

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.;
SAMSUNG ELECTRONICS AMERICA, INC.,

Petitioners,

v.

HARBOR ISLAND DYNAMIC, LLC,

Patent Owner.

Patent No. 7,772,673

Filing Date: March 16, 2007

Issue Date: August 10, 2010

Inventors: Kevin Q. Yin, Amol Kalburge, David J. Howard,
Arjun Kar-Roy, and Dieter Dornisch

Title: DEEP TRENCH ISOLATION AND METHOD OF FORMING SAME

PATENT OWNER'S PRELIMINARY RESPONSE

Case No. IPR2024-01403

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Exhibit No.	Description of Documents
2001	Docket Control Order, Dkt. 38, in <i>Harbor Island Dynamic, LLC v. Samsung Elecs. Co.</i> , Case No. 2:24-cv-00140-JRG-RSP (E.D. Tex. Aug. 5, 2024)
2002	Order Denying Samsung's Motion to Stay Pending <i>Inter Partes</i> Review, Dkt. 62, in <i>Harbor Island Dynamic, LLC v. Samsung Elecs. Co.</i> , Case No. 2:24-cv-00140-JRG-RSP (E.D. Tex. Dec. 19, 2024)
2003	Defendants' Invalidity Contentions, served on September 26, 2024, in <i>Harbor Island Dynamic, LLC v. Samsung Elecs. Co.</i> , Case No. 2:24-cv-00140-JRG-RSP (E.D. Tex.)

I. INTRODUCTION

On September 20, 2024, Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner”) submitted a Petition (Paper 1, “Petition” or “Pet.”) to institute *inter partes* review (“IPR”) of U.S. Patent No. 7,772,673 (Ex. 1001, the “’673 Patent”), challenging Claims 1-17 (the “Challenged Claims”). The Petition asserts that: (i) Claims 1-17 would have been obvious over U.S. Patent No. 6,995,449 to Yin (“Yin” or Ex. 1004) in view of United States Patent Application Publication No. US 2005/0181569 to Koshimizu et al (“Koshimizu” or Ex. 1005); (ii) Claims 1, 3, 5, 7-8, 10, 12, and 14-16 are anticipated by U.S. Patent No. 6,121,102 to Norström et al. (“Norström” or Ex. 1006); and (iii) Claims 7 and 15 are rendered obvious over Norström. The Board should deny the Petition for at least the reasons described briefly below.

With respect to the first ground, the secondary reference relied upon by the Petition to show the “chamfered corner” claim element (Koshimizu) is not analogous art. Koshimizu relates to a method of manufacturing a bipolar junction transistor, not a method of creating deep trenches filled with polysilicon for isolation.

The second Ground fails because the allegedly anticipatory prior art, Norström, does not disclose the claimed trench that is both i) situated in a substrate

and ii) having chamfered corners as required by the Challenged Claims. Rather, the Petition identifies two trenches located under the transistor as the claimed trench in the substrate, then identifies a completely different trench located elsewhere on the die as disclosing the claimed chamfered corners. This reference does not and cannot anticipate the Challenged Claims.

Ground 3 relates only to two dependent claims which the Petition claims are obvious over Norström, but the obviousness analysis does not extend to the underlying independent claims, and therefore Ground 3 does not cure the deficiencies in Ground 1.

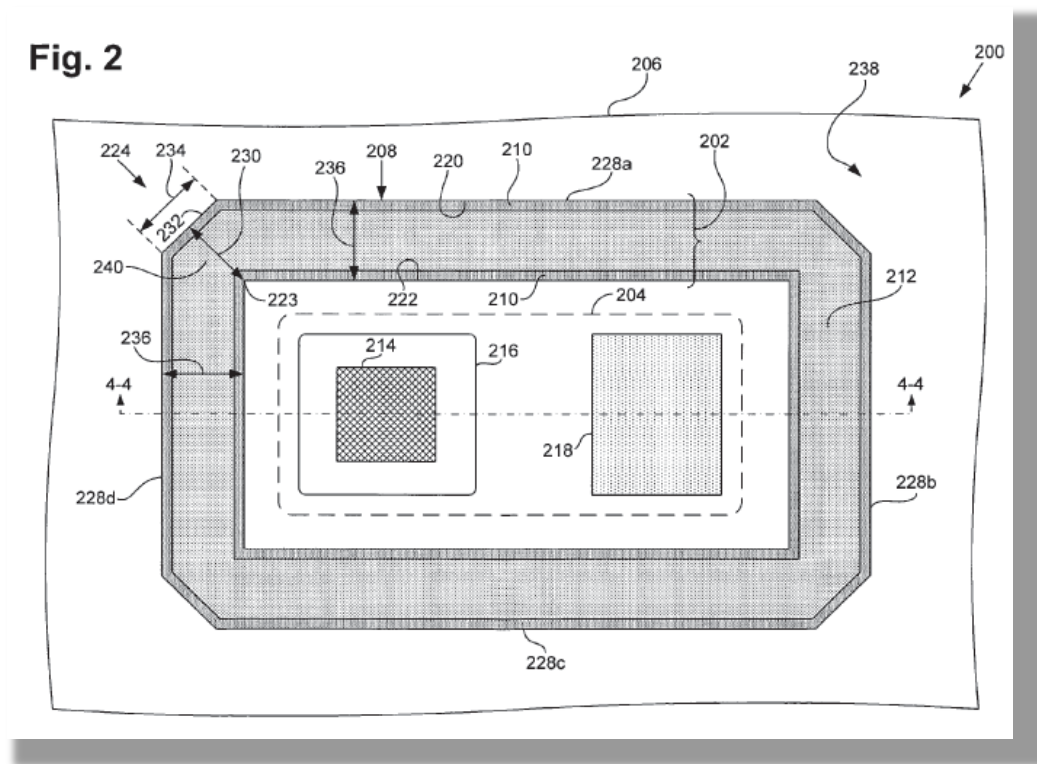
As discussed below, the Petition should also be denied in the discretion of the Director under 35 U.S.C. § 314(a), as the projected Final Written Decision date of March 30, 2026 is after the January 5, 2026 trial date in the underlying litigation.

II. THE '673 PATENT

The '673 Patent (Ex. 1001) is titled “Deep Trench Isolation and Method For Forming Same” and issued on August 10, 2010. The '673 Patent states that “the invention is in the field of isolation region formation in semiconductor substrates.” '673 Patent, 1:8-10. The Patent explains problems with existing deep trenches, namely that when using a “rectangular-shaped trench,” a “thick layer of polysilicon

can be required to adequately fill the trench.” *Id.* 1:32-34. This reduces throughput. *Id.* at 1:35-38; 4:41-45. Moreover, the use of a thick polysilicon layer causes a significant amount of polysilicon flaking, requiring more frequent cleaning of the deposition furnaces and increasing manufacturing costs. *Id.* at 1:35-38; 4:45-50.

The '673 Patent presents a novel solution, which is shown in Figure 2 of the '673 Patent, below:



The corners of the deep trench 208, which includes outside wall 220 and inside wall 222, are “chamfered” to “significantly reduce trench corner width.” *Id.*, 4:24-36. Use

of the claimed invention substantially reduces the thickness of the polysilicon layer, which “increases polysilicon fill process throughput and also significantly increases the average time between polysilicon deposition furnace cleaning.” *Id.* at 5:21-36.

III. THE ALLEGED PRIOR ART

A. Yin

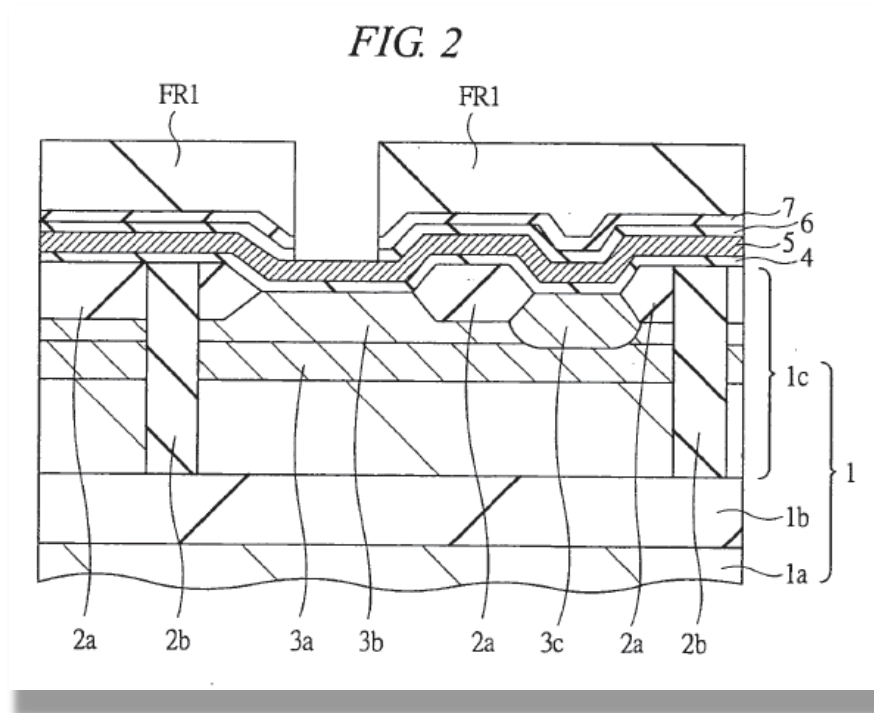
U.S. Patent No. 6,995,449 to Yin et al. (Ex. 1004)¹ is titled “Deep Trench Isolation Region With Reduced-Size Cavities In Overlying Field Oxide” and issued on Feb. 7, 2006. Yin is related to “forming isolation regions in semiconductor substrates.” Ex. 1004, 1:12-14. Yin discloses problems with existing methods of forming deep trenches, noting that they cause “severe lateral etching of the field oxide region situated on the sidewalls of the trench.” *Id.* 1:57-59. Yin discloses and claims a proposed solution which is to create an “oxide liner” on the sidewalls of the trench by using Chemical Vapor Deposition, or CVD. *Id.* 2:38-41. As admitted by Petitioner, Yin does not disclose deep trenches used for isolation that are formed with chamfered corners.

B. Koshimizu

U.S. Patent Publication Serial No. US 2005/0181569 to Koshimizu et al. (Ex.

¹ Yin shares two inventors with the '673 Patent.

1005) published on August 18, 2005. Koshimizu relates to “a technique effectively applied to a semiconductor device having a hetero-junction bipolar transistor.” Ex. 1005, ¶ [0001]. Koshimizu’s technique prevents “the sidewall-insulation film formed on the side surface” in a first opening portion from blocking the growth of a crystalline layer formed in a second opening portion. *Id.*, ¶¶ [0008]-[0012].



As shown above in Figure 2, Koshimizu discloses a deep isolation trench 2b, but does not disclose that this trench is filled with polysilicon. *Id.* ¶ [0052]. Koshimizu’s deep trench 2b “is formed by embedding, for example, a silicon oxide film in a deep trench dug so as to reach the insulation layer 1b through the isolation 2a and the

semiconductor layer 1c from the upper surface of the isolation 2a. *Id.*

C. Norström

U.S. Patent No. 6,121,102 to Norström et al. (Ex. 1006) is titled “Method of Electrical Connection Through An Isolation Trench to Form Trench-Isolated Bipolar Devices” and issued on Sept. 19, 2000. Norström “relates to bipolar semiconductor devices, in particular bipolar transistors and semiconductor diodes, which are electrically isolated or confined by trenches.” Ex. 1006, 1:7-10. An object of the invention of Norström is to “provide a trench isolated transistor having good performance which takes a little area on a substrate.” *Id.* at 1:21-23. Norström discloses and claims the use of a “hole” in the trench under the active region of the bipolar device, which is filled with conducting material. *Id.* at 1:56-67.

The “hole” 157 in the trench 119 is disclosed below in Figure 13a:

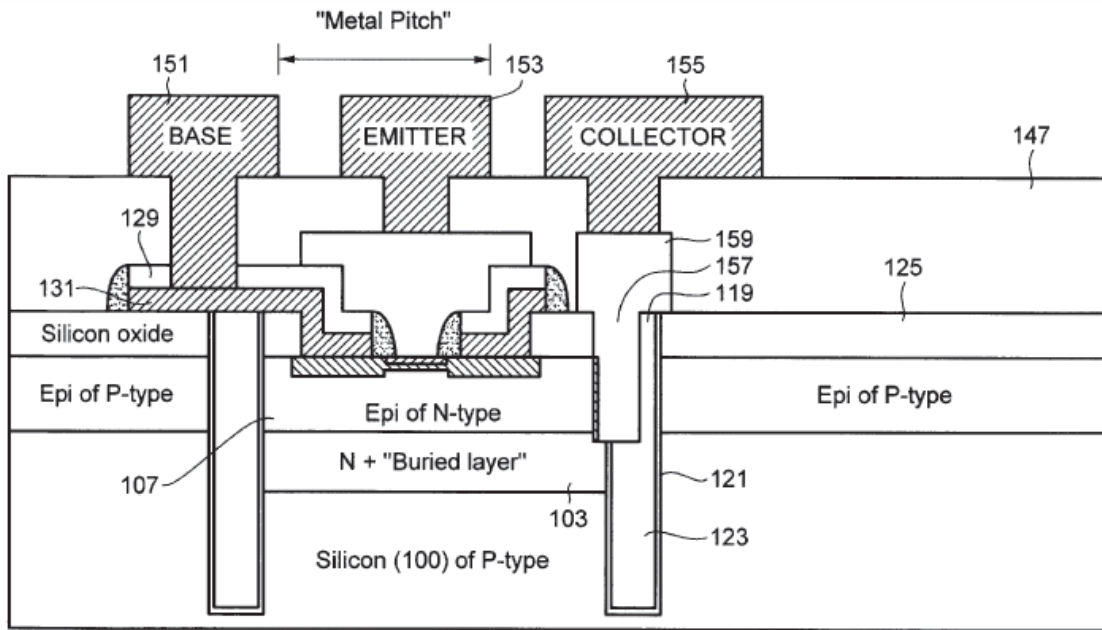


FIG. 13a

“The resulting hole 157 will then . . . have one of its sidewalls in direct contact with the N-doped epitaxial layer 107 and the bottom diffusion 103 and have its opposite sidewall located against the inner material in the trench.” *Id.* at 10:48-52.

IV. LEVEL OF ORDINARY SKILL IN THE ART

For the purposes of this Preliminary Response only, Patent Owner utilizes Petitioner’s proposed level of skill in the art: “at least a master’s degree in electrical engineering or a similar field and at least two years of experience working with semiconductor systems. Additional relevant work experience can compensate for less education, and vice versa.” Pet. at 22-23 (citations omitted).

V. CLAIM CONSTRUCTION

Patent Owner contends that denial of institution is not contingent on any claim construction.

VI. PETITIONER HAS NOT DEMONSTRATED A REASONABLE LIKELIHOOD OF SUCCESS FOR THE GROUNDS ADVANCED IN THE PETITION, AND THE PETITION SHOULD BE DENIED

In order to anticipate the claimed invention, a prior art reference must “disclose all elements of the claim within the four corners of the document,” and it must “disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). “However, a reference can anticipate a claim even if it ‘d[oes] not expressly spell out’ all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015) (quoting *In re Petering*, 301 F.2d 676, 681 (C.C.P.A. 1962)).

The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill

in the art, and (4) so-called secondary considerations where in evidence. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1537 (Fed. Cir. 1983).

The Board has held that a failure to identify the differences between the claimed subject matter and the prior art is fatal to an obviousness challenge. *See, Apple, Inc. v. Contentguard Holdings, Inc.*, IPR2015-00355, Decision Denying Institution of *Inter Partes* Review, Paper 9 at 9-10 (P.T.A.B. June 26, 2015) (denying institution for failure to identify the differences between the claimed subject matter and the prior art).

In arriving at an obviousness determination, the Board must sufficiently explain and support the conclusions that the prior art references disclose all the elements recited in the Challenged Claims and a relevant, skilled artisan not only could have made, but would have been motivated to combine all the prior art references in the way the patent claims and reasonably expected success. *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017). That is, even if all

the claim elements are found across a number of references, an obviousness determination must consider whether a person of ordinary skill in the art would have the motivation to combine those references. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1368 (Fed. Cir. 2016); *Los Angeles Biomedical Rsch. Inst. at Harbor-UCLA Med. Ctr. v. Eli Lilly & Co.*, 849 F.3d 1049, 1067 (Fed. Cir. 2017) (vacating and remanding an obviousness determination, in part, because the Board did not make factual finding as to whether there was an apparent reason to combine all three prior art references to achieve the claimed invention and whether a person of skill in the art would have had a reasonable expectation of success from such a combination). This combinability determination, as supported by an articulated motivation to combine, requires a plausible rationale as to why those prior art references would have worked together. *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1335 (Fed. Cir. 2013). Absent some articulated rationale, a “common sense” finding is no different than the conclusory statement “would have been obvious.” *In re Van Os*, 844 F.3d 1359, 1361 (Fed. Cir. 2017). Of additional importance, “knowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references” *Innogenetics, N.V. v. Abbott Lab’ys.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008).

To demonstrate inherent obviousness, an inherent limitation must necessarily be present in the combination of references. *See Pers. Web Techs., LLC v. Apple, Inc.*, 917 F.3d 1376 (Fed. Cir. 2019); *LBT IP I LLC v. Apple Inc.*, No. 2022-1613, 2023 WL 3914920, at *3 (Fed. Cir. June 9, 2023). It is not enough to merely show that it is likely to be present. *Id.*

A. Ground 1 Fails Because Koshimizu Is Not Analogous Art

Petitioner relies on Koshimizu for the critical “chamfered corner” limitation found in all Challenged Claims. But Koshimizu is not analogous art to the ’673 Patent because the ’673 Patent is directed to reducing the thickness of a polysilicon layer while Koshimizu is related to a method for manufacturing transistors. *K-Tec, Inc. v. Vita-Mix Corp.*, 696 F.3d 1364, 1375 (Fed. Cir. 2012) (“To qualify as prior art for an obviousness analysis, a reference must qualify as “analogous art,” *i.e.*, it must satisfy one of the following conditions: (1) the reference must be from the same field of endeavor; or (2) the reference must be reasonably pertinent to the particular problem with which the inventor is involved.”).

The ’673 Patent and Koshimizu are not in the same field of endeavor. As set out in the specification, the ’673 Patent is “directed to deep trench isolation and method for forming same.” ’673 Patent, 2:20-21. The specification further explains

that the '673 Patent's inventor sought to solve problems that arise with the use of polysilicon. Specifically, filling prior art rectangular-shaped trenches required a thick layer of polysilicon to ensure the trench was adequately filled. *Id.*, 1:32-34. Filling the rectangular trenches was an inefficient process that both “significantly reduce[d] polysilicon fill process throughput” and “require[d] more frequent deposition furnace cleaning as a result of increased polysilicon flaking.” *Id.*, 1:34-39. Notably, the '673 Patent is a die-level process; the specifics of transistor manufacturing was not the focus of the patent. Accordingly, the field of endeavor for the '673 Patent is methods of filling deep isolation trenches with polysilicon.

Koshimizu, in contrast, is directed to a method of manufacturing hetero-junction bipolar transistor (“HBT”) devices that improve the reliability of such devices. Ex. 1005, ¶¶ [0001], [0005]. In particular, Koshimizu's technique prevents “the sidewall-insulation film formed on the side surface” in a first opening portion from blocking the growth of a crystalline layer formed in a second opening portion. *Id.*, ¶¶ [0008]-[0012]. Koshimizu discusses the use of a deep isolation trench filled with silicon oxide, but does not explain any methods for filling the trench, much less with polysilicon. *Id.*, ¶ [0052]. Indeed, Koshimizu does not mention the word “polysilicon” at all. While Koshimizu's Figure 16 shows chamfered corners of the

silicon oxide-filled trench, Koshimizu is silent on the purpose of those corners, and whether they reduce the thickness of the fill material. *Id.*, FIG. 16, ¶ [0052]. Koshimizu's field of endeavor is thus manufacturing transistors.

Petitioner asserts, in a single sentence, that Koshimizu is analogous art because “like the '673 Patent, it is directed to the manufacture of a silicon-based bipolar transistor employing a deep isolation region to isolate the transistor from neighboring transistors.” Pet., 11. Petitioner's description of the field of endeavor (“manufacture of a silicon-based bipolar transistor employing a deep isolation region to isolate the transistor from neighboring transistors”) is far too broad. As shown above, the '673 Patent is not directed to manufacturing a transistor, but to filling a deep trench isolation region using a polysilicon filler. Similarly, Koshimizu is directed to manufacturing a transistor, but not to the manufacture of the deep trench isolation region, and more specifically not to the use of polysilicon. The Federal Circuit has disapproved of broad characterizations of the field of endeavor. *E.g., In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

Clay is instructive here. There, the Federal Circuit reversed a Board of Patent Appeals and Interferences decision upholding claim rejections based on obviousness. *Id.* at 657. The rejected claims were directed to storing a liquid

hydrocarbon “in a storage tank having a dead volume between the tank bottom and its outlet port.” *Id.* One of the two prior art references at issue was “a process for reducing the permeability of hydrocarbon-bearing formations and thus improving oil production, using a gel similar to that in Clay’s invention.” *Id.* at 658. The Board found that the two inventions were part of the common endeavor “maximizing withdrawal of petroleum stored in petroleum reservoirs.” *Id.* at 659.

The Federal Circuit reversed, holding this finding to be clearly erroneous and that the claims and reference were not within a common field of endeavor “merely because both relate to the petroleum industry.” *Id.* Instead, because the two were directed to different applications within the petroleum industry (storage of petroleum, on one hand, and extraction, on the other), they were not within the same field. *Id.*

The facts here are similar. While both the ’673 Patent and Koshimizu are both related to semiconductor manufacturing, they address different applications. Indeed, Petitioner puts forth no facts that would suggest that a POSITA would look to a reference regarding transistor manufacturing using silicon dioxide when faced with the problems inherent in thick layers of polysilicon.

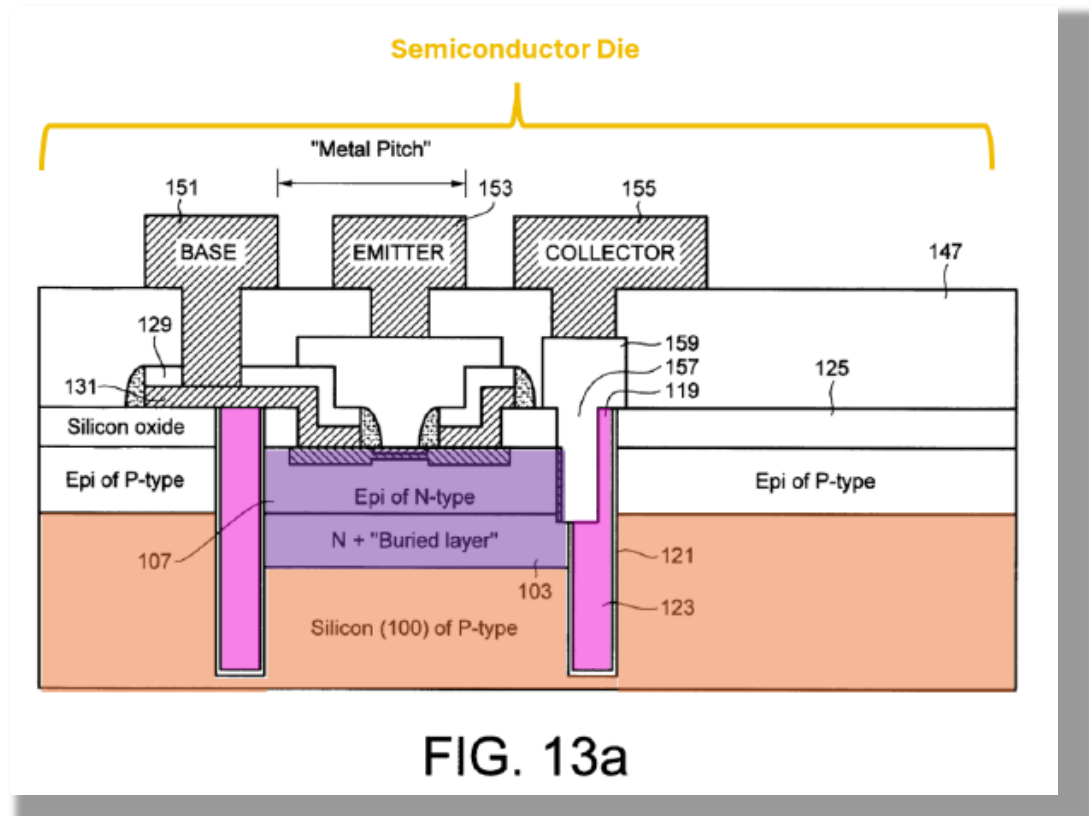
For similar reasons, Koshimizu is not “reasonably pertinent to the particular problem with which the inventor is involved.” As discussed above, the problem the inventor confronted in the ’673 Patent was the drawbacks inherent in using polysilicon to fill trenches. The thick layer necessitated by prior art geometries reduced throughput and, due to polysilicon’s flaking issues, necessitated increased cleanups in the manufacturing facility. In contrast, Koshimizu does not even discuss the method by which its trench is manufactured or filled, other than to state that it uses silicon oxide as the fill. Ex. 1005, ¶ [0052]. The incidental use, without any discussion, of chamfered corners would not have led an inventor to Koshimizu. *See, e.g., Smith & Nephew, Inc. v. Hologic, Inc.*, 721 F. App’x 943, 949 (Fed. Cir. 2018) (“Even though both ended up with similar *mechanical* solutions, it is beyond a stretch to say that Galloway logically would have commended itself to an inventor’s attention in considering his problem.”) (citations and internal quotations omitted).

Accordingly, because the Petition fails to show that Koshimizu is analogous art, it is defective as to Ground 1.

B. Ground 2 Fails Because the Petition Fails to Identify a Trench that is Both “Situated in a Substrate” and Has “At Least One Trench Chamfered Corner” As Claimed

The Petition is deficient as to Ground 2 because the Petition mixes features from two different structures in Norström, and thus cannot show that Norström anticipates the claims. Independent Claims 1 and 10 of the '673 Patent, and therefore all of the Challenged Claims, require a “trench situated in a substrate of said semiconductor die” with “at least one trench chamfered corner.” '673 Patent, cls. 1, 10. The Petition fails to identify such a trench. Instead, the Petition identifies two *different trenches*; one that it argues is in the substrate and one that it argues has the chamfered corner. However, the Petitioner does not show—indeed cannot show—that the trenches are the same.

For the claimed “trench,” the Petition identifies the two trenches annotated in *magenta*, below:

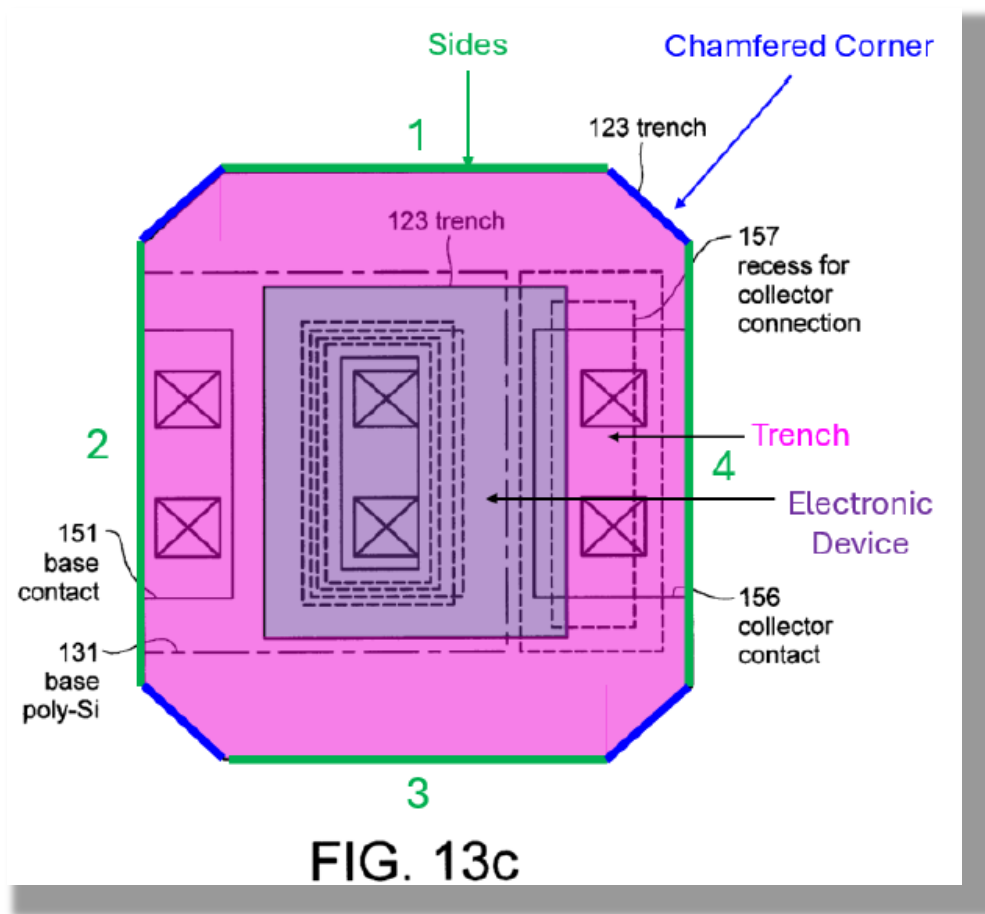


Pet. at 62 (citing Ex. 1006, FIG. 13a) (“Figure 13a shows that both the **trench** and the **electronic device** (the **NPN bipolar transistor**) are situated in a **substrate** of silicon within the semiconductor die.”).

These trenches, according to Norström, are labeled with numeral 119 and are “isolating trenches.” *See, e.g.*, Ex. 1006, 7:38-40 and 49-64, 9:31-47. The isolating trenches are disposed “at the edges of the epitaxial layer of N-type, i.e., at the border between this layer and the epitaxial layers 109 of P-type.” *Id.*, 9:31-35, FIG. 9, FIG. 13a, FIG. 13b. The border between the epitaxial layers, and thus, the location of the

trenches is, as shown in FIG. 13a, under the base and collector of the transistor. *Id.* at 11:34-36 (“The contact hole for the collector is here etched deep down into the trench 119.”); 10:2-15 (describing trenches 119 as under the collector and base).

However, to show that the corners of these trenches are chamfered, as required by the claims, the Petition then points to FIG. 13c of Norström, reproduced below with annotations:



Pet. at 60-61 (citing Ex. 1006, FIG. 13c). The Petition states that, “[a]s shown in Figure 13c, *Norström’s* trench 123 surrounds the bipolar NPN transistor within, which is an electronic device” and “Figure 13c also depicts the four trench chamfered corners at the outer edge of the trench 123 connecting the four sides of the trench.” Pet. at 61.

But element 123 in *Norström* FIG. 13c ***cannot be*** the trenches 119 identified by Petitioner earlier in the claim. Comparison of the two figures and corresponding descriptions shows that the 119 trenches, two narrow slices confined laterally to under the approximate centers of the base and collector,² respectively, have completely different geometry from 123, a wide area that encompasses and goes beyond the base and collector. Petitioner appears to base its conflation of 119 (FIG. 13a) and 123 (FIG. 13c) on *Norström’s* use of identifier number “123” in both FIGS. 13a and 13c. But FIG. 13a’s 123 identifies the “isolating material” that fills FIG. 13a’s trench 119. Ex. 1006, 9:42-47. In contrast, FIG. 13c’s 123 is a single “trench.” *Id.*, FIG. 13c; *id.* 16:39-42 (“outer sidewalls of the trench 123 shown in FIG. 13c”). Thus, *Norström’s* 119 (FIG. 13a) and 123 (FIG. 13c) refer to different structures.

² Ex. 1006, 9:31-47, 10:2-15, 11:34-36.

With this—correct—understanding of Norström, Petitioner’s anticipation argument fails. The trenches 119 have no corners connecting a plurality of sides, much less the trench chamfered corner required. And, the Petition makes no effort to show FIG. 13c’s 123 is “situated in a substrate,” as recited.

To the extent the Petition is read to argue that 123’s corners would be applied to the 119 trenches, that argument must fail. “Prior art that must be modified to meet the disputed claim limitation does not anticipate the claim.” *Enplas Display Device Corp. v. Seoul Semiconductor Co.*, 909 F.3d 398, 405 (Fed. Cir. 2008). Anticipation requires that the prior art must “disclose all elements of the claim within the four corners of the document,” and it must “disclose those elements ‘arranged as in the claim’.” *Net MoneyIn, Inc.*, 545 F.3d at 1369 (quoting *Connell*, 722 F.3d at 1548).

The Petition’s failure to show a trench situated in a substrate and with a trench chamfered corner is a fatal defect in its anticipation analysis. Therefore, institution should be denied as to Ground 2.

C. Ground 3 Fails Because It Does Not Cure the Deficiency in Ground 2

For Ground 3, the Petition argues that dependent Claims 7 and 15 would have been obvious in view of Norström. Pet. at 71-73. The Petition does not make any obviousness arguments with respect to Norström as to any other claims aside from

7 and 15, nor does it argue that it would be obvious to modify Norström to remedy Ground 2’s deficiencies . Accordingly, Ground 3 also fails.

**VII. THE PETITION SHOULD BE DENIED IN THE DISCRETION
OF THE DIRECTOR UNDER 35 U.S.C. § 314(A)**

Based on Petitioner’s reasons regarding § 314(a), the Board should exercise its discretion to deny this Petition. As shown above, the Petition fails to present a compelling unpatentability challenge.

The circumstances of the parallel District Court Litigation, *Harbor Island Dynamic LLC v. Samsung Elecs. Co.*, No. 2:24-cv-00140-JRG-RSP (E.D. Tex.) necessitate denial of the Petition under the Board’s precedent, as every factor considered in relation to efficiency, fairness, and the merits supports denial. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 6 (P.T.A.B. Mar. 20, 2020) (precedential) (considering (a) “whether the petitioner and the defendant in the parallel proceeding are the same party”; (b) “overlap between issues raised in the petition and in the parallel proceeding” (c) “proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision”; (d) “investment in the parallel proceeding by the court and the parties”; (e) “whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted”; and (f) “other circumstances that impact the Board’s exercise of discretion, including the

merits.”).

As set forth below, these factors collectively demonstrate that efficiency and integrity of the AIA are best served by denying review. First, the Petitioner is the Defendant in the parallel proceeding. *See infra* Section VII.A. Second, the asserted claims in the District Court Litigation are all at issue in the Petition. *See infra* Section VII.B. Third, trial in the District Court Litigation is set for January 5, 2026, which is three months before projected statutory deadline for a Final Written Decision of this Petition on March 30, 2026. *See infra* Section VII.C. Fourth, the parties (and Patent Owner in particular) have invested significant resources in developing legal and factual issues of validity and infringement in the District Court Litigation and will have invested substantially more resources before any decision on this Petition. *See infra* Section VII.D. Fifth, the Court has already denied a stay pending this Petition. *See infra* Section VII.E. Finally, no other factors favor institution. *See infra* Section VII.F.

Accordingly, the Board should exercise its discretion under § 314(a) and deny the Petition because institution of this proceeding would not be consistent with the objective of the AIA to “provide an effective and efficient alternative to district court litigation.” *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8, at

20 (P.T.A.B. Sept. 12, 2018) (quoting *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, at 16–17 (P.T.A.B. Sept. 6, 2017) (precedential)).

A. The Parallel District Court Litigation and the Petition Involve the Same Parties

As Petitioner notes, there exists a parallel District Court Litigation between the same parties regarding the same subject patent (the '673 Patent). Pet. at 75. Petitioner is a party to the District Court Litigation captioned as *Harbor Island Dynamic LLC v. Samsung Elecs. Co.*, No. 2:24-cv-00140-JRG-RSP (E.D. Tex.). Accordingly, this factor weighs in favor of discretionary denial.

B. The District Court Litigation Involves Substantially the Same Claims

All of the asserted claims of the '673 Patent in the District Court Litigation are at issue in this Petition. “In at least these ways, the parallel proceedings would duplicate effort. This is an inefficient use of Board, party, and judicial resources and raises the possibility of conflicting decisions.” *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00122, Paper 15 at 10 (P.T.A.B. May 15, 2020). Accordingly, this fact weighs in favor of discretionary denial.

C. Proximity of the District Court’s Trial Date

The proximity of the District Court Litigation’s trial date to the Board’s projected statutory deadline for a Final Written Decision strongly weighs in favor of discretionary denial.

The parties’ trial is scheduled for January 5, 2026. Ex. 2001 (Docket Control Order, Dkt. 38, *Harbor Island Dynamic LLC v. Samsung Elecs. Co.*, No. 2:24-cv-00140-JRG-RSP (E.D. Tex. Aug. 5, 2024)). Pursuant to 35 U.S.C. §§ 314(b)(1) and 316(a)(11), the projected statutory deadline for a Final Written Decision of this Petition is March 30, 2026.³ As the District Court’s trial will be three months before the projected statutory deadline, this factor weighs strongly in favor of denying institution. *See Supercell Oy v. Gree, Inc.*, IPR2020-00513, Paper 11 at 10-12 (P.T.A.B. June 24, 2020) (denying institution where the jury trial was scheduled to

³ The statutory deadline for institution is March 30, 2025, “three months after receiving a preliminary response to the petition under section 313.” *See* 35 U.S.C. § 314(b)(1). If instituted, the statutory deadline for Final Written Decision is March 30, 2026, “not later than 1 year after the date on which the Director notices the institution of a review.”

conclude approximately ten months before the statutory deadline); *Edward LifeSciences Corp. v. Evalve, Inc.*, IPR2019-01479, Paper 7, at 6-13 (P.T.A.B. Feb. 26, 2020) (denying institution where jury trial would conclude more than nine months before a final decision would be due); *Samsung Elecs. Am., Inc. v. Uniloc 2017 LLC*, IPR2019-01218, Paper 7, at 7-10 (P.T.A.B. Jan. 7, 2020) (denying institution where jury selection was scheduled for approximately six months before trial in the Board proceeding would conclude); *Next Caller Inc. v. TrustID, Inc.*, IPR2019-00961, -00962, Paper 10, at 8-16 (P.T.A.B. Oct. 16, 2019) (denying institution where trial was scheduled to conclude “several months,” before a final decision would be due); *Cisco Sys., Inc.*, IPR2020-00122, Paper 15 at 8 (“Because the trial date is substantially earlier than the projected statutory deadline for the Board’s final decision, this factor weighs in favor of discretionary denial.”).

Petitioner does not contest that the proximity of the trial favors denial of institution. Thus, this factor also weighs in favor of discretionary denial.

D. Significant Investment and Petitioner’s Delay in Filing the Petition

The parties’ investment in the parallel proceeding weighs in favor of discretionary denial. In the District Court Litigation, the Court has already entered a Docket Control Order (Dkt. 38), Discovery Order (Dkt. 39), and Protective Order

(Dkt. 44). Discovery is also well under way. The parties have already exchanged infringement contentions pursuant to P.R. 3-1 and invalidity contentions pursuant to P.R. 3-3. Ex. 2001 (Docket Control Order). A trial date is also set for January 5, 2026. *Id.* Thus, the parties' and Court's substantial investment in this proceeding weighs in favor of denial of institution under this factor.

E. No Stay of the Parallel District Court Litigation

There is no stay of the parallel District Court Litigation and, in fact, a motion for a stay by Petitioner has already been denied. *See* Dkt. 62, *Harbor Island Dynamic, LLC v. Samsung Elecs. Co.*, No. 2:24-cv-00140-JRG-RSP (E.D. Tex. December 19, 2024). Ex. 2002. Even if the Petition were instituted and Petitioner filed another motion to stay the District Court Litigation, prejudice, tactical disadvantage to Patent Owner, the late stage of the litigation, and the lack of potential simplification would weigh strongly against such a motion. *See Lennon Image Techs., LLC v. Macy's Retail Holdings, Inc.*, 2:13-CV-00235-JRG, 2014 WL 4652117, at *1 (E.D. Tex. Sept. 18, 2014).

Moreover, a stay would not decrease the burden on the Court and the parties since any instituted IPR would not cover all of the obviousness challenges that Petitioner has raised in the District Court Litigation, and do not include Petitioner's

challenges under § 101, § 102, or § 112. *See generally* Ex. 2003 (Invalidity Contentions), at 46, 53-54. *Intell. Ventures II LLC v. FedEx Corp.*, No. 2:16-cv-00980-JRG, Dkt. 141 at 3-4 (E.D. Tex. Oct. 24, 2017) (“[T]he instituted IPRs only cover a narrow slice of the invalidity arguments Defendants have raised in this case. For example, Defendants have argued that the ’715 Patent is invalid under § 102 with respect to at least eight references . . . under § 103 with respect to at least twenty-six combinations . . . under § 112 [], and under § 101.”).

Accordingly, it would be unlikely for the Court to hold that a stay would streamline the litigation and this factor supports denial of institution.

F. Other Factors Favor Discretionary Denial

Petitioner does not present a strong case on the merits, further supporting denial of institution. *See supra* Section VI. Petitioner also does not identify any other factors which weigh against discretionary denial. Pet. at 73-75.

Thus, when viewing the factors together, the Petition should be denied in the Director’s discretion under 35 U.S.C. § 314(a).

VIII. THE BOARD SHOULD REJECT ANY LATE SOTERA STIPULATION

Petitioner has not made a *Sotera*-style stipulation that “if IPR is instituted, [Petitioner] will not pursue in the District Court Litigation any ground raised or that

could have been reasonably raised in an IPR” in its Petition, which weighs further in favor of discretionarily denying institution. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, 13-14 (P.T.A.B. Dec. 1, 2020) (designated Dec. 17, 2020).

The Board should not accept any late *Sotera* stipulation after this Patent Owner Preliminary Response. Petitioner has known about the related District Court Litigation since Patent Owner filed a Complaint asserting infringement of the ’673 Patent against Petitioner (February 27, 2024) over six months before the Petition (Sept. 20, 2024) and has had a docket control order for the District Court Litigation, anticipating a trial date for January 5, 2026. Ex. 2001 (Docket Control Order). Any withholding of the *Sotera* stipulation in its Petition is gamesmanship and prejudicial to Patent Owner in this proceeding and is inconsistent with 37 C.F.R. § 42.1(b)’s mandate to “secure the just, speedy, and inexpensive resolution of every proceeding.”

Both the Board and the Director are abundantly clear that Petitioner cannot wait until after the Board renders its Institution Decision to address the issue of *Fintiv*, the Board’s discretionary authority, and to submit a *Sotera* stipulation. *NXP USA, Inc. v Impinj, Inc.*, IPR2021-01556, Paper 12, 5-6 (P.T.A.B. Aug. 25, 2022);

see also id., IPR2021-01556, Paper 13, 3-4 (P.T.A.B. Sept. 7, 2022) (the Director finding “that the Board correctly determined that a stipulation, offered by a petitioner for the first time after a decision denying institution, is not a proper basis for granting rehearing of the decision on institution;” “[p]ermitting a petitioner to wait and see if the Board denies institution under *Fintiv*, and then offer such a stipulation for the first time on rehearing, frustrates these goals [of avoiding conflicting decisions] and would open the door to gamesmanship;” “***the only appropriate time for a petitioner to offer a stipulation related to the Fintiv factor 4 analysis is prior to the Board’s decision of whether to institute review.***”) (emphasis added).

IX. CONCLUSION

For the foregoing reasons, Patent Owner respectfully requests that the Board deny institution of the Petition in its entirety.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned PATENT OWNER'S PRELIMINARY RESPONSE specified in 37 C.F.R. § 42.24 has 5,282 words in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word for Office 365.

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