

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INNOSCIENCE (ZHUHAI) TECHNOLOGY COMPANY, LTD.,
AND
INNOSCIENCE AMERICA, INC.,
Petitioner,

v.

EFFICIENT POWER CONVERSION CORPORATION,
Patent Owner.

IPR2023-01382
U.S. Patent 9,748,347

PETITIONER'S REQUEST FOR DIRECTOR REVIEW

TABLE OF CONTENTS

I.	The Prior Art Disclosed—and the ’347 Patent Admitted—That Gate Structures Meeting the Claims Were Known.....	1
II.	Error 1: The Board Adopted an Implausible Reading of <i>Saxler</i> to Wrongly Conclude It Does Not Disclose a Non-Recessed Version of Figure 1A.	3
III.	Error 2: The Board Wrongly Required an Additional Reason to Modify Figure 1A Beyond <i>Saxler</i> ’s Express Teaching to Do So.	7
IV.	Error 3: The Board Erroneously Overlooked the Petition’s Additional Reason to Modify Saxler’s Figure 1A: To Achieve the Undisputed Benefits of Enhancement Mode.	8
V.	Conclusion: The Director Should Reverse and Remand.....	10

***Emphasis added herein unless otherwise noted**

TABLE OF AUTHORITIES

Cases

<i>AMP Plus, Inc. v. DMF, Inc.</i> , No. 2021-1595, 2022 WL 16844516 (Fed. Cir. Nov. 9, 2022)	9
<i>B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.</i> , 72 F.3d 1577 (Fed. Cir. 1998)	7
<i>Belden Inc. v. Berk-Tek LLC</i> , 805 F.3d 1064 (Fed. Cir. 2015)	5, 6
<i>Boston Sci. Scimed, Inc. v. Cordis Corp.</i> , 554 F.3d 982 (Fed. Cir. 2009)	8
<i>Donner Tech. v. Pro Stage Gear, LLC</i> , 979 F.3d 1353 (Fed. Cir. 2020)	9
<i>Fresenius USA Inc. v. Baxter Int’l, Inc.</i> , 582 F.3d 1288 (Fed. Cir. 2009)	7
<i>In re Hodges</i> , 882 F.3d 1107 (Fed. Cir. 2018)	6
<i>Intel Corp. v. Qualcomm Corp.</i> , No. 2022-2092, 2022 WL 880681 (Fed Cir. Mar. 24, 2022)	9
<i>KSR Int’l Co. v. Teleflex, Inc.</i> , 550 U.S. 398 (2007).....	7
<i>Owens Corning v. Fast Felt Corp.</i> , 873 F.3d 896 (Fed. Cir. 2017).	4, 6
<i>Provisur Techs., Inc. v. Weber, Inc.</i> , 50 F.4th 117 (Fed. Cir. 2022)	9
<i>Recor Med. Inc. v. Medtronic Ir. Mfg. Unlimited, Co.</i> , 2023-2251, 2025 WL 944511 (Fed. Cir. Mar. 27, 2015)	5, 8

Sound View Innovations, LLC v. Hulu, LLC,
818 Fed. App'x. 1009 (Fed. Cir. 2020) 7

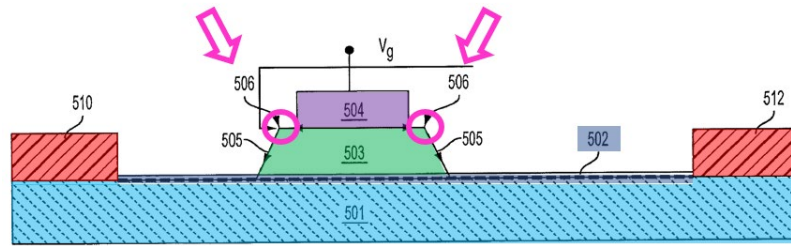
Trend Micro Inc., v. CUPP Computing AS,
No. 2020-2237, 2022 WL 1436617 (Fed. Cir. Oct. 25, 2022) 7

The Board erred when it found the challenged claims nonobvious over the combination of *Saxler* and *Ahn*. In doing so, the Board made three, independent errors: the Board (i) adopted an implausible reading of *Saxler* that effectively deletes part of the reference, (ii) required an additional reason to make a modification beyond *Saxler*'s express teaching to do so, and (iii) overlooked that there was another reason to remove the recess—to achieve the undisputed benefits of enhancement mode. Paper No. 31 (“FWD”), 27-31, 42. Each error merits reversal.

I. The Prior Art Disclosed—and the '347 Patent Admitted—that Gate Structures Meeting the Claims Were Known.

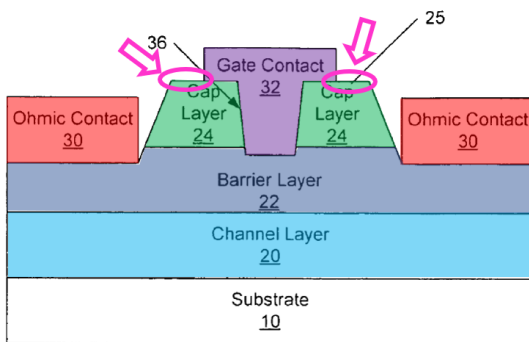
The Board found the claims nonobvious over *Saxler* and *Ahn* because it concluded that it would not have been obvious to remove a recess from a gate structure. FWD, 27-31, 42. But that conclusion not only conflicts with what the challenged patent admitted was prior art but also erases *Saxler*'s paragraph [0052].

The patent admitted that a **p-GaN capping layer** without a gate recess was known. Ex-1001, Figs. claims 1-2, 3A-3B. The patent also admitted prior art transistors contained a **GaN channel**, an **AlGaN barrier**, a **p-type GaN gate material** with sloped sidewalls, and a **gate metal** between **source** and **drain**. Ex-1001, 1:19-2:25, Figs. 1-2, 3A-3B, claims 1-3; Ex-1003 (“Shealy Decl.”), ¶¶ [044]-[046]; Paper No. 1 (“Pet.”), 1-2. The patent purports to invent just one feature—forming a pair of horizontal **ledges** on its **p-GaN**. Pet., 1-2. Yet its own priority application admitted even this feature was known. Ex-1011, Fig. 1 (prior art ledges).

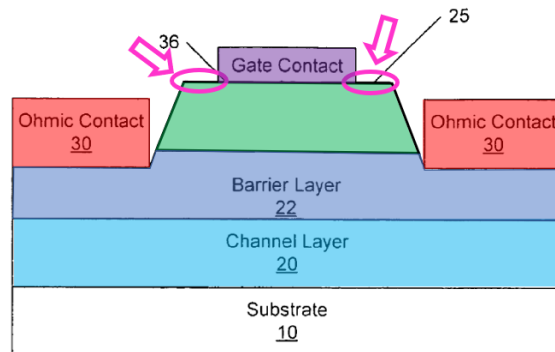


Ex. 1001, Fig. 5 (annotated).

Saxler itself unambiguously disclosed a modification to remove the gate recess of Figure 1A, as the Petition proposed. *Saxler*, ¶ [0052]. The *Saxler-Ahn* combination only modified *Saxler*'s device in Figure 1A to remove that recess. *Saxler* illustrated the examples of “**Figures 1A through 6**” with “a recessed gate structure or a non-recessed gate structure, [but] other embodiments of the present invention **may include or not include a gate recess.**” *Id.*



***Saxler*, Fig. 1A (annotated).**



***Saxler*, Fig. 1A (modified).**

Yet somehow, the Board still found it nonobvious to remove the recess from Figure 1A. And, in making that finding, the Board made three reversible errors.

II. Error 1: The Board Adopted an Implausible Reading of *Saxler* to Wrongly Conclude It Does Not Disclose a Non-Recessed Version of Figure 1A.

The Board predicated its finding that the claims are not obvious over *Saxler* and *Ahn* (Ground 3) on the erroneous determination that “*Saxler* does not disclose an embodiment with a non-recessed gate and sloped sidewalls.” FWD, 27, 42.¹ This misreading of *Saxler* effectively erases paragraph [0052].

The Board is plainly wrong that *Saxler* does not disclose or suggest a non-recessed version of Figure 1A. *Saxler* explicitly discloses this modification because it not only describes every gate recess in every figure as optional but also expressly calls out modifying Figure 1A’s gate recess in paragraph [0052]:

Exemplary devices according to some embodiments of the present invention are schematically illustrated **in FIGS. 1A** through 6. Thus, while embodiments of the present invention are described herein with reference to a recessed gate structure or a non-recessed gate structure, other

¹ The Board recognized the Petition “use[s] *Saxler*’s non-recessed stacked gate structure (Modified Figure 1A) as a starting point for its unpatentability arguments.” And it hinged its nonobviousness finding on its earlier conclusion that *Saxler* did not disclose or suggest modified Figure 1A. FWD, 42.

embodiments of the present invention **may include or not include a gate recess. . . .**

Saxler, ¶ [0052].

This paragraph teaches to remove recesses in figures that have them (Fig. 1A) and to add recesses in figures that do not (Fig. 1B). That is only the plausible reading that breaths any life into paragraph [0052]. The paragraph both (i) describes Figure 1A as an example embodiment and (ii) explains how to modify it: “while embodiments . . . are described herein with reference to a recessed gate structure . . . other embodiments . . . may not include . . . a gate recess.” *Id.* So *Saxler* expressly tells a POSITA that its invention includes a version of Figure 1A with the recess removed. And this was all laid out in the Petition. Pet., 25, 40, 45; Shealy Decl., ¶¶ [0081], [111], [122]; Ex-2004 (Shealy Dep. Tr.), 31:11-20; Paper No. 19 (“Reply”), 3-7. The Board’s contrary finding should be reversed because it contradicts the “one permissible factual finding” on paragraph [0052]. *Owens Corning v. Fast Felt Corp.*, 873 F.3d 896, 901-03 (Fed. Cir. 2017).

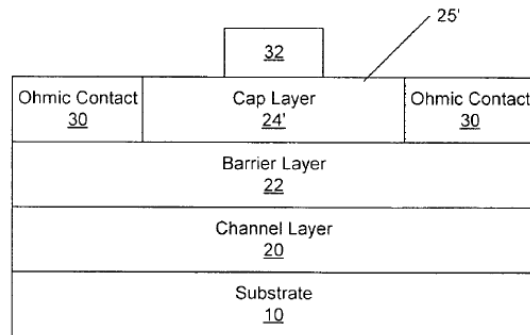
The Board initially got this right. At Institution, the Board agreed Figure 1A’s recess was optional. Institution Decision, 29-30. The Board logically found “*Saxler* at least suggests a stacked gate structure having a gate contact and cap layer without a recess, as depicted in modified Figure 1A of *Saxler*.” *Id.* But in the Final Written Decision the Board flipped its interpretation. FWD, 27-29.

The Board erroneously credited Patent Owner’s arguments that *Saxler* limited itself to two distinct embodiments, one with a gate recess (Fig. 1A) and one without (Fig. 1B). FWD, 29 (asserting Figure 1B “cuts against” modification to Figure 1A); Paper No. 17 (“POR”), 11-12, 23-28; Ex. 2005, ¶¶81-104.² Patent Owner relied on expert testimony that paragraph [0052] does not mean what it says because it was “written by a patent attorney.” Ex. 2005, ¶101. But Paragraph [0052] is no vague “catch-all” as Patent Owner’s expert contended. *Id.* It discloses a single, narrow modification: adding or removing a gate recess from *Saxler*’s figures. *Saxler*, ¶ [0052].

Regardless, this argument against paragraph [0052] ignores the law. Patent Owner cites no case law to support its theory that paragraph [0052] can be ignored. POR, 23-28. This is because the case law says the opposite: prior art must be considered “for everything it teaches.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1075-76 (Fed. Cir. 2015); *Recor Med. Inc. v. Medtronic Ir. Mfg. Unlimited, Co.*, 2023-2251, 2025 WL 944511, at *2-3 (Fed. Cir. Mar. 27, 2015) (Board legally erred

² Patent Owner also disputed whether the device of modified Figure 1A was operable. POR, 28-34; Reply, 7-12; Paper No. 21 (“Sur-Reply”), 9-11. But the Board did not address that argument, so it is not relevant to the present request for review. FWD, 23 n.12.

in dismissing reference’s broad teachings to modify specific embodiments). The Board cannot disregard a disclosure just because it differs from embodiments illustrated in figures. *Belden*, 805 F.3d at 1075-76 (Board erred by disregarding disclosed insulation-independent wire alignment when figures only showed bare metal wires). So it is irrelevant that *Saxler* discloses the non-recessed embodiment of Figure 1B when paragraph [0052] instructs the reader that every gate recess is optional.



***Saxler*, Fig. 1B.**

Reversal is appropriate where, as here, the record contains “only one possible evidence-supported finding”: *Saxler* discloses the recess of Figure 1A is optional. *Corning*, 873 F.3d at 901-03. The Federal Circuit has repeatedly reversed Board determinations where “the only permissible finding that can be drawn from [the prior art reference]” contradicted the Board’s conclusions. *In re Hodges*, 882 F.3d 1107, 1113-14 & n.7 (Fed. Cir. 2018); *Corning*, 873 F.3d at 901-03; *Trend Micro Inc., v. CUPP Computing AS*, No. 2020-2237, 2022 WL 1436617, at *4 (Fed. Cir. Oct. 25,

2022) (reversing “where the evidence presented could not reasonably support” the Board’s reading of a reference). The Director should do the same here.

III. Error 2: The Board Wrongly Required an Additional Reason to Modify Figure 1A Beyond *Saxler*’s Express Teaching to Do So.

When a reference teaches a modification, a POSITA needs no other reason to implement that modification. *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582-83 (Fed. Cir. 1998) (upholding single-reference obviousness when reference “itself provided the suggestion” to modify). An explicit **teaching**, suggestion, or motivation in a reference is a strong obviousness rationale under the law. *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-422 (2007) (overly narrow “teaching, suggestion, motivation” test “helpful” even if not necessary to show obviousness). Paragraph [0052] of *Saxler* provides both a motivation and a reasonable expectation of success by teaching that embodiments shown with a recess may be implemented without a recess. *Fresenius USA Inc. v. Baxter Int’l, Inc.*, 582 F.3d 1288, 1301-02 (Fed. Cir. 2009) (“explicit suggestion” in prior art publication motivated modification); *Sound View Innovations, LLC v. Hulu, LLC*, 818 Fed. App’x. 1009, 1012-13 (Fed. Cir. 2020) (express disclosure provided reasonable expectation of success in single reference obviousness ground). So the Board erred when it required any further reason to eliminate the recess of Figure 1A beyond *Saxler*’s express teaching to do so in paragraph [0052]. FWD, 27-29.

Without citing any caselaw, the Board reasoned that Figure 1B already depicted a non-recessed embodiment, so a POSITA needed an additional reason to remove the recess of Figure 1A beyond the express disclosure of paragraph [0052]. *Id.* This justification is a non-starter when paragraph [0052] describes every recess in every figure as optional. As discussed above, ignoring that disclosure is legally improper. *Recor*, 2025 WL 944511, at *2-3 (Fed. Cir. Mar. 27, 2015). And “[c]ombining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness” when there is a reason to do so, which *Saxler* at paragraph [0052] provides. *Boston Sci. Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009). That is especially true when *Saxler* discloses overlapping ranges for the relevant parameters of its recessed and non-recessed embodiments. Reply, 4, 20. Rather than precluding the modification to Figure 1A, Figure 1B makes the modification even more obvious. It certainly does not impose a need for further justification to modify Figure 1A beyond paragraph [0052].

IV. Error 3: The Board Erroneously Overlooked the Petition’s Additional Reason to Modify Saxler’s Figure 1A: To Achieve the Undisputed Benefits of Enhancement Mode.

Even if the Petition needed another reason to modify Figure 1A beyond *Saxler*’s explicit teaching in paragraph [0052] (it did not), the Board incorrectly stated that the Petition provided no such reason. FWD, 27-28. The Petition and Dr. Shealy argued a POSITA would have removed Figure 1A’s recess to “realiz[e] the

benefits” of enhancement mode. Petition, 55-56; Shealy Decl., ¶¶ [103], [146]-[148]; Reply, 3-7. And although the Board cites the exact pages where the Petition makes that statement, the Board declared “*the Petition makes no argument that a POSITA would have removed the recess from Saxler Figure 1A to realize the benefits of an enhancement mode transistor.*” FWD, 28 (citing Petition, 24-68) (emphasis original). But it was there, the Board just overlooked it. Petition, 55-56.

This apparent oversight requires at least remanding the Board’s decision for consideration of that argument. *Provisur Techs., Inc. v. Weber, Inc.*, 50 F.4th 117, 121, 123-124 (Fed. Cir. 2022) (remanding because “the Board’s analysis does not explicitly address [the party’s] arguments or even implicitly explain how the [limitation is met] in a way that fairly contemplates and resolves those arguments.”); *Donner Tech. v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1359 (Fed. Cir. 2020) (“Given the Board’s mistaken assertion” that a party did not provide arguments and expert testimony on an issue, “it is unclear whether the Board meaningfully considered all of [the party’s] arguments and evidence.”); *AMP Plus, Inc. v. DMF, Inc.*, No. 2021-1595, 2022 WL 16844516, at *3 (Fed. Cir. Nov. 9, 2022) (vacating and remanding for arguments not considered). Yet a remand is not needed here regarding the motivation because the overlooked arguments were undisputed. *Intel Corp. v. Qualcomm Corp.*, No. 2022-2092, 2022 WL 880681, at *4 (Fed Cir. Mar. 24, 2022) (reversing where “the evidence of record clearly shows a skilled artisan would have

been motivated to achieve the [undisputed] benefits.”). Patent Owner never contested that a POSITA would have been motivated to achieve the benefits of enhancement mode, only whether the device was operable when the recess was removed. POR, 28-34. The Board’s decision that modified Figure 1A was not obvious should be reversed for this additional reason.

V. Conclusion: The Director Should Reverse and Remand.

Petitioner respectfully requests the Director reverse the Board’s erroneous finding that *Saxler* did not disclose or at least render obvious modified Figure 1A and remand for further proceedings on arguments the Board did not address regarding *Saxler* in view of *Ahn*.

Dated: April 24, 2025

/Lionel M. Lavenue/
Lionel M. Lavenue (Reg. No. 46,859)
Counsel for Petitioner

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing **Petitioner's Request for Director Review** was served on April 24, 2025, via email directed to counsel of record for the Patent Owner at the following:

Walter D. Davis, Jr.
walter.davis@blankrome.com

Dipu Doshi
dipu.doshi@blankrome.com

Mark Mashack
mark.mashack@blankrome.com

Stephen Soffen
stephen.soffen@blankrome.com

Cory R. Edwards
cory.edwards@blankrome.com

Ameya V. Paradkar
arun.paradkar@blankrome.com

Jonathan England
jonathan.england@blankrome.com

EPCC-Inno-IPRS@blankrome.com

Dated: April 24, 2025

By: /Lisa C. Hines/
Lisa C. Hines
Case Manager
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP