

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

IN RE: X-FAB SEMICONDUCTOR FOUNDRIES
GMBH,
Appellant

2024-1337

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. 15/648,728.

Decided: October 22, 2025

ELANA ARAJ, Greenberg Traurig LLP, New York, NY,
argued for appellant. Also represented by ROBERT A. KING,
TRENTON A. WARD, Atlanta, GA.

MONICA BARNES LATEEF, Office of the Solicitor, United
States Patent and Trademark Office, Alexandria, VA, ar-
gued for appellee John A. Squires. Also represented by
ROBERT MCBRIDE.

Before MOORE, *Chief Judge*, DYK and CUNNINGHAM,
Circuit Judges.

MOORE, *Chief Judge*.

X-Fab Semiconductor Foundries GmbH (X-Fab) appeals a decision of the Patent Trial and Appeal Board (Board) affirming an examiner's rejection of certain claims of U.S. Patent Application No. 15/648,728 as obvious. Because X-Fab forfeited the arguments it raises on appeal, we *affirm* the Board's decision.

BACKGROUND

The '728 application discloses carrier substrates used to manufacture semiconductor components, which are transferred from the carrier substrate to integrated circuits. J.A. 187. The carrier substrate has (1) an active region and (2) trench isolation regions including dielectric material formed by local oxidation of the carrier substrate's semiconductor material. J.A. 192. Claim 1 is representative:

1. A method for producing semiconductor structures on a carrier substrate, suitable to be transferred from the carrier substrate, the method comprising:

providing a carrier substrate comprising a semiconductor material with a first crystal orientation;

producing an *active region* having an exposed semiconductor surface and is almost completely delimited by *trench isolation regions comprising an isolating dielectric material formed by local oxidation of the semiconductor material of the carrier substrate*;

forming a semiconductor structure by depositing at least one semiconductor layer on the active region;

removing at least a portion of the dielectric material;

performing an etching to remove semiconductor material beneath the semiconductor structure to enable the semiconductor structure to be transferred from the carrier substrate.

The Board affirmed the examiner's rejection of claims 1, 4–7, 12, 13, and 23–29 based on Nakahata¹ and Whiston² and entered a new ground of rejection of claims 14–17 based on the same combination. J.A. 2–13. The Board also affirmed the examiner's rejection of claims 8–11 based on various combinations of Nakahata, Whiston, and additional prior art references. J.A. 10–12. X-Fab appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

We review the Board's legal determinations *de novo* and its underlying factual findings for substantial evidence. *In re Constr. Equip. Co.*, 665 F.3d 1254, 1255 (Fed. Cir. 2011). What a reference teaches and whether a skilled artisan would be motivated to combine references are questions of fact we review for substantial evidence. *Id.*

X-Fab argues the Board erred in determining claim 1 would have been obvious over the Nakahata-Whiston combination. X-Fab Br. 19–22. Specifically, X-Fab argues the Board's finding that Whiston's LOCAl Oxidation of Silicon (LOCOS) regions are trench isolation regions that would extend into Nakahata's substrate was not supported by substantial evidence because the portions of Nakahata the Board cited did not disclose a silicon starting substrate. *See id.* at 20–22. This argument is forfeited because X-Fab failed to raise it before the Board, and “we do not consider such forfeited arguments on appeal.” *Schwendimann v. Neenah, Inc.*, 82 F.4th 1371, 1381 (Fed. Cir. 2023).

X-Fab asserts the Board was put on notice of this argument below when X-Fab argued the Nakahata-Whiston combination failed to disclose the claimed trench isolation regions. X-Fab Reply Br. 2–6 (citing J.A. 708–14; J.A. 780–82). We do not agree. Nowhere did X-Fab argue below that

¹ U.S. Patent Appl. Pub. No. 2010/0207138.

² U.S. Patent No. 6,835,627.

Nakahata failed to disclose a silicon starting substrate. X-Fab argued that neither Nakahata nor Whiston disclose trench isolation regions formed by local oxidation of semiconductor material. J.A. 702–03, 708–14. X-Fab did not raise the argument that Nakahata does not disclose the silicon starting material. We therefore see no reversible error in the Board’s failure to make a specific fact finding about whether Nakahata disclosed the silicon starting material. *See Schwendimann*, 82 F.4th at 1380 (explaining that forfeiture “deprives the court of the benefit of the Board’s informed judgment” (cleaned up)). If we were to reach X-Fab’s argument that “Nakahata does not disclose or suggest that its starting substrate is inherently silicon,” X-Fab Br. 21, we would reject this as well. While we do not make such fact findings in the first instance, it seems quite clear that Nakahata expressly discloses a silicon starting substrate. J.A. 956 ¶ 176 (“300 μm thick Si substrate was used as the starting substrate”); J.A. 957 ¶ 181 (same); J.A. 963 ¶ 202 (“10.08 cm diameter silicon substrate . . . was used as the starting substrate”).

X-Fab also argues the Board’s finding that a skilled artisan would have been motivated to combine Nakahata and Whiston was not supported by substantial evidence. X-Fab Br. 22–25. This argument is forfeited as well. Before the Board, X-Fab argued only in the most superficial manner that the Nakahata-Whiston combination was based on hindsight. J.A. 702–03. Nothing in X-Fab’s arguments below put the Board on notice that X-Fab was challenging the sufficiency of the Board’s motivation to combine findings, and it cannot raise the argument for the first time here. *See Schwendimann*, 82 F.4th at 1380.

CONCLUSION

We have considered X-Fab’s remaining arguments and find them unpersuasive. Because X-Fab forfeited the arguments it makes on appeal, we *affirm* the Board’s decision.

IN RE: X-FAB SEMICONDUCTOR FOUNDRIES GMBH

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AFFIRMED

COSTS

Costs to appellee.