

IN THE 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.

Case No. IPR2024-01223

Patent No. 6,949,389

PETITIONER'S NOTICE OF APPEAL

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a), Petitioner, Samsung Display Co., Ltd., provides notice that it appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision, entered March 4, 2026 (Paper 34) and attached as Exhibit A, and from all underlying orders, decisions, rulings, and opinions regarding U.S. Patent No. 6,949,389 (“the ’389 patent”) entered in the above-captioned proceeding (IPR2024-01223) before the Patent Trial and Appeal Board (“Board”). This notice of appeal is timely because it is filed within 63 days of the date of the Final Written Decision.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Petitioner submits that the appeal will address the Board’s decision concluding that claims 34–37 and 40–46 have not been shown by a preponderance of the evidence to be unpatentable based on the grounds in the above-captioned proceeding, and any other issues decided against Petitioner in any order, decision, ruling, or opinion in the above-captioned proceeding.

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a), this Notice is being filed with the Director of the United States Patent and Trademark Office, and a copy of this Notice is being concurrently filed with the Patent Trial and Appeal Board. In addition, a copy of this Notice is being filed with the Clerk of the United States Court of Appeals for the Federal Circuit, along with an electronic copy of the Notice and

the required docketing fees, which are being served electronically on the Court by CM/ECF and pay.gov.

Date: May 6, 2026

Respectfully submitted,

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CERTIFICATE OF SERVICE AND FILING

I hereby certify that on May 6, 2026, in addition to being filed and served electronically through the Patent Trial and Appeal Board's P-TACTS System, this NOTICE OF APPEAL is being filed with the Director of the United States Patent and Trademark Office by electronic mail at efileSO@uspto.gov.

I also hereby certify that on May 6, 2026, this NOTICE OF APPEAL and the requisite docketing fees are being filed with the Clerk's Office of the United States Court of Appeals for the Federal Circuit via CM/ECF.

I also hereby certify that on May 6, 2026, this NOTICE OF APPEAL is being served via electronic mail to the following counsel at the addresses designated for service by Patent Owner:

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Exhibit A

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.*

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

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.”). Pursuant to 35 U.S.C. § 314, we instituted *inter partes* review as to all of the challenged claims and all grounds raised in the Petition. Paper 11. Following institution, Patent Owner filed a Response. Paper 23 (“PO Resp.”). Petitioner filed a Reply to Patent Owner’s Response (Paper 22, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 30, “PO Sur-reply”). On December 9, 2025, we held an oral hearing. A transcript of the hearing is included in the record. Paper 33.

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision issued pursuant to 35 U.S.C. § 318(a). For the reasons we discuss below, we determine that Petitioner has not proven by a preponderance of the evidence that the challenged claims are unpatentable.

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 IPR2024-01222.

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.

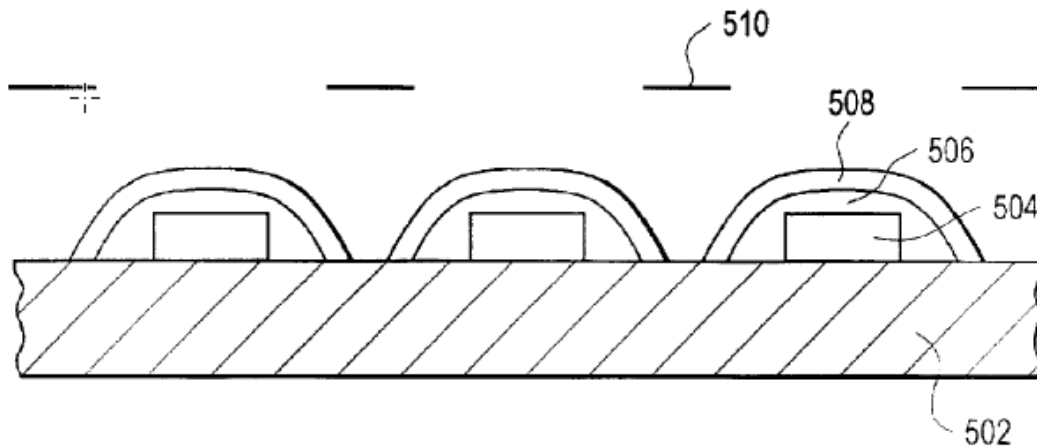


FIG. 5

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 and is reproduced below.

34. 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 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

E. Claim Construction of “planarization layer”

Patent Owner asserts we should construe “planarization layer” as “a layer of material that planarizes such that the propagation of defects from one layer to another layer can be interrupted and the topography of the underlying layer and/or structure is not reproduced.” PO Resp. 10.

According to Patent Owner, we should adopt this construction because the parties agreed to it in a related district court proceeding and it is supported by the intrinsic evidence. *Id.* at 10–14. Petitioner does not dispute this

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).

construction. Paper 33, 6:17–8:1; *see* Pet. Reply 5. We adopt the parties’ agreed-to construction.

F. 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]

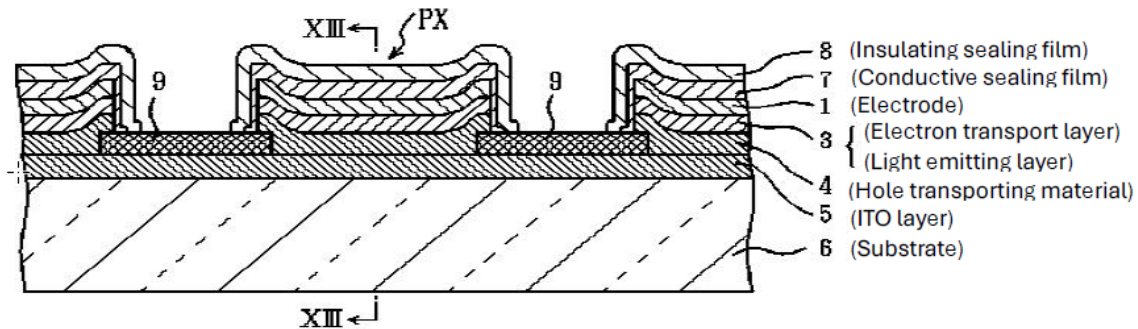


Figure 12 “is an enlarged cross-sectional view” depicting an organic electroluminescent (EL) element. *Id.* ¶ 53.

2. Suzuki (Ex. 1012)

Suzuki describes an “electroluminescent unit . . . covered with a protective double layer.” Ex. 1012, code (57). Suzuki’s Figure 1 is reproduced below.

FIG. 1

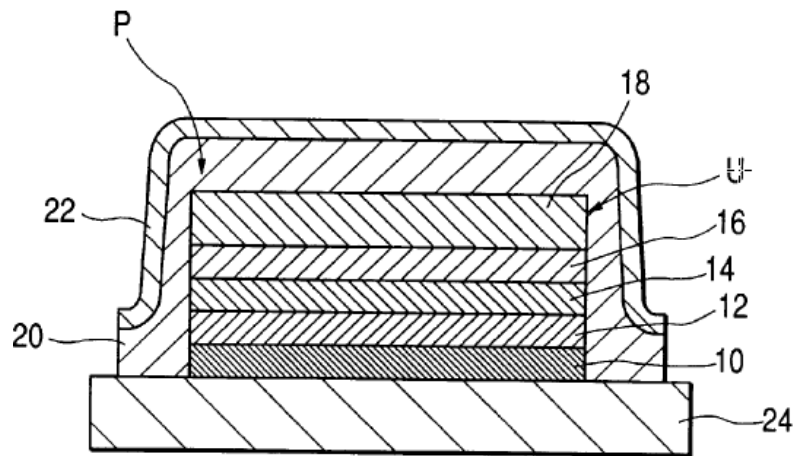


Figure 1 “is a schematic sectional view of an electroluminescent device.” *Id.* at 2:36–37. Figure 1 includes “inorganic barrier layer **22**” and “organic barrier layer **20** covering defects or pinholes inevitably formed particularly in the uppermost cathode layer.” *Id.* at 5:51–54.

G. 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. 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).

II. OBVIOUSNESS ANALYSIS

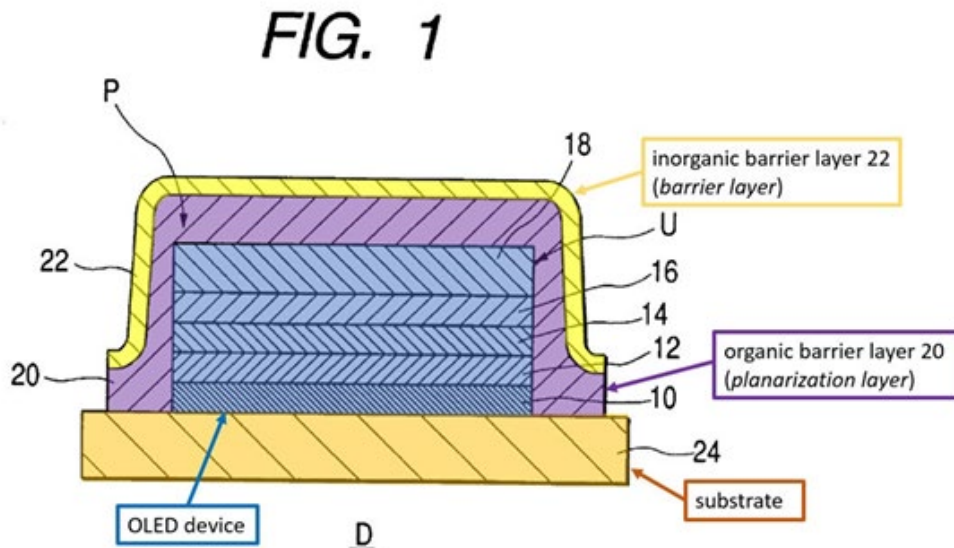
For all of its challenges, Petitioner argues that Kijima and Suzuki teach selectively depositing a planarization layer over the devices and a

barrier layer over a planarization layer because Kijima teaches selectively depositing a protective sealing film (insulating sealing film 8) on its devices and Suzuki teaches improving such sealing films by using a protective double layer made of an organic barrier layer 20 followed by inorganic barrier layer 22. Pet. 28–38; *see id.* at 50–51.

A. “depositing at least one planarization layer”

Independent claims 34 and 41 require “depositing at least one planarization layer.” According to Petitioner, Suzuki’s organic barrier layer 20 teaches the claimed planarization layer. Pet. 30–31; 58–59; *see* Pet. Reply 6–9. Patent Owner argues that Petitioner’s challenge fails because Petitioner has not shown Suzuki’s organic layer interrupts the underlying layer’s topography as required under the parties agreed-to construction. PO Resp. 18–21. For the reasons below, we agree with Patent Owner.

Suzuki’s Figure 1 is reproduced below, with Petitioner’s annotations added.



Pet. Reply 7; *see* Ex. 1012, Figure 1. Suzuki's Figure 1 (above) shows a schematic sectional view of an electroluminescent device U, including cathode 18 and organic barrier layer 20 (purple). Ex. 1012, 2:55–62. Suzuki describes its cover layer in the following passage:

In the practice of the invention, a protective or Sealing layer P is formed to cover the unit U therewith as shown in FIG.1. The protective layer P includes two layers including an organic barrier layer 20 covering defects or pinholes inevitably formed particularly in the uppermost cathode layer 18, and an inorganic barrier layer 22. It will be noted that defects are mainly caused by foreign matter inevitably deposited on the electroluminescent unit U during the course of the fabrication thereof under very severely controlled conditions.

The organic barrier layer 20 which exhibits good affinity for the metal or alloy cathode, covers defects in the electroluminescent unit U therewith and makes a smooth surface on the relatively irregular surface of the cathode 18. Then, the inorganic barrier layer 22 is formed on the smooth surface of the organic barrier layer 20, thus ensuring the formation of the layer 22, which is substantially defect-free and dense.

Ex. 1012, 5:49–67.

Petitioner argues Suzuki's organic barrier layer does not reproduce the underlying layer's/structure's topography because "Suzuki's organic barrier layer 20 'makes a smooth surface on the relatively irregular surface of the cathode 18.'" Pet. Reply 7 (quoting Ex. 1012, 5:59–67). We disagree. Instead, we agree with Patent Owner that Suzuki's irregular-surface smoothing describes covering defects, not suppressing the underlying cathode's topography. PO Sur-reply 5. The smooth-surface passage that Petitioner highlights comes immediately after two sentences describing inevitable "defects," "pinholes," and "foreign matter" on the cathode surface and before a sentence describing "ensuring the formation of the layer 22,

which is substantially defect-free.” Ex. 1012, 5:52–67. Suzuki’s organic barrier 20 “makes a smooth surface” by covering defects because the defects are the only source of the “irregularity” that Suzuki refers to here. *Id.* We note Mr. Humphrey’s testimony, which we credit in this regard, that the “defects are created incidentally on the surface of the underlying layer and are generally not considered to be part of the underlying layer’s topography, which is a macroscopic property by design” and that the organic layer is not a planarization layer because it would reproduce the topography of the underlying layer. Ex. 2018 ¶¶ 47–48. Because the parties’ agreed-to construction of “planarization layer” “requires ‘a layer of material that planarizes’ for two distinct functions,” Petitioner’s showing of just one of those functions is insufficient. PO Sur-reply 2.

In our final written decision in IPR2024-01222, we found another reference, Weaver, which teaches a layer with “a smooth planar surface, rather than forming a surface that reflects irregular contours of the underlying surface,” teaches a planarization layer under the parties agreed-to construction. IPR202-01222, paper 37, 27–28 (“1222 Decision”); Ex. 1008 ¶ 35. We find important differences between Suzuki’s description (“a smooth surface on the relatively irregular surface”) and Weaver’s (“forms a smooth planar surface, rather than forming a surface that reflects irregular contours of the underlying surface”). *See* Ex. 1008 ¶ 35; Ex. 1012, 5:52–67. In the 1222 Decision, we found Weaver expressly characterizes its layer as “planarizing”/“planar” and describes smoothing irregular contours, which results in not reproducing topography. Suzuki does neither.

Petitioner also argues that Suzuki’s cover layer 20 suppresses the underlying cathode’s topology because Suzuki’s Figure 1 (above) depicts its

cover layer with “visibly rounded corners, unlike the sharp corners of the underlying topology,” as shown in figure above. Pet. Reply 7. We disagree. This argument reads too much into Suzuki’s Figure 1. There is no indication that Suzuki’s Figure 1 is drawn to scale and, even if it were, as Patent Owner’s expert, Mr. Humphrey, notes, Suzuki’s cover layer “largely follows the topology of the -- of the underlying material.” Ex. 1036, 18:11–13. Although Suzuki references smoothing twice in its discussion of the cover layer, it does so only in the context of covering defects, but not smoothing the cathode’s corners. *See* Ex. 1012, 5:49–67. Without more, the very minor rounding of the cathode’s corners depicted in Figure 1 is not enough to meet Petitioner’s burden to show unpatentability under the parties’ agreed-to construction.

III. CONCLUSION

For the reasons above, we find Petitioner has not demonstrated that claims 34–37 and 40–46 are unpatentable. A summary of our conclusions is set forth in the table below.

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
34, 37, 40	103	Kijima, Suzuki		34, 37, 40
35	103	Kijima, Suzuki, Sturm		35
36	103	Kijima, Suzuki, Duthaler		36
41–46	103	Kijima, Suzuki, Fujimori		41–46
Overall Outcome				34–37, 40–46

IV. ORDER

Accordingly, it is

ORDERED that claims 34–37 and 40–46 of the '389 patent have not been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2024-01223
Patent 6,949,389 B2

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