UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INNOSCIENCE AMERICA, INC.,
Petitioner,

v.

INFINEON TECHNOLOGIES AMERICAS CORP.,
Patent Owner.

Case No. IPR2025-00094
Patent No. 8,264,003

PATENT OWNER'S RESPONSE TO DIRECTOR REVIEW REQUEST

TABLE OF CONTENTS

I. INTRODUCTION 1

II. THE BOARD DID NOT ABUSE ITS DISCRETION FINDING THAT THE PETITION NEVER PROPOSED MODIFYING MISHRA'S FIGURE 5 TO CONNECT FIELD PLATE 66 TO THE SOURCE 2

A. The Petition at Pages 82–86 Proposes Implementing Gate Operating Modes, Not Rewiring Field Plate 66 to the Source 4

B. The Petition at Pages 94–95 Attempts to Map the Mishra-Ren Combination to Limitation [1C5], Proposing No Further Modification 6

C. The Reply Pivoted to a Different Theory Absent from the Petition 9

III. THE BOARD REQUIRED NOTHING MORE THAN A REASON FOR THE MODIFICATION, WHICH PETITIONER NEVER SUPPLIED 10

A. The Board Applied the Correct Legal Standard, Not a Heightened One 11

B. No Reason to Modify Figure 5 Appears in the Mishra, Petition, the Reply, or the Request 12

IV. CONCLUSION 15

TABLE OF AUTHORITIES

CASES

Netflix, Inc. v. DivX, LLC,
84 F.4th 1371 (Fed. Cir. 2023) 13

In re Stepan Co.,
868 F.3d 1342 (Fed. Cir. 2017) 11, 13, 14

Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.,
853 F.3d 1272, 1286 (Fed. Cir. 2017) 3, 10

STATUTES

35 U.S.C. § 312(a)(3) 1, 4, 8

OTHER AUTHORITIES

Patent Trial & Appeal Board Trial Practice Guide § I 4

I. INTRODUCTION

An IPR petition must identify "with particularity ... the grounds on which the challenge to each claim is based." 35 U.S.C. § 312(a)(3). The Petition's Mishra-based Ground 3[1] failed to establish the challenged claims unpatentable because, as Board explained, "the preponderance of the evidence does not support the field plate of Mishra's Figure 5 being a second gate, as Petitioner argues in the Petition." FWD 19. "In the Reply, Petitioner abandon[ed] its argument ... in favor of a new position," that a POSA "would have found it obvious to connect the field plate of Mishra's Figure 5 to the source instead of the gate, converting the field plate into a second gate." *Id*. The Board held: "Petitioner's change of arguments here is inappropriate." *Id*. Petitioner now asks the Director to step in to excuse its fatally deficient Petition by creating precedent to establish a so-called "***holistic obviousness ground.***"[2] Request 8. That is, Petitioner urges a trial system in which the goal posts may be moved as necessary to thwart the arguments of the Patent Owner. There is no such creature as a "holistic obviousness ground"—indeed, the IPR statute and agency's regulations are to the exact contrary. The Director should reject Petitioner's invitation to transform IPR trial practices into an exercise in attorney improvisation.

---

[1] Petitioner does not seek review of Grounds 1 and 2, only Ground 3.

[2] Emphasis added unless otherwise noted.

The Petition's Ground 3 originally rested entirely on the theory that the field plate 66 of Mishra's Figure 5 is a second gate. The Petition did not propose modifying Figure 5 to connect field plate 66 to the source. The improvised theory Petitioner now urges on rehearing, that a POSA would have rewired the field plate to the source, improperly appeared for the first time in its Reply Brief. The Director should deny the Request on that basis alone. But even if the Director were to conclude that the Petition proposed such a modification, the Request should still be denied for an independent reason: Petitioner has nowhere provided an articulable rationale explaining why a POSA would have made such a modification.

II. THE BOARD DID NOT ABUSE ITS DISCRETION FINDING THAT THE PETITION NEVER PROPOSED MODIFYING MISHRA'S FIGURE 5 TO CONNECT FIELD PLATE 66 TO THE SOURCE

The Board correctly found that Ground 3 rested on a single theory, that Mishra's Figure 5 structure discloses a dual-gate transistor where "'Mishra's field plate 66 ***is***' the recited second gate." FWD 18, quoting Pet. 93–95. But Petitioner later admitted in Reply that "Figure 5 depicts a single transistor with one gate," not two. FWD 18, quoting Reply 22. Petitioner's Request does not dispute that Mishra's Figure 5 is a transistor with a single gate, not two as the Petition alleged.

Mishra Figure 5 (Annotated, POR 8)

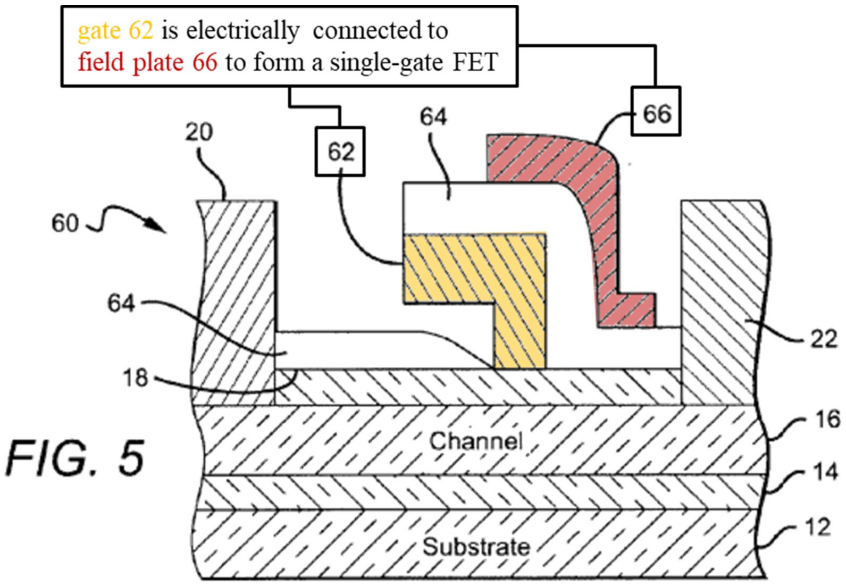

FIG. 5

See FWD 18, citing Ex. 1009 ¶ 44 ("field plate 66 can be connected to the gate 62 in many different ways"); Ex. 2004 ¶ 157 ("Mishra never describes Figure 5 as having ... a connection" between field plate 66 and the source); Ex. 2009, 150:16–20 (Mishra is "not telling us that the field plate is also a gate").

The Board further found that "Petitioner abandon[ed] its argument that the field plate of Mishra's Figure 5 is a second gate in favor of a new position" that a POSA "would have found it obvious to connect the field plate of Mishra's Figure 5 to the source instead of the gate, converting the field plate into a second gate." FWD 19. The Board then declined to consider that new theory because it was not made in the petition as was required. *Id*., citing *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc*., 853 F.3d 1272, 1286 (Fed. Cir. 2017) (introducing "an entirely new theory of prima facie obviousness absent from the petition" in the reply "is

foreclosed by statute, our precedent, and Board guidelines"). *See also* 35 U.S.C. § 312(a)(3) (petitions must identify "with particularity ... the grounds on which the challenge to each claim is based"); TPG § I ("Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability").

Petitioner's Request does not dispute that new theories of invalidity presented for the first time in reply are inappropriate and should be discarded. Rather, Petitioner argues that "***[f]rom the outset***, the Petition reasoned it would have been obvious to electrically connect field plate 66 to the source electrode, instead of the gate." Request 2. Petitioner cites the Petition at pages 82–86 and 94–95, but neither passage supports Petitioner's assertion. The argument that a POSA would have modified Mishra's Figure 5 transistor to connect field plate 66 to the source is entirely absent from the Petition, reason alone to deny Petitioner's Request.

A. The Petition at Pages 82–86 Proposes Implementing Gate Operating Modes, Not Rewiring Field Plate 66 to the Source

Pages 82–86 of the Petition set out the motivation to combine Mishra and Ren. It proposes implementing the first stage of a cascode as enhancement mode and then second stage as depletion mode. It nowhere proposes disconnecting Figure 5's field plate 66 from the gate and reconnecting it to the source.

The Petition begins by describing Mishra's implementation of individual single-gate "GaN HEMTs in cascodes," where the first transistor is "connected in common source configuration" and the second field-plated transistor is "connected in common gate configuration," noting that the "field plates" of the second transistor may be "differently shaped." Pet. 82–83. That a field plate may be "differently shaped" says nothing about where it is electrically connected; Petitioner does not contend otherwise.

The Petition next alleges that Mishra's Figure 5 embodiment is a dual-gate transistor that combines a common source gate with a common gate as part of a single structure. *Id*. at 83 ("Mishra discloses biasing the cascode's source side gate (e.g., gate 62, Figure 5) at lower voltage and the drain side gate (e.g., field plate 66, Figure 5) at higher voltage"). Setting aside the fact that Petitioner later admitted this characterization was wrong ("Figure 5 depicts a single transistor with one gate," not two, FWD 18, quoting Reply 22), this passage says nothing about disconnecting field plate 66 from the gate and rewiring it to the source. It proposes no change to Figure 5 at all. It is a statement about what Mishra purportedly shows, not a proposal to modify Mishra's Figure 5.

The remainder of pages 84–86 contain no proposal to connect the field plate 66 to the source either. The only proposal in those pages is using Ren's technique of adjusting AlGaN thickness to make a first gate (Q1) enhancement mode and the

second gate (Q2) depletion mode. Pet. 83–84 ("Mishra does not explicitly comment on the mode in which Q1 operates, but a POSITA would have found enhancement mode obvious," resulting "[i]n Mishra's first stage enhancement and second stage depletion mode implementation."), 85–86 ("A POSITA would have used Ren's simple techniques to make Mishra's first gate enhancement mode and second gate depletion mode."). That proposal to change the operating mode of a transistor's gate depends on the thickness of the "'gate dielectric' layer between the gate metal contact and underlying AlGaN barrier layer," not the gate's electrical connection. *Id.* 86. Nowhere in pages 82–86 does the Petition propose connecting field plate 66 to the source, and nowhere does it supply the phrase Petitioner's Request now attributes to it, that a POSA would "wir[e] field plate 66 to the source, just as Figure 10 illustrates." Request 2.

B. The Petition at Pages 94–95 Attempts to Map the Mishra-Ren Combination to Limitation [1C5], Proposing No Further Modification

Pages 94–95 map the earlier Mishra-Ren combination to limitation [1C5] "[u]nder Infineon's apparent infringement theory,"[3] proposing no additional

[3] Just because Petitioner's infringing product has a second gate that comprises a field plate does not mean that Mishra Figure 5's field plate acts as a gate, even if it were connected to the source, and not connected to the gate 62 as Mishra teaches.

modification to Figure 5. Petitioner argues that the Petition's statement, "[w]hen implemented in a cascode, field plate 66 is coupled to ground," "expressly offered" an "integrated obviousness rationale" that a POSA would disconnect field plate 66 from gate 62 and reconnect it "to the source." Request 2. That phrase cannot bear the weight Petitioner places on it.

First, the phrase describes nothing more than the Mishra-Ren combination the Petition had previously presented at pages 82–86. That combination wrongly presumed Mishra's Figure 5 transistor had two gates and then proposed implementing the first gate (Q1) in enhancement mode and a second gate (Q2) in depletion mode. Pet. 83–86. The Petition's discussion at pages 94-95 simply carries that same false presumption forward and maps it to the claim. Thus, when the Petition says field plate 66 is "coupled to ground" "[w]hen implemented in a cascode," it simply describes Mishra's Figure 10 cascode, in which the depletion-mode second-stage gate is coupled to ground (Ex. 1009 ¶ 58, Fig. 10), and applies that arrangement to the Petition's false assumption that Figure 5 had two gates. The Petition re-alleges the arrangement it already proposed; it does not propose a new one.

Moreover, the phrase "[w]hen implemented in a cascode, field plate 66 is coupled to ground" "expressly" says nothing about disconnecting field plate 66 from the gate 62 and then reconnecting it to the source as alleged in the Reply for

the first time. Recall that Mishra discloses that "field plate 66 in Figure 5 is connected to the gate, not to the source." FWD 18, citing Ex. 1009 ¶ 44 ("field plate 66 can be connected to the gate 62 in many different ways"). Thus, had Petitioner intended to allege that a POSA would have modified that existing connection, disconnecting field plate 66 from gate 62 and reconnecting it independently to the source, the statute required Petitioner to set that out "with particularity." 35 U.S.C. § 312(a)(3). A general statement that field plate 66 is "coupled to ground" when "implemented in a cascode" does not spell out any such modification, and it cannot be read to have proposed one as a "holistic obviousness ground."

Indeed, the Board analyzed these very pages and reached the same (correct) conclusion. It found that the Petition, at pages 93–95, unambiguously advanced the theory that "'Mishra's field plate 66 ***is***' the recited second gate." FWD 18, citing Pet. 93–95. The Board then correctly found that the evidence did not support that theory, because Mishra discloses field plate 66 connected to the gate, not the source, and therefore does not disclose a second gate at all. FWD 18–19, citing Ex. 1009 ¶ 44; Ex. 2004 ¶ 157; Ex. 2009, 150:16–20. Pages 94–95 thus confirm the Board's finding rather than undermine it. The Petition mapped field plate 66 as disclosed onto the claim, on the false assumption that it already was a second,

independent gate from gate 62, and never proposed the modification Petitioner now advances.

C. The Reply Pivoted to a Different Theory Absent from the Petition

The Reply conceded the Petition's assumption about Mishra's Figure 5 structure was wrong, that "Figure 5 depicts a single transistor amplifier with one gate" (Reply 22) not two as originally alleged (Pet. 83, equating "drain side gate" with "field plate 66, Figure 5"). FWD 19. That concession abandoned the premise on which the Petition's theory depended, that field plate 66 already was a second gate. The Reply then advanced the modification theory in terms the Petition never used, arguing that "[b]y connecting Mishra's field plate to source, which Mishra teaches, makes a dual gate device that has the claimed second gate." Reply 22–23. As explained *infra*, connecting the field plate to the source to create a second gate is the very argument the Petition does not contain. The Reply also introduced the "no reason is needed" contention on which Petitioner further fell back on , asserting that "Mishra's unqualified alternative to implement dual gate structures applies to all embodiments," such that "[n]o 'reason' is needed for specifically 'selecting' Figure 5." Reply 24. Again, none of this appears in the Petition.

The Board therefore had it exactly right: the Petition advanced the theory that Mishra's Figure 5 already had two gates, the Reply abandoned it and advanced a new modification theory, and that new theory could not be introduced for the first

time on reply. FWD 18–19; *Wasica*, 853 F.3d at 1286. The Director should decline to disturb the Board's well-reasoned judgment for this reason alone.

III. THE BOARD REQUIRED NOTHING MORE THAN A REASON FOR THE MODIFICATION, WHICH PETITIONER NEVER SUPPLIED

Even if the Director were to conclude that the Petition somehow proposed modifying Mishra's Figure 5 to connect field plate 66 to the source, and it did not, Petitioner's Request should still be denied for the independent reason that neither the Petition, nor the Reply, nor the Request ever has supplied a reason a POSA would have made that modification.

Petitioner contends that the Board "improperly demanded express disclosure of a source-connected field plate and required a motivation beyond Mishra's explicit cascode teachings." Request 6. The Board did neither. The Board made the unremarkable observation that Mishra's Figure 5 does not disclose a source-connected field plate, and held that, absent such a disclosure, the Petition needed to supply a reason a POSA would modify Figure 5 to create one. FWD 19–20. That is a straightforward application of settled obviousness law, not the heightened demand Petitioner describes, and Petitioner never provided the reason that the law demands. Now, Petitioner retreats to a further fallback position that somehow the Board should have divined such reasoning and mapping in furtherance of a "holistic obviousness ground."

A. The Board Applied the Correct Legal Standard, Not a Heightened One

The Board did not "requir[e] Mishra to expressly state that Figure 5 has a source-connected field plate" as Petitioner alleges. Request 7. Rather, the Board read Mishra's teachings and concluded that while Mishra disclosed "a field plate may be electrically connected to the source," Mishra "does not state that this teaching applies to the embodiment of Figure 5." FWD 19. The Board then explained that, given Mishra does not expressly disclose connecting Figure 5's field plate to the source, Petitioner's argument "relies on a person of ordinary skill in the art modifying the Figure 5 embodiment of Mishra to connect the field plate to the source rather than the gate." *Id*. 20. The Board then applied the correct legal standard, stating that when "combining multiple embodiments from a single reference," as Petitioner did, "there must be a motivation to make the combination and a reasonable expectation that such a combination would be successful." FWD 19-20, quoting *In re Stepan Co.*, 868 F.3d 1342, 1346 n.1 (Fed. Cir. 2017).

While the Board (correctly) concluded that "Petitioner does not, however, show that a person of ordinary skill in the art would have had a motivation to make this modification or a reasonable expectation that this combination would be successful," that factual finding does not mean that the Board applied a heightened legal standard as Petitioner argues. The Board did not demand that Mishra

expressly disclose the source-connection modification for Figure 5. It demanded a reason to make such a modification, a reason that remains unknown.

B. No Reason to Modify Figure 5 Appears in the Mishra, Petition, the Reply, or the Request

The reason the Board found no motivation is that Petitioner never identified one—not in Mishra, the Petition, the Reply, or even in the present Request.

Starting with Mishra itself, because Petitioner insists the reason is found in Mishra and that the Board failed to read the reference "as a whole" (Request 7), Mishra never suggests modifying Figure 5 to connect its field plate to the source. Mishra discloses, and the Board properly found, that Figure 5's field plate 66 is connected to the gate 62, not the source. FWD 18, citing Ex. 1009 ¶ 44 ("field plate 66 can be connected to the gate 62 in many different ways"). Mishra discloses, separately, that in "still other embodiments the field [plate] can be connected to the source contact."[4] Ex. 1009 ¶ 29; see also id. ¶ 53 ("Other transistors can have a field plate that is coupled to the source contact"), ¶ 63 (field plates "can be connected to the source contact in many different ways"). But Mishra never connects these disclosures. It never says that the source connection of paragraphs 29, 53, and 63 should be applied to Figure 5, and it never says that the dual-gate arrangement of paragraph 62 is achieved by rewiring Figure 5's field

[4] The quote fixes a typo that Petitioner does not dispute. *See* POR 43.

plate to the source. To the contrary, the only connection Mishra discloses for Figure 5's field plate is to the gate. *Id*. ¶ 44. Reading Mishra in its entirety therefore supplies no reason to make the modification. What Petitioner appears to be arguing is that the Board had a duty to find a way to make its new arguments work. But "[a] petitioner may not rely on a vague, generic, and/or meandering petition and later fault the Board for failing to understand what the petition really meant." *Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371, 1377 (Fed. Cir. 2023).

Nor did Petitioner ever supply the missing reasoning elsewhere. The Petition offered no reason because, as explained in Section II, it never proposed the modification in the first place. The Reply, having advanced the modification for the first time, offered no reason either. Its position was that none was required, asserting that "Mishra's unqualified alternative to implement dual gate structures applies to all embodiments," such that "[n]o 'reason' is needed for specifically 'selecting' Figure 5." Reply 24. But that assertion is both legally and factually wrong. Legally, a petitioner must identify a reason a POSA would have made the modification, and cannot discharge that burden by declaring it inapplicable. FWD 19–20; *In re Stepan*, 868 F.3d at 1346 n.1. Factually, Mishra's alternative is not "unqualified" and does not "appl[y] to all embodiments," because none of Mishra's source-connected field plate disclosures suggests applying that

connection to any other embodiment, including Figure 5. The premise on which the Reply dispensed with any reason is simply untrue.

The Request does not fill the gap. Petitioner continues to assert that Mishra "expressly teaches" the modification, Request 7, but it still identifies no passage of Mishra supplying a reason a POSA would rewire Figure 5's field plate to the source. Pointing again to Mishra's general statements that a field plate may, in some other embodiment, be connected to the source does not explain why a POSA would make that change to Figure 5, whose field plate Mishra discloses as connected to the gate. An express teaching the reference does not contain cannot substitute for the reasoned explanation obviousness requires.

This absence is fatal under the applicable legal standard, which the Board faithfully applied. Petitioner's theory takes the source-connection teaching Mishra confines to "other embodiments" (paragraphs 29, 53, 63) and the dual-gate arrangement Mishra lists as one alternative (paragraph 62), and combines them with Figure 5 to manufacture a source-connected second gate. Combining "multiple embodiments from a single reference" still "require[s] a motivation to make the combination and a reasonable expectation that such a combination would be successful." *In re Stepan*, 868 F.3d at 1346 n.1. Listing embodiments in one reference does not make their combination obvious. A reason was still required, and Petitioner supplies none.

Accordingly, even if the Director were to reach the merits of the belated modification theory, Petitioner has supplied no reason a POSA would have made the proffered modification. This is an independent reason the Director should deny Petitioner's Request.

IV. CONCLUSION

For the foregoing reasons, Patent Owner respectfully requests that the Director deny Petitioner's Request for Director Review and leave undisturbed the Board's well-reasoned judgment that the challenged claims are patentable.

Respectfully submitted,

Date: July 21, 2026

/Scott A. McKeown/
Scott A. McKeown, Reg. No. 42,866

CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (e)(4)

I certify that on July 21, 2026, a copy of the foregoing document, including any exhibits filed therewith, is being served via electronic mail, as previously consented to by Petitioner, upon the following:

Lionel M. Lavenue	lionel.lavenue@finnegan.com
Kara Specht	Kara.Specht@finnegan.com
Cory C. Bell	cory.bell@finnegan.com
Umber Aggarwal	umber.aggarwal@finnegan.com
Deanna Smiley	deanna.smiley@finnegan.com
Shannon Yi	shannon.yi@finnegan.com
Luke H. MacDonald	luke.macdonald@finnegan.com
Carlos E. Duarte-Guevara	carlos.duarte-guevara@finnegan.com
	Innoscience-Infineon-IPR@finnegan.com

Date: July 21, 2026

/MacAulay Rush/
MacAulay Rush
Paralegal
WOLF, GREENFIELD & SACKS, P.C.