

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS
AMERICA, INC., SAMSUNG SEMICONDUCTOR, INC., and SAMSUNG
AUSTIN SEMICONDUCTOR LLC,

Petitioners,

v.

W&WSENS DEVICES INC.,

Patent Owner.

Case No. PGR2025-00082
U.S. Patent No. 12,243,948

**PETITIONERS' OPPOSITION TO PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL OF INSTITUTION**

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I. INTRODUCTION

The Director should reject W&W's discretionary denial request (Paper 10, "DD Req."). First, Petitioners filed this PGR challenging the '948 Patent less than six months after it issued, thereby furthering the Office's goal of providing early challenges to patents that should not have issued.

Second, the Office should use its resources to correct material errors that it committed when granting the '948 Patent. The Examiner did not conduct the reasonable searches that would have uncovered *Kuboi* and other relevant references. And, in a divisional application, the Office rejected a claim limitation present in the '948 Patent's claims as unsupported under 35 U.S.C. § 112. The applicant amended the claims to remove the unsupported limitation, confirming the error.

Third, the parties' settled expectations weigh against denial. The '948 Patent is in its infancy, issuing less than six months before Samsung filed its Petition challenging all claims. The Office has a stated preference for such early challenges and regularly denies discretionary denial requests, even when other factors, such as the trial date, favor denial. W&W has no settled expectations based on unsolicited communications in 2019-2020 related to merger/acquisition ("M&A") because the '948 Patent's filing remained half a decade into the future. Regardless, Samsung had an expectation of nonenforcement based on the nature of the communications.

Fourth, the *Fintiv* factors do not outweigh Petitioners' early challenge.

Samsung has entered a broad stipulation that removes all overlap from the district court proceeding. The Director has determined that such stipulation “strongly weighs against discretionary denial” in PGR and referred for a merits decision even where the other *Fintiv* factors favor denial. *Toyota Motor Corp. v. AutoConnect Holdings LLC*, PGR2025-00041, Paper 9 at 2-3 (Director Sep. 8, 2025).

Fifth, W&W’s arguments regarding 35 U.S.C. § 325(d) are incorrect. Neither *Kuboi* nor the *Shinohara* reference was considered during prosecution and neither is cumulative of the references considered during prosecution. *Vasylyev* was never applied by the Office for the ’948 Patent, and Patent Owner does not argue that the Petition’s use of it is cumulative of other prior art.

The Director should refer this Petition to the Board on the merits.

II. PETITIONERS’ PGR CHALLENGE WEIGHS AGAINST DISCRETIONARY DENIAL AND FAVORS THE OFFICE’S STATED PREFERENCE FOR EARLY CHALLENGES

Samsung filed this PGR within six months of the ’948 Patent’s issuance. The Director has repeatedly stated that such early challenges favor referral, even where the trial date precedes the final written decision date by several months. *See Toyota*, PGR2025-00041, Paper 9 at 2 (referring for merits consideration, trial scheduled four months before FWD date); *Geotab Inc. v. Fractus, S.A.*, PGR2025-00056, Paper 14 at 2-3 (Director Oct. 17, 2025) (referring for merits consideration, trial scheduled three months before FWD date); *cf. Multi-Color Corp. v. Brook & Whittle Ltd.*,

PGR2025-00025, Paper 10 at 2-3 (Director July 16, 2025) (referring for merits, Texas action scheduled four months before FWD date).

The Director has stated that “petitions for post-grant review are favored because they must be filed no later than nine months from the grant of the patent” and “occur before expectations in the patent rights are strongly settled.” *Toyota*, PGR2025-00041, Paper 9 at 2 (citations omitted); *see also Geotab*, PGR2025-00056, Paper 14 at 2-3; *Multi-Color*, PGR2025-00025, Paper 10 at 2-3; *Straumann USA, LLC v. Smart Denture Conversions, LLC*, PGR2025-00054, Paper 11 at 2 (Director Oct. 17, 2025). Here, Samsung filed this PGR six months after the ’948 Patent issued, thereby facilitating the Office’s goal of “[e]arly challenges” before Patent Owner develops any settled expectations. *Toyota*, PGR2025-00041, Paper 9 at 2.

Samsung also provided a strong stipulation not to “pursue in [the parallel litigation] the specific grounds [asserted in PGR2025-00082], or ... any other ground ... that was raised or could have been reasonably raised in a [PGR].” Paper 9 (citation omitted). The Director has held that such “stipulation broadly covers nearly all invalidity defenses in district court” and “reduces the concern of inconsistent outcomes or significant duplication of efforts, and ***strongly weighs against discretionary denial***,” even when the trial date is several months before the final written decision date. *Toyota*, PGR2025-00041, Paper 9 at 2-3 (emphasis added).

III. INSTITUTION IS REQUIRED TO CORRECT TWO MATERIAL ERRORS

A. The Office Erred Because the Examiner Failed to Search for the Allowable Subject Matter, Which Would Have Revealed *Kuboi*

The Office materially erred when it allowed the '948 Patent to issue. During prosecution of U.S. Patent Application No. 18/822,880 (which became the '948 Patent), the Examiner effectively issued a first-action allowance when they indicated in the sole office action that pending claims 3-7 “would be allowable if rewritten in independent form,” based on the subject matter of dependent claim 3, which recited “in which at least some of the holes are elongated along the respective light-receiving surfaces.” Ex. 1003, 313, 349. After the applicant amended the claims to include this limitation, the Examiner allowed the application. *See id.*, 17, 22 (Reasons for Allowance), 249, 253 (amendment). But the Office erred.

During prosecution, the Examiner’s searches did not target the specific limitations of original claim 3, which were indicated as the allowable subject matter. *Id.*, 41-58, 324-337 (Examiner’s searches). Although the Examiner conducted a single search (N1) that included “elongated” as a term, this search required numerous additional terms, such as the limitations of searches L43 or L44 that require the inventors’ or Patent Owner’s names, *and* additional terms such as “solid

NEAR dielectric NEAR material,” which returned *zero* hits. *See id.*, 58.¹ Rather than conduct a broader search, the Examiner allowed the claims. But a broader search would have returned additional results, including the *Kuboi* reference. The Examiner’s omission led to material error in finding the limitations of original claim 3 allowable.

For example, searching for U.S. patents or publications that published before May 21, 2013 (the day before the earliest provisional on the face of the ’948 Patent), with the terms “hole,” “semiconductor,” and either “elongated” or “vertical”² within 20 words of each other and any one of “photodiode” or “photodetect” or “photoelectric,”³ yields 53 results, including *Kuboi* as the 6th result. Ex. 1091; Ex.

¹ The Examiner’s class-based searches (e.g., L52 included in N1) were also unduly narrow, failing to search H01L27/146 or H01L31/18 (*Kuboi*’s classes). *Compare* Ex. 1003, 45, 58 (searches L52, N1 incorporating searches L5, L14, L52), *and id.*, 324, 326 (searches L5, L14 not including *Kuboi*’s classes), *with Kuboi*, cover (item (51)).

² The ’948 Patent describes its holes as “vertical,” which the Examiner did not search. *See* Ex. 1001, 20:19-21, 37:14-17, 46:54-58. Several prior art references cited confirm this description for appropriately describing the holes of the ’948 Patent. *See, e.g.*, Ex. 1003, 382 ([0009]), 498, 502.

³ “[P]hotoelectric” describes the general process by which photodetectors operate.

1092 at 1 (no. 6). The exact search strings was:

(PD/01/01/1789->05/21/2013) AND ((“hole semiconductor
elongated”~20) OR (“hole semiconductor vertical”~20))
AND (photoelectric OR photodiode OR photodetect*)

Ex. 1091 at 1. Had the Office conducted a reasonable search, such as the one above, after the Examiner’s much narrower search yielded zero results, it would have found *Kuboi* or another piece of prior art disclosing the limitations of the ’948 Patent’s claims, including the limitation indicated as allowable. *See* Pet. 32 (element [1d]); *id.*, 14-52 (claim 1). Thus, the Examiner’s allowance of the claims resulted from not performing an appropriate search. Samsung’s expert explains this. *See, e.g.*, Ex. 1002, ¶156 (element [1d]), ¶¶110-201 (claim 1). W&W’s DD Request does not dispute that *Kuboi* teaches the purportedly novel claim element, which also favors the Board correcting the Office’s past error. *See Tesla, Inc. v. Charge Fusion Techs., LLC*, IPR2025-00152, Paper 11 at 2-3 (Director June 12, 2025) (referring for merits decision where patent owner did not challenge petition’s showing that prior art showed missing element of claims in prosecution).

Because the Examiner did not perform the proper search, they did not have these teachings and thus erred in their conclusion of patentability.

B. The Office Erred by Allowing Claims Later Found to Lack Support Under 35 U.S.C. § 112

During prosecution of U.S. Patent Application No. 19/036,506, a divisional

of the '948 Patent, the applicant filed a preliminary amendment to add new claims 18-36. Ex. 1093, 185-197. New independent claim 18 included the limitation “one or more holes that are fabricated as recesses in each of at least some of the pillars, extend in up-down directions to depths of less than 10000 nm, and are filled at least partly with solid dielectric material.” *Id.*, 187. New independent claim 32 included a similar limitation. *Id.*, 190-191. The Examiner issued an office action rejecting these limitations as lacking § 112 support. *Id.*, 285-288. The Examiner specifically found that there was no written description support for “1.) [a] pillar with a 2.) hole formed in the upper surface of the pillar, **and 3.) the hole’s specific depth, and, the holes in the pillars being filled with ‘solid dielectric material’.**” *Id.*, 286. The Examiner also found that the specification did not enable the “integrated structure comprising an array of pillars” because “the disclosure does not support the full breadth of the claims which as presently shown include that the pillars could be sized to be on the order of magnitude of either millimeter or nanometer sized pillars, which is not disclosed and whereas the disclosure specifically centers the pillar dimensions at around 100 micrometers (see [¶¶] 0091-0093) and micrometers in general.” *Id.*, 286-287.

The applicant responded by canceling claims 18-36 and adding new claims 37-49, which removed this unsupported and non-enabled limitation for the holes, and instead recited the pillar height. *Id.*, 430-433.

The '948 Patent, however, includes claim language that is substantially similar to the removed unsupported limitation of the '506 application. Claim 1 recites “one or more holes that are fabricated as recesses at or under the light-receiving surface of each of at least some of the pillars, ... extend into the pillars to a depth of 100 to 10000 nm, and are filled at least partly with solid dielectric material.” Ex. 1001, 55:48-53. Independent claim 13 recites similar language. *Id.*, 56:53-63. The Petition challenges these claims under § 112, specifically noting that the claims’ recitation of the “‘one or more holes’ extending to depths of less than 10,000 nm” to increase by a factor of at least 1.1 the absorption of the light is not supported under § 112, including lack of enablement, like the Office’s rejection of the '506 application’s claims. *Compare* Pet. 141-142, *with* Ex. 1093, 287-288 (enablement and written description rejections). The Petition notes the '948 Patent’s claims’ substantive similarity with the '506 application’s claims and the Examiner’s prior rejections. Pet. 141-142. Therefore, the Petition raises the same § 112 issues that the Examiner raised in the '506 application, which forced the applicant to amend the claims.

The Office’s failure to reject the claims of the '948 Patent under § 112 was error and should be corrected. *See, e.g., ClearCorrect Operating, LLC v. Align Tech., Inc.*, IPR2025-00818, Paper 14 at 4 (Director Aug. 29, 2025) (denying DD request because petitioner “persuasively demonstrate[d] that the Office erred” when it

rejected “substantially similar limitations in child applications ... over prior art”).

IV. THE LACK OF SETTLED EXPECTATIONS SUPPORTS REFERRAL

Any “settled expectations” of the parties weigh against denial because (1) the ’948 Patent issued less than six months before Samsung filed this Petition; (2) W&W admits that it has not previously licensed, enforced, or commercialized the ’948 Patent; (3) W&W acknowledges that Samsung had no knowledge of the ’948 Patent prior to being sued; and (4) Samsung’s products were on the market nearly a decade before the ’948 Patent was filed.

A. The Ages of the ’948 Patent and Other Challenged Patents Favor Referral, Not Denial

W&W argues that it has “strong settled expectations,” not to the ’948 Patent, but to “*related* patents.” DD Req. 11 (emphasis added). However, the question here is whether there are settled expectations in the ’948 Patent. There are not. W&W’s arguments based on the ages of other challenged patents and alleged notice of *related* patents, but *not* the ’948 Patent, fail to withstand scrutiny.

1. The Ages of the ’948 Patent and Other Challenged Patents Do Not Favor Denial; They Instead Favor Referral

The ’948 Patent issued March 4, 2025, less than six months before Samsung filed this Petition. The insignificant age of the ’948 Patent favors referral, as explained in Section II. The other challenged patents change nothing.

The ’871 and ’360 Patents issued September 2024 and April 2023 (IPR2025-

00993, -00994), respectively—each less than three years before the expected discretionary denial decision date. And the '543 and '700 Patents issued in late 2019 (IPR2025-00995, -00996)—each around six years before the same expected date. The Director has found that similarly young patents “have not been in force for a significant period of time ..., and, accordingly, Patent Owner has not developed strong settled expectations,” which weighs against denial. *See, e.g., Cambridge Indus. USA, Inc. v. Applied Optoelects., Inc.*, IPR2025-00434, Paper 11 at 2-3 (Director June 26, 2025) (patents that issued in 2019 “ha[d] not developed strong settled expectations”); *Berkshire Hathaway Energy Co. v. Birchtech Corp.*, IPR2025-00274, Paper 23 at 2-3 (Director July 2, 2025) (same for patents that “issued in 2019 and 2020”).

U.S. Patent No. 9,525,084 has been dismissed from the parallel litigation and the corresponding IPR2025-00997 has been terminated. *See* Exs. 1088-1089, 1095. Thus, all proceedings challenge patents from 2019 to 2025, more than half being less than three years old. Although W&W argues that the other proceedings have been denied institution (DD Req. 8-9), that should not change the outcome here because it was impossible for Samsung to challenge the '948 Patent before it issued. The Director’s preference to address errors in newly issued patents in PGR should be respected. *Toyota*, PGR2025-00041, Paper 9 at 2-3.

W&W’s citation to *Samsung Electronics Co. v. iCashe, Inc.*, IPR2025-00639,

Paper 11 at 2-3 (Deshpande, C.J., Aug. 14, 2025), is inapposite. DD Req. 11. There, the petitioner challenged seven patents, five of which issued between 2013 and 2016, while two issued in March 2022 and July 2023. *Samsung*, IPR2025-00639, Paper 11 at 2. Even though the two younger patents “ordinarily ... might counsel against discretionary denial,” the Director found, in part, it would be an “inefficient use of Board resources” to review two patents while the district court considers patents that issued nearly nine or more years ago. *Id.* at 2-3. This case is different. Here, the ’948 Patent issued less than a year ago and two other challenged patents issued in 2023-2024, and all patents remain young. These differences counsel against discretionary denial.

2. W&W’s Alleged “Notice” Fails

W&W cannot dispute that *none* of its unsolicited communications (Exs. 2001-2004) identify the ’948 Patent. Nor could Samsung have had any knowledge of the ’948 Patent because it was not filed until years after communications ceased. It is impossible for Samsung to have had notice or knowledge of the ’948 Patent, rendering all of W&W’s notice arguments irrelevant. W&W’s suggestion that searching the USPTO database would have shown the ’948 Patent (DD Req. 12-14) is disingenuous because the ’948 Patent *did not publish until after W&W sued Samsung*—and therefore could not be found even by searching. *Compare* Ex. 1003, 63 (publication dated “12/26/2024”), *with* Ex. 1087

(Complaint filed Oct. 21, 2024). Notwithstanding the lack of notice, Samsung filed its Petition six months after the '948 Patent issued, furthering the Office's goals of early challenges to patents that should not have issued.

Because, by W&W's own account, it was impossible for Samsung to have known about the '948 Patent before being sued (DD Req. 12-14), W&W instead tries to rely on irrelevant communications that could not have presented notice of the '948 Patent under any circumstances. But all of those communications—from 2019-2020—are irrelevant because W&W does not allege that they involved the '948 Patent and, as explained above, could not have involved the '948 Patent, which was not filed until years later and did not publish or issue until after W&W sued Samsung.

Samsung, by contrast, had strong expectations that they would not be sued because Samsung released many of the now-accused sensor features in 2014-2018—the earliest a decade before the '948 Patent's application was even filed and before any of the related challenged patents issued. *See* Exs. 1084-1086; Ex. 1087, Compl. ¶49 (accusing sensors in Ex. 1084).

W&W also cannot claim that it did not expect patentability challenges once it filed a lawsuit. The '948 Patent is an AIA patent and subject to post-grant proceedings, which W&W knew at filing could potentially be subject to IPRs/PGRs during litigation. Here, where W&W had already sued Samsung when the '948

Patent issued, W&W must have known that Samsung would file this PGR. Both the Federal Circuit and Supreme Court have recognized that a patent's age does not create settled expectations against a validity challenge. Indeed, IPR proceedings “serve the purpose of correcting prior agency error of issuing patents that should not have issued in the first place,” like reexaminations have “for nearly four decades.” *Celgene Corp. v. Peter*, 931 F.3d 1342, 1360-63 (Fed. Cir. 2019); *see also Genentech, Inc. v. Hospira, Inc.*, 946 F.3d 1333, 1343 (Fed. Cir. 2020).

3. Citations to Related Applications Do Not Provide Notice of the '948 Patent

W&W argues “constructive notice” of the '948 Patent because the USPTO cited “*applications related to* the '948 Patent”—but not the application or published application of the '948 Patent or the '948 Patent itself—during prosecution of Samsung patents. DD Req. 12-14 (emphasis added). Foremost, W&W filed the '948 Patent more than six years after this alleged “notice,” and the '948 Patent has at least six CIPs in the priority chain between it and the application on which W&W relies for “notice.” Ex. 1001, pp. 1-2 (item (60)). Courts have expressly rejected similar arguments, with Judge Gilstrap criticizing the theory as “too nebulous” to provide notice. *See Intell. Ventures I LLC v. T-Mobile USA, Inc.*, Hearing Tr. 61:2-9, No. 2:17-cv-00577-JRG, Dkt. 297 (E.D. Tex. Jan. 3, 2019).

W&W's cases (*Dabico* and *iRhythm*) do not show otherwise. DD Req. 12-13.

Dabico mentions searchable USPTO systems, but never suggests that this alone creates notice. *Dabico Airport Sols. Inc. v. AXA Power ApS*, IPR2025-00408, Paper 21 at 2-3 (Director June 18, 2025). And, in *iRhythm*, the petitioner cited the “then-pending application that issued as the challenged patent” in an IDS. *iRhythm Techs., Inc. v. Welch Allyn, Inc.*, IPR2025-00363, Paper 10 at 3 (Director June 6, 2025). Here, not only was the application of the ’948 Patent not cited, but it was not even public until after W&W sued Samsung. *See* Ex. 1001, cover (items (21), (22)). No USPTO search could have revealed the ’948 Patent or its application. No “constructive notice” exists, weighing against denial.

4. W&W’s Alleged “Investment” Does Not Create Settled Expectations

W&W’s alleged “investment, time, and resources dedicated to research, development, [and] trials” does not favor denial. DD Req. 14-15 (citation omitted). W&W identifies only alleged conception in April 2013, then “fabricat[ing] proof of concept” a year later in 2014, then nothing until November 2017 with a years-delayed publication, then “conduct[ing] computer simulations” years later in 2024. *Id.*, 14-15; Ex. 2009, 3. W&W’s alleged publication in 2017 fares no better. DD Req. 15. W&W’s significant delays and gaps show disinterest, not investment or development. The Director in *Amgen Inc. v. Bristol-Myers Squibb Co.* required “an extraordinary amount of investment” that “correlates to settled expectations.”

IPR2025-00601, Paper 9 at 2-3 (Director July 24, 2025). Here, there is only the “absence of such information,” which weighs against denial. *Id.*

B. Samsung’s Settled Expectations Outweigh W&W’s Expectations

Even if W&W could prove it has settled expectations—it does not—Samsung had no reason to anticipate assertion of any challenged patent, and W&W admits that it “has not offered for sale or sold any product that embodies any claim of any of the Asserted Patents, nor has it licensed the Asserted Patents to any third party” (Ex. 1087, Compl. ¶36), which weighs against denial. *See supra* § IV.A.2; *Apple Inc. v. Allani*, IPR2025-00856, Paper 11 at 3 (Director Sep. 5, 2025); *cf. Globus Med., Inc. v. Spinelogik, Inc.*, IPR2025-00225, Paper 8 at 2 (Director June 12, 2025) (referring to merits panel when petitioner showed it did not expect enforcement).

V. THE *FINTIV* FACTORS DO NOT SUPPORT DENIAL

A. Factors 1-3 Do Not Outweigh the Office’s Preference for Instituting Early PGR Challenges

W&W argues for Factors 1-3 that “a stay is unlikely” (Factor 1), trial is likely to commence before FWD (Factor 2), and “the parties will already have invested significant resources in the District Court Action” (Factor 3). DD Req. 4-7. But W&W’s Request cites only *IPR* decisions, not *PGR* decisions. *See id.* As explained in Section II, the Office has a stated preference for instituting PGR challenges even under such facts. Factor 2 should not be given any weight. The ’948 Patent issued after the litigation was filed and was first asserted six months after the original

complaint was filed. *See* Ex. 1090, ¶¶26, 104-124 (First Amended Complaint). W&W's delay in asserting the '948 Patent prejudiced Samsung by artificially shortening the time between assertion and trial. W&W's delay should not be countenanced, especially in light of Samsung's expeditious filing of this PGR six months after the '948 Patent issued.

B. Factor 4: Petitioners' Broad Stipulation Weighs Heavily Against Denial Because No Overlap Is Possible

W&W argues that “‘the same or substantially the same claims, grounds, arguments, and evidence’ ... are at issue in the parallel District Court Action.” DD Req. 7-9 (citation omitted). That is wrong. Samsung's stipulation removes any grounds that were raised or reasonably could have been raised in this PGR, eliminating *all* potential overlap identified by W&W.⁴ Paper 9. W&W's allegation that the same references *may* be considered for *different* patents (DD Req. 8-9) does not change the fact that there is no overlap for the '**948 Patent**. Samsung's broad stipulation is the same as in *Toyota*, which the Director found “covers nearly all invalidity defenses in district court,” “reduces the concern of inconsistent outcomes

⁴ W&W wrongly states that “Samsung's stipulation is limited by its Petition's carve-out.” DD Req. 8 n.2. Samsung's updated stipulation removes these carve-outs and includes any ground that reasonably could have been raised. *See* Paper 9.

or significant duplication of efforts,” and “*strongly weighs against* discretionary denial.” *Toyota*, PGR2025-00041, Paper 9 at 2-3 (emphasis added).

C. Factor 5: The Parties Are the Same

Recent decisions have indicated this is neutral or only slightly favors denial. *Innolux Corp. v. Phenix Longhorn LLC*, IPR2025-00043, Paper 10 at 13 (May 15, 2025).

D. Factor 6⁵: Strong Merits Show the Office Erred by Overlooking the Conventionality of the Alleged Point of Novelty

1. The Petition’s Strong Merits Weigh Against Denial

The Petition has strong merits, and W&W does not identify any weakness in the Petition’s grounds, which favors not denying institution. *E.g.*, *Samsung Elecs. Co. v. SiOnyx, LLC*, IPR2024-01431, Paper 21 at 17 (Apr. 10, 2025) (granting institution when “Patent Owner provides very little argument, on the merits”).

W&W criticizes the Petition’s reliance on Dr. Lebby to show how the prior art discloses or renders obvious an “increase[] by a factor of at least 1.1 the absorption of the light.” DD Req. 15-16. But Dr. Lebby does not “fill in” gaps as W&W alleges (*id.*)—there are none. Dr. Lebby provides a detailed explanation of how, *inter alia*, a POSITA “would have understood that *Kuboi*’s photodetectors with

⁵ W&W’s Factor 6 analysis refers to Section II.C. DD Req. 10 (citing *id.*, 15-16 (§II.C)). Both are addressed here.

organic material in their holes would increase the absorption of the light ... in at least some of *Kuboi*'s photodetectors by at least 1.1 times compared to *like* photodetectors lacking said holes.” Ex. 1002, ¶187. *See Unification Techs. LLC v. Micron Tech. Inc.*, No. 2023-1348, 2024 WL 3738401, at *7 (Fed. Cir. Aug. 9, 2024) (affirming reliance on expert’s opinion explaining “how an ordinarily skilled artisan would have understood [the prior art’s] description of” the claim term (citations omitted)). W&W’s claiming of properties already part of the prior art cannot impart patentability.

2. The Board Is Best Suited to Handle the Complex Technology Here

The '948 Patent and other challenged patents present uniquely complicated facts that make the PTAB the best forum to decide their validity. The priority chain of the '948 Patent includes multiple continuation-in-part applications, making any priority analyses complex. The Board is best equipped to address the issues that arise from the complex webs of applications. *Tesla, Inc. v. United States*, IPR2025-00341, Paper 12 at 2-3 (Director June 13, 2025) (“complex and diverse litigation proceeding[s]” favor institution).

VI. W&W’S ARGUMENTS UNDER 35 U.S.C. § 325(d) FAIL AND HIGHLIGHT THE OFFICE’S PRIOR MATERIAL ERROR

A. W&W’s Relevance/Cumulativeness Argument Fails Because It Does Not Compare *Kuboi* to Any Reference Used in Prosecution

W&W argues that *Kuboi* is “cumulative” and “less relevant to patentability

than any of the references cited during prosecution or in the Petition.” DD Req. 17-18. But W&W does not compare *Kuboi* to any reference presented during prosecution. *Regeneron Pharmaceuticals, Inc. v. Kymab Ltd.*, IPR2019-01579, Paper 9 at 10-11 (Mar. 20, 2020), is distinguishable because, there, the asserted prior art “largely overlap[ped] with arguments previously presented during prosecution.” Not so here.

W&W argues that *Kuboi* operates *differently* than the ’948 Patent and other prior art because, according to W&W, *Kuboi*’s “light shielding film 19” “*blocks* the Si semiconductor regions from receiving photons.” DD Req. 17-18 (citation omitted). This tacitly admits that the Petition presents arguments that are not “the same or substantially the same prior art [or] arguments” as those previously before the Office. Regardless, W&W is also incorrect because *Kuboi*’s operation falls squarely within the claims’ scope, as explained in the Petition. *See, e.g.*, Pet. 14-52.

B. *Vasylyev* Was Not Applied by the Examiner for the ’948 Patent

W&W asserts that it “disclosed *Vasylyev* to the Examiner in a September 3, 2024, IDS,” and that “the same Examiner ... applied *Vasylyev* in a non-final rejection in a *related* W&W’s patent” (but not the ’948 Patent’s application). DD Req. 18 (citing Ex. 2022, 21-22) (emphasis added). But W&W did not contest the Examiner’s application of *Vasylyev* in that related application. In the subsequent interview, the applicant and Examiner discussed only the *Kwark* and *Shigata*

references, and the Examiner's amendments did not modify claims rejected using *Vasylyev*. Compare Ex. 1094, 10 (Interview Summary), and *id.*, 6-8 (Examiner's Amendment, Reasons for Allowance), with Ex. 2022, 21-22, 24-27 (applying *Vasylyev* to claims 9, 16, 17). The Office's undisputed application of *Vasylyev* in the related application confirms its relevance in this proceeding and weighs against discretionary denial.

C. The Petition Relies on *Shinohara*—a Secondary Reference—for More than Solid Dielectric Insulating Film

W&W incorrectly contends that *Shinohara* is cumulative to *Baba* for some dependent claims. DD Req. 19. The Petition relies on *Shinohara* for other teachings, including monolithic integration, which is different from *Baba*'s fabrication of two semiconductor chips separately that are bonded together. Pet. 123-138; Ex. 2021, [0102]-[0133]. *Shinohara* is not cumulative.

VII. CONCLUSION

Petitioners respectfully request referral of this Petition to the merits panel.

Date: December 5, 2025

Respectfully submitted,

/ Joshua L. Goldberg /

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Lead Counsel

Reg. No. 59,369

CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing **Petitioners' Opposition to Patent Owner's Request for Discretionary Denial of Institution** was served on December 5, 2025, via email directed to counsel of record for the Patent Owner at the following:

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Patent Owner has consented to service by email.

Dated: December 5, 2025

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