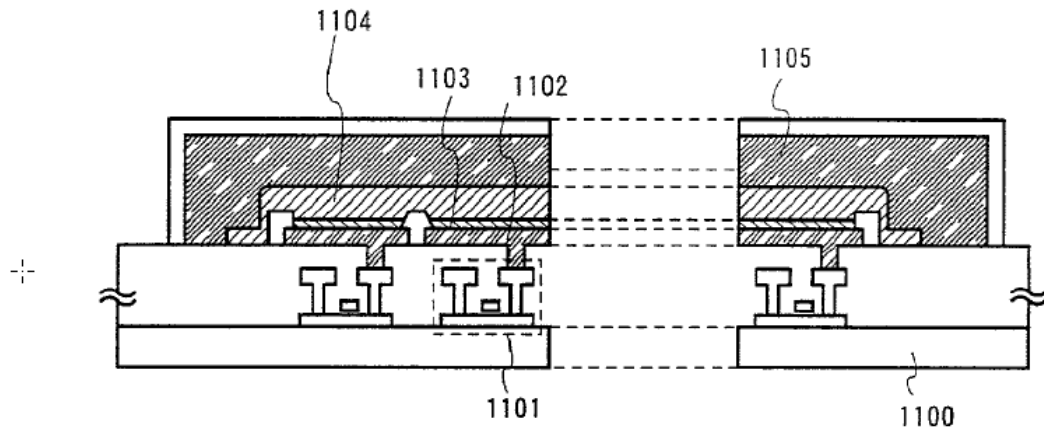


Figure 11 “is a diagram showing a cross-sectional structure of an active matrix type self-light emitting device.” *Id.* ¶ 26. Figure 11 includes “cover layer **1105**” and “barrier layer **1106**.” *Id.* ¶ 183. According to Yamazaki, “[b]ecause the cover layer **1105** is formed using the inkjet method, it can be selectively formed on the pixel portion.” *Id.* ¶ 178. Similarly, “barrier layer **1106** is formed selectively using a shadow mask.” *Id.* ¶ 183.

F. Whether Yamazaki, Weaver, Palanisamy Are Printed Publications under 35 U.S.C. § 311(b)

Patent Owner asserts that Yamazaki, Weaver, and Palanisamy do not qualify as printed publications under 35 U.S.C. § 311(b) because they only qualify as prior art under § 102(e). Prelim. Resp. 14–18. According to Patent Owner, “printed publications” as defined in the Patent Act include only references that qualify under 35 U.S.C. § 102(a) and (b), but not § 102(e). *Id.* at 16–17. We disagree because the Federal Circuit recently confirmed that section 102(e) references qualify as prior for use in IPRs. *See Lynk Labs, Inc. v. Samsung Electronics Co.*, 2023-2346, Slip. Op. (Fed. Cir. Jan. 14, 2025).

III. OBVIOUSNESS ANALYSIS

A. Petitioner's Yamazaki-based Grounds

Petitioner contends that claims 34, 35, 37, and 40–46 would have been obvious over Yamazaki, along with Ghosh and/or Fujimori. Pet. 17–63. 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 claims 34, 35, 37, and 40–46 would have been obvious over its Yamazaki-based grounds.

1. Petitioner's Proposed Combination of Yamazaki, Ghosh, and Fujimori

Petitioner relies on Yamazaki for the bulk of the challenged claim elements. Specifically, Petitioner maps Yamazaki's OLED display panel fabricated on a substrate 1100 as depicted in Yamazaki's Figures 11 and 14 to the independent claims "fabricating a plurality of devices on a substrate." Pet. 23–25. Petitioner further relies on Yamazaki's cover layer 1105, which "can be selectively formed on the pixel portion," for teaching selectively depositing a planarization layer upon the devices, as the independent claims require. *Id.* at 26–27 (quoting Ex. 1005 ¶ 178); *see also id.* at 27–29 (Petitioner relying on cover layer 1407 of Yamazaki's Figure 14 for similar disclosures of cover layer 1105 of Figure 11). Petitioner further maps Yamazaki's barrier layer 1106/1408 to the claimed barrier layer that is selectively deposited over the planarization layer. *Id.* at 29–32. Petitioner asserts that Yamazaki also teaches several dependent-claim features including depositing the organic layer by ink-jet, shadow mask, sputtering, screen printing, and/or evaporation. *Id.* at 32–34, 37.

Petitioner asserts that “to the extent there is any question whether Yamazaki teaches or suggests a shadow mask,” Ghosh’s “*shadow masking*” technique teaches this feature. Pet. 34, 35 (quoting Ex. 1006 ¶ 32). According to Petitioner, a skilled artisan would have been motivated to use Ghosh’s shadow mask to selectively deposit Yamazaki’s cover layer because “[u]sing a shadow mask has known advantages, including allowing for good control of the positions on the substrate where the planarizing layers are formed and being amenable for use in conjunction with other processes for depositing a layer of liquid material, such as flash evaporation.” *Id.* at 36 (citing Ex. 1003 ¶ 117).

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.” *Id.* at 38 (quoting Ex. 1014). According to Petitioner, a skilled artisan would have been motivated to use Fujimori’s magnetic-mask approach because it “achiev[es] favorable pattern processing accuracy,” and has “advantageous over conventional masking techniques, where for example ‘adhesion between the substrate and mask deteriorates due to warping and other factors.’” *Id.* at 38 (quoting Ex. 2014 ¶¶ 8–10).

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

2. “depositing [a] . . . planarization layer”

Independent claims 34 and 41 require “depositing [a] . . . planarization layer.” Petitioner contends that Yamazaki teaches this feature because

Yamazaki's cover layer "is formed using the ink jet method," and "has *planarity*." *Id.* at 26–27 (quoting Ex. 1005 ¶ 178) (Petitioner's emphasis).

Patent Owner contends that Petitioner's analysis is insufficient for several reasons. First, Patent Owner asserts that "the Petition provides no analysis whatsoever for why [Yamazaki's cover layer] planarizes 'such that the propagation of defects from one layer to another layer is interrupted,' as required by Samsung's proposed construction." Prelim. Resp. 21. We are unpersuaded by Patent Owner's argument because it relies on a claim construction that we have not adopted, as explained above.

Next, Patent Owner argues that a skilled artisan would not have used Yamazaki's planarization layer because Yamazaki teaches an organic layer between 10 and 300 nanometers thick, which is too thin for effective protection because large dark spots can form on organic layers less than 500 nanometers thick. Prelim. Resp. 22–23 (citing Ex. 1012). In addition, Patent Owner argues that a skilled artisan would not have used Yamazaki's method of depositing planarization layer because Yamazaki teaches depositing its organic layer under atmospheric conditions, which can have "adverse effects" and impose "a higher risk of device degradation" as compared to using vacuum deposition. *Id.* at 27 (citing Exs. 1010, 2001). We disagree with both these arguments. Petitioner relies on Yamazaki as a starting point to show that encapsulating a plurality of devices on substrate with selectively deposited planarization and barrier layers as recited in the challenged claims was known in the prior art. *See* Pet. 23–32. Although Patent Owner's arguments in theory might undermine whether a skilled artisan would have modified another reference's teachings with Yamazaki's

organic layer and depositing method, they do not undermine Petitioner's reliance on Yamazaki here.

Given Petitioner's analysis above, we agree at this juncture with Petitioner's argument and evidence that Yamazaki teaches a "depositing . . . [a] planarization layer," as the challenged claims require.

3. *"depositing an organic layer through a shadow mask."*

Dependent claim 37 requires depositing the planarization layer by "depositing an organic layer through a shadow mask." Petitioner asserts that Ghosh's shadow masking technique teaches this feature. Pet. 34, 35 (quoting Ex. 1006 ¶ 32).

Patent Owner raises two arguments in contesting this feature. First, Patent Owner argues that Petitioner "does not provide any reason for why a POSITA would have substituted Yamazaki's electric field application method or ink-jet method—its point of novelty—with Ghosh's evaporation method." PO Resp. 35. We disagree. Petitioner explains, along with support from its expert and the prior art, that a skilled artisan would have been motivated to use Ghosh's shadow-mask application method because "[u]sing a shadow mask has known advantages, including allowing for good control of the positions on the substrate where the planarizing layers are formed and being amenable for use in conjunction with other processes for depositing a layer of liquid material, such as flash evaporation." *Id.* at 36 (citing Exs. 1003, 1022). On the present record 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).

Second, Patent Owner asserts that Ghosh is deficient because Ghosh's depositing method "would not even qualify as 'selectively depositing' a material under Petitioner's understanding of the term" which requires "depositing a material in only desired areas, ***such that no additional steps must be performed for removing unwanted material.***" Prelim. Resp. 36. We disagree with this argument because it relies on claim construction that we have not adopted, as explained above.

Given Petitioner's analysis above, on the current record, we agree with Petitioner that "depositing an organic layer through a shadow mask," would have been obvious over Ghosh.⁷

4. Petitioner's Rationale for Combining 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." *Id.* at 38 (quoting Ex. 1014). According to Petitioner, a skilled artisan would have been motivated to use Fujimori's magnetic-mask approach because it "achiev[es] favorable pattern processing accuracy," and has "advantageous over conventional masking techniques, where for example 'adhesion between the substrate and mask deteriorates due to warping and other factors.'" *Id.* at 38 (quoting Ex. 2014 ¶¶ 8–10).

⁷ Patent Owner also challenges Petitioner's alternative argument that Yamazaki teaches the claimed depositing through a shadow mask. Prelim. Resp. 30–32. Because we find the present record sufficient regarding Petitioner's analysis relying on Ghosh for this feature, at this juncture we take no position on Petitioner's alternative reliance on Yamazaki.

Patent Owner argues that Petitioner has not shown that magnetic masks are suitable for depositing Yamazaki's encapsulation layers instead of for depositing electrodes and emission layers, as in Fujimori. Prelim. Resp. 40; *see id.* at 37–40. According to Patent Owner, Fujimori's magnetized shadow mask would be incompatible with Yamazaki's ink-jet and electric-field application methods because the electromagnet used to adhere Fujimori's mask “***would introduce unpredictable change in the particles' trajectories, making it impractical to control the positions at which the particles will be deposited.***” *Id.* at 40.

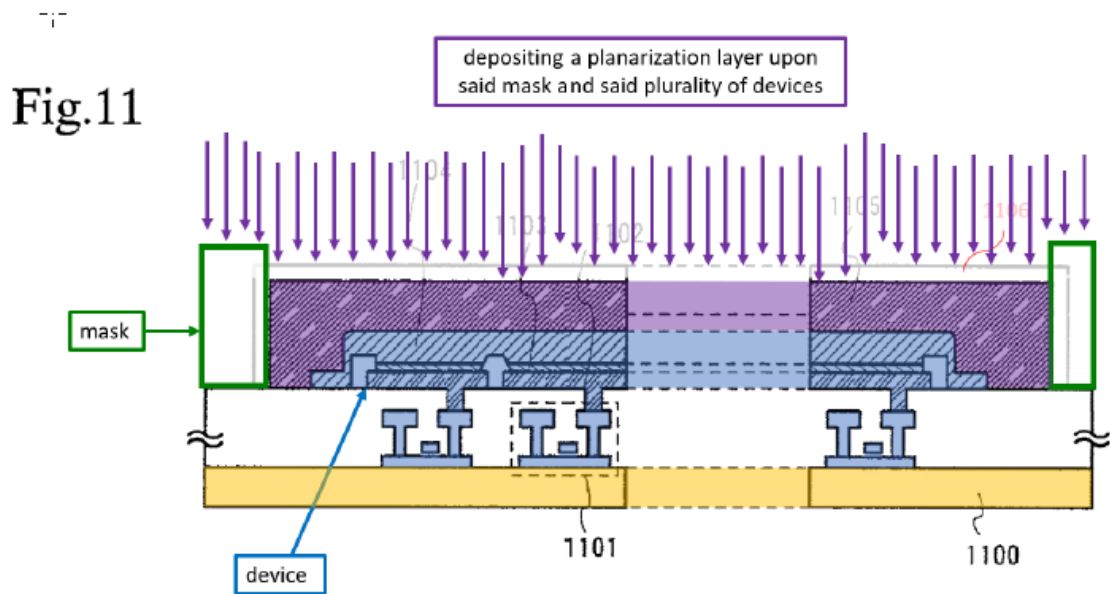
On this record, we disagree with Patent Owner's argument. Fujimori does not indicate that its magnetic masks are unsuitable for encapsulation layers. To the contrary, as Petitioner notes, Fujimori indicates that its magnetic mask is “not particularly limited” and may be used for multiple layers including light-emitting and non-light-emitting layers. Pet. 42–43 (quoting Ex. 1014 ¶ 23). Thus, as Petitioner's expert explains, “a POSITA would have reasonably expected success in using Fujimori's magnetic masking approach to form the OLED device, cover layer, and barrier layer of Yamazaki's embodiments.” Ex. 1003 ¶ 1038. Against Petitioner's evidence, Patent Owner does not identify any specific differences between Yamazaki's and Fujimori's layers such that alleged particle-trajectory problems associated with a magnetic mask might impact Yamazaki's layers, but not Fujimori's. *See* Prelim. Resp. 38–40.

Given Petitioner's analysis outlined above, on this record, Petitioner has shown sufficiently that a skilled artisan would have had reason to use Fujimori's magnetic-mask approach in Yamazaki's system and would have had a reasonable expectation of success in doing so.

5. “*depositing at least one planarization layer upon said mask and said plurality of devices*”

Claim 41 requires “depositing at least one planarization layer upon said mask and said plurality of devices.” Petitioner contends that together, Yamazaki and Fujimori teach this limitation because “[w]hen Fujimori’s magnetic mask is used with Yamazaki, the formation of the cover layer would entail *depositing at least one planarization layer* (Yamazaki’s cover layer 1105 or 1407) *upon said mask* (Fujimori’s mask) *and said plurality of devices* (the plurality of OLED display devices).” Pet. 49.

Patent Owner contends that Petitioner’s challenge fails because in Yamazaki, “the organic materials is deposited on the devices, but ***not also ‘upon said mask.’***” Prelim. Resp. 46 (quoting Ex. 2001 ¶49 (referencing Yamazaki’s Fig. 1C)). We disagree with this argument because it attacks Yamazaki individually, rather than the combination of Yamazaki and Fujimori that Petitioner asserts. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981). Petitioner’s proposed combination of Yamazaki and Fujimori includes a planarization layer on Fujimori’s mask and Yamazaki’s device, as depicted in Petitioner’s annotated version of Yamazaki’s Figure 11, reproduced below.



Pet. 50; *see id.* at 49. Figure 11 of Yamazaki above is annotated to show a device highlighted in blue, a mask outlined in green, and a steady row of purple arrows directed at the surface of cover layer 1105 and the mask, with a header that describes the arrows as “depositing a planarization layer upon said mask and said plurality of devices.” Pet. 50. Given Petitioner’s analysis above, we agree that the proposed combination of Yamazaki and Fujimori teaches “depositing at least one planarization layer upon said mask and said plurality of devices,” as claim 41 requires.

6. “*removing said mask from said substrate*”

Claim 41 requires “removing said mask from said substrate.”

Petitioner asserts that “[w]hen Fujimori’s magnetic masking approach is used with Yamazaki, the method would entail removing said mask from said substrate because the mask would need to be removed after forming the cover layer, in order to subsequently deposit the barrier layer.” Pet. 51 (citing Ex. 1005 ¶¶ 8, 183, 203, Figs. 11, 14). Further, Petitioner explains, “Fujimori discusses removing the mask before the next step in the process.”

Id. at 52 (citing Ex. 1014 ¶ 50 (explaining that “[s]ubsequently, the mask for the light-emitting layers was removed”)). Patent Owner argues that “in Yamazaki, even when a mask is used, it is a distance away from the substrate,” and thus “there is . . . no ‘removing said mask *from* said substrate.’” Prelim. Resp. 46. We disagree with Patent Owner’s argument because once again it attacks Yamazaki individually, instead of the combination of Fujimori’s mask in Yamazaki’s system that Petitioner proposes.⁸ Given Petitioner’s analysis above, we agree Petitioner that its proposed combination teaches “removing said mask from said substrate,” as claim 41 requires.

1. Summary of Petitioner’s Yamazaki-based Grounds

Other than as outlined above, Patent Owner does not additionally challenge Petitioner’s Yamazaki-based challenges. 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 obviousness challenge to claims 34, 35, 37, and 40–46 based primarily on Yamazaki.

B. Petitioner’s Weaver-based Grounds

Petitioner’s Weaver-based grounds challenge claims 34–37 and 40. Pet. 3. Of those five claims, only claim 36 is unique to Petitioner’s Weaver-

⁸ Patent Owner makes a similar argument in asserting that Yamazaki’s mask is not in contact with the substrate as required by claim 43 and need not be non-sticking to the OLED substrate as required by claim 44. Prelim. Resp. 49. We disagree with these arguments because they, too, attack Yamazaki individually, rather than the combination of Fujimori’s mask in Yamazaki’s system that Petitioner proposes.

based grounds because claims 34, 35, 37, and 40 are also subject to Petitioner's Yamazaki-based challenge. *See id.* Having determined that Petitioner meets the threshold showing necessary to support institution for its Yamazaki-based grounds, we decline to address whether the Weaver-based grounds also support institution. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019)⁹ ("The Board will not institute on fewer than all claims or all challenges in a petition."); *see PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (interpreting the relevant statutory provisions, in light of *SAS*, to require "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition").

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

⁹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

permitted during trial, shall be deemed forfeited, 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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