

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. IPR2024-01093

Patent No. 8,723,164

PETITIONER'S PRELIMINARY REPLY

I. Patent Owner’s construction for “matrix material” is contrary to the intrinsic record.

The Petition shows that Choulis, Sugiura, and Thompson each disclose first, second, and third “matrix materials” having the HOMO and LUMO properties recited by the ’164 patent claims. For example, Choulis discloses an OLED light emitting layer containing PVK, TPD, and PBD, alongside an energy level diagram showing the HOMO and LUMO properties of the disclosed materials. Choulis, [0030], Fig. 4.

Lacking credible responsive arguments, Patent Owner attempts to import new requirements into the term “matrix material.” Specifically, Patent Owner argues that “matrix materials” must “exist in sufficient amounts to form a continuous phase in which other materials can be embedded,” POPR at 11, and seeks to impose a concentration limitation such that any “additives up to 10 wt% would be regarded ... *not* as a matrix material.” POPR at 7 (emphasis added). Patent Owner then suggests (incorrectly) the Choulis, Sugiura, and Thompson would not meet such requirements.

First, Patent Owner’s implicit construction is contrary to the intrinsic evidence and should be rejected. Patent Owner relies on this implicit construction to try to argue, for instance, that Choulis’s “TPD” is not a “matrix material” because it is allegedly present at “around 9% concentration.” POPR at 6. Yet the ’164 patent’s specification expressly identifies the same material “TPD”—the “second matrix material” taught by Choulis and Sugiura—as an exemplary “matrix material.” Ex. 1001, 8:38-50. The ’164 patent does not describe any concentration, or concentration threshold, for TPD,

nor suggest the same TPD material would somehow cease to be a matrix material if its concentration were below 10 wt%. *Id.* In describing “matrix materials,” and disclosing many examples of them, the ’164 patent never refers to any minimum threshold concentration, much less imposes one. Patent Owner does not identify any evidence of disclaimer or lexicography that would warrant departure from the plain meaning of “matrix material.” Nor could Patent Owner, because there is none.

Patent Owner’s reliance on statements regarding the concentration of emitter materials, POPR at 7, is mistaken. Just because the concentration of an *emitter material* “can be up to 10 wt%,” Ex. 1001, 3:65-66, it does not follow that a *matrix material* must have a concentration of more than 10 wt%. Indeed, the ’164 patent does not even require emitter materials to have a concentration of 10% or less. For instance, dependent claim 8—which depends from claim 1—adds a limitation to claim 1 that “the emitter material in the emission layer has a concentration of ≤ 10 wt %,” reinforcing that in claim 1 the emitter material is *not* limited to such a concentration. This is consistent with the specification, which states that the concentration of an emitter material “*can be up to 10 wt%,*” Ex. 1001, 3:65-66 (emphasis added), and does not foreclose it being higher.

Second, Patent Owner’s merits arguments would be unavailing even under its erroneous construction. For example, Patent Owner improperly tries to limit Choulis’s teachings to one exemplary embodiment in its “EXAMPLE” section in

which TPD is described as being “around 9% concentration in the mixture.” POPR at 6. Choulis, however, does not limit its teachings to this concentration or this exemplary embodiment. Patent Owner ignores that Choulis teaches a structure for a “light emitting layer” including “a host material” (the claimed “first matrix material”), TPD (the claimed “second matrix material”), and PBD (the claimed “third matrix material”) and does not place limits on the concentrations of the materials. Choulis, [0030].

Similarly, Patent Owner attempts to limit Sugiura to an illustration (Figure 1) to argue that Sugiura’s second and third matrix materials are “dispersed and segregated and discontinuous particles.” POPR at 50. Patent Owner inexplicably ignores Sugiura’s express teaching that TPD (exemplary “second matrix material”) and Alq3 (exemplary “third matrix material”) can be present with PVK (exemplary “first matrix material”) in a “mixing ratio of ... PVK:Alq3:TPD...=100:60:80...” Sugiura, [0062].¹ In other words, even under Patent Owner’s flawed claim construction, PVK and Alq3 would “exist in sufficient amounts to form a continuous phase in which other materials can be embedded.” POPR at 11.

Patent Owner’s arguments concerning Thompson likewise fail even under its

¹ In addition to TPD, Alq3 is another matrix material expressly identified by the ’164 patent without a concentration requirement. Ex. 1001, 8:3-9.

flawed construction. The '164 patent explains that the “second matrix material” can “comprise a hole transport material” and the “third matrix material” can “comprise an electron transport material.” Ex. 1001, 2:4-39. Thompson expressly teaches the use of a “material [that] is capable of transporting a hole or an electron” and a “material ... capable of transporting a charge...of opposite polarity”—*i.e.*, an electron transporting material and a hole transporting material. Thompson, [0008]. Thompson also teaches concentrations of 15% (hole transporting material) and 40% (electron transporting material). *See id.*, [0054].

II. The Board should not deny institution under 35 U.S.C. § 314(a) and *Fintiv*.

Petitioner respectfully submits that discretionary denial is not warranted for this patent challenge. The '164 patent is now asserted against Samsung Electronics in two matters, *Pictiva Displays International Ltd. v. Samsung Electronics Co., Ltd.*, Case No. 2:23-cv-00495 (E.D. Texas) (the “-495 matter”), and *Pictiva Displays International Ltd. et al., v. Samsung Elecs. Co., Ltd. et al.*, No. 2:24-cv-00532 (E.D. Texas) (“-532 matter”). Both cases remain in early stages, and there is uncertainty as to whether the -495 matter will continue.

Patent Owner argues for denial in view of -495 matter, in which trial is currently scheduled for August 4, 2025. Yet that lawsuit still remains in an early stage, with limited discovery activity beyond initial contentions and discovery requests. Patent Owner’s argument on *Fintiv* factor three is that by the institution

date, “the parties would have completed their claim construction briefing and substantially completed their document production and exchanged privilege logs.” POPR at 62. Yet no *Markman* hearing or ruling would have taken place, fact discovery would remain ongoing, and expert discovery would not have yet begun.

Additionally, Samsung has filed a motion to dismiss the -495 matter due to the plaintiff’s lack of standing, which remains pending. See -495 matter, Dkt. 62. Patent Owner also joined with an entity named Key Patent Innovations Ltd. to file a replacement lawsuit on July 12, 2024 (the -532 matter). That replacement lawsuit is at an earlier stage than the -495 matter, with infringement contentions served on October 24, 2025, an initial scheduling conference held on November 7, 2025, and trial currently scheduled for May 4, 2026.

Petitioner also filed this IPR just three and a half months after service of infringement contentions on March 11, 2024, in a case with six asserted patents, demonstrating that Petitioner acted with diligence. Additionally, Patent Owner would need to narrow the asserted claims in advance of any trial, such that a trial could not resolve all of Petitioner’s claim challenges. Finally, Petitioner submits that discretionary denial is inappropriate because the Petition presents compelling evidence of unpatentability, for the reasons shown in Section VIII of the Petition.

Petitioner will seek to apprise the Board of any material litigation developments before the institution deadline.

Date: November 20, 2024

Respectfully submitted,

By /Scott C. Weidenfeller/
Scott C. Weidenfeller
Registration No.: 54,531
David A. Garr
Registration No.: 74,932
COVINGTON & BURLING LLP
One CityCenter, 850 Tenth Street, NW
Washington, DC 20001

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, I hereby certify that the foregoing Petitioner's Preliminary Reply was served by electronic mail on the following counsel of record for patent owner:

Hong Annita Zhong (hzhong@irell.com)
Jie Gao (jgao@irell.com)
Rebecca Carson (rcarson@irell.com)
Philip Warrick (pwarrick@irell.com)
Jason Sheasby (jsheasby@irell.com)
PictivaIPR@irell.com

Date: November 20, 2024

/Scott C. Weidenfeller/
Scott C. Weidenfeller (Reg. No. 54,531)