

Filed on behalf of BeSang Inc.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICRON TECHNOLOGY, INC.,
MICRON SEMICONDUCTOR PRODUCTS, INC., and
MICRON TECHNOLOGY TEXAS, LLC,
Petitioners,

v.

BESANG INC.,
Patent Owner.

Case No. IPR2023-00900
U.S. Patent No. 7,378,702

**PATENT OWNER'S MOTION TO STRIKE
EXHIBITS 1033, 1035, 1041 (¶¶ 12-70), 1047-1050, 1052-1055 AND 1057-1062
AND PORTIONS OF PETITIONERS' REPLY BRIEF**

I. INTRODUCTION

Accompanying its reply brief, Micron submitted 30 new exhibits, including a 47-page “supplemental” expert declaration. EX1033-1062. BeSang respectfully moves to strike as improper reply evidence Exhibits 1033, 1035, 1041 (specifically ¶¶ 12-70), 1047-1050, 1052-1055, and 1057-1062, and the portions of Petitioners’ reply brief (Paper 20, “Reply”) relying on these exhibits. 37 C.F.R. § 42.23(b). The Board authorized this motion via email on May 15, 2024.

As this IPR concludes, Micron improperly seeks to revise the grounds in its Petition and walk back the admissions of its own expert, Dr. Lee, confirming patentability of the ’702 Patent. Rather than responding to BeSang and pointing out how Micron’s Petition satisfied its burden, Micron’s new exhibits and Lee reply declaration (EX1041) instead introduce new unpatentability theories, violating the AIA, Board rules, and the APA and prejudicing BeSang. The Board should strike Micron’s improper new theories and exhibits under Section 42.23(b).

II. LEGAL STANDARDS

The Board rejects new unpatentability arguments not raised initially in the Petition. *See, e.g., Intelligent Bio-Sys. v. Illumina Cambridge*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (Board may disregard reply arguments relying on “new evidence... ‘not relied upon to support unpatentability in the Petition’” (citation omitted)); *Acceleration Bay v. Activision Blizzard*, 908 F.3d 765, 775 (Fed. Cir. 2018) (Board

need not consider “a new obviousness argument for this limitation that could have been made in the petition” but “was not made in the petition”); *Google v. Koninklijke Philips*, 789 F. App’x 874, 876-77 (Fed. Cir. 2019) (affirming Board decision “declining to consider... obviousness theory that was outside the scope of the petition”).

“[T]he expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition.” *Intelligent Bio-Sys.*, 821 F.3d at 1369; 35 U.S.C. § 312(a)(3). A reply is “limited to a true rebuttal role,” *Ariosa Diagnostics v. Verinata Health*, 805 F.3d 1359, 1367 (Fed. Cir. 2015), and “evidence necessary to make out a prima facie case of unpatentability may not be introduced for the first time in the reply brief.” *Dexcom v. WaveForm Techs.*, IPR2016-01680, 2018 WL 1137089, at *13 (P.T.A.B. Feb. 28, 2018).

A “reply may only respond to arguments raised in the... patent owner preliminary response, patent owner response, or decision on institution.” 37 C.F.R. § 42.23(b). “‘Respond,’ in the context of 37 C.F.R. § 42.23(b), does not mean proceed in a new direction with a new approach as compared to the positions taken in a prior filing.” Consol. Trial Practice Guide (“TPG”) at 74 (Nov. 2019). Portions of a reply “rais[ing] a new issue or belatedly present[ing] evidence may not be considered,” TPG at 74, and may be stricken, *id.* at 81.

III. ARGUMENT

A. Micron’s New Theories For The Watanabe Grounds

For the first time on reply, Micron presents new unpatentability theories and exhibits asserting that: (1) electromagnetic induction heating (“EMIH”) saves Watanabe in Grounds 1-2 and 5-6; (2) optical or mechanical alignment provided a rationale for combining Lee and Watanabe in Grounds 5-6; and (3) the Petition did not rely on DRAM to show nonvolatile memory cells required by Claim 13[b] in Grounds 1-2.

1. New Theory On Electromagnetic Induction Heating (EX1041 ¶¶ 35-44, 50, 70; EX1048-1050; EX1052-1053; EX1059-1060)

BeSang pointed out that the Petition failed to meet its burden because Watanabe’s stacking method used “high-temperature bonding” of 900-1000°C, plainly exceeding the thermal budget of Lee’s devices. *E.g.*, Paper 18 (“POR”) at 24-27, 62-63; EX2028 at 123:9-124:7; EX2029 ¶¶ 70-77. On reply, Micron now asserts that EMIH provided a rationale for combining Lee and Watanabe, Reply at 14-15, offering twelve paragraphs of declaration testimony and citing seven new exhibits, *see* EX1041 ¶¶ 35-44, 50, 70 (citing EX1048-1050, EX1052-1053, and EX1059-1060). The Reply also asserts that EMIH enabled Watanabe’s stacking method. Reply at 25-26.

The Petition never mentioned EMIH or Micron’s new theories, Pet. at 13-26, 69-74, as is apparent from the sheer volume of new testimony and exhibits Micron presents for the first time. *See* TPG at 74 (new evidence and new rationale are a clear “indication[] that a new issue has been raised in a reply”). If Micron intended to rely on EMIH, it should have presented its arguments and evidence with its Petition. *See, e.g., Dexcom*, 2018 WL 1137089, at *13 (evidence necessary for a prima facie case of unpatentability must be presented in Petition).

Micron’s new theory and exhibits should be stricken for exceeding the proper scope of reply. *Intelligent Bio-Sys.*, 821 F.3d at 1369-70; *Juniper Networks v. Swarm Tech.*, IPR2021-01445, Paper 64 at 12-14 (P.T.A.B. Apr. 20, 2023) (“[T]he ability to respond does not give Petitioner free reign to expand and revise its arguments by adding new features and configurations not previously discussed in the Petition.”).

2. New Theory On Optical Or Mechanical Alignment (EX1041 ¶¶ 45-50; EX1054-1055)

BeSang also explained the Petition failed to meet its burden because Watanabe provided no teaching on how to accurately align its stacked layers. *E.g.*, POR at 28-30. Both parties’ experts agreed that alignment is an important step in semiconductor processing; *id.* at 28; EX2028 at 109:20-110:16; EX2029 ¶ 78; and

Dr. Lee explained potential misalignment during the fabrication process was a critical issue. EX2028 at 109:20-112:8.

On reply, Micron seeks to undo Dr. Lee’s admissions and assert for the first time that one of skill would have used “mechanical” or “optical alignment.” *Compare* Reply at 16 (citing EX1054 and EX1055); EX1041 ¶¶ 45-50 *with* Pet. at 69-74. Petitioner’s reply brief is for responding to a patent owner’s arguments, 37 C.F.R. § 42.23(b), not the admissions of petitioner’s own expert. Micron’s new theory and exhibits should be stricken. *See, e.g., Intelligent Bio-Sys.*, 821 F.3d at 1369-70; *Juniper Networks*, Paper 64 at 12-14.

3. New Theory On Watanabe’s DRAM Embodiments (EX1041 ¶¶ 64-66)

BeSang noted that the Petition failed to meet its burden to establish the nonvolatile “memory cells” limitation in 13[b] was met by Watanabe’s volatile DRAM embodiments. POR at 58-59. On preliminary reply, Micron asserted its “Petition relies only on Watanabe’s nonvolatile embodiment” for Grounds 1-2, Paper 7 at 4-5, which is plainly untrue, Pet. at 16-21, and the Board expressed its concerns with this ground, Paper 9 (“I.D.”) at 16.

On reply, Micron seeks to revise its Petition by offering a new theory that it relied on Figures 5 and 6 “to illustrate how Watanabe’s ‘stacking’ and ‘laminating’ (*i.e.*, sequential deposition) methods apply to the EPROM memory cell structure

shown in Figure 7.” Reply at 23. Micron’s shifting theories on combining Watanabe’s DRAM and EPROM embodiments only show the Petition failed to meet its burden, and should be stricken as improper new reply arguments. *Compare* Reply at 22-24, EX1041 ¶¶ 64-66 with Pet. at 13-26; *Intelligent Bio-Sys.*, 821 F.3d at 1369-70; *Juniper Networks*, Paper 64 at 12-14.

B. Micron’s New Theories For The Lee Grounds

1. New Unpatentability Theory Based On Endoh (EX1041 ¶¶ 51-59; EX1057-1058)

The Petition’s theory for Grounds 4 and 6 has always been modifying Lee with Endoh. Pet. at 63 (Ground 4: “modify[ing] Lee’s pillar structure to use the NAND architecture and a serial connection as taught by Endoh”); *id.* at 65 (similar); *id.* at 73 (Ground 6 relying on Ground 4). At deposition, Dr. Lee confirmed that this was the Petition’s theory, EX2028 at 92:22-94:11, but could not explain how to modify Lee’s NOR memory array to use Endoh’s NAND architecture, *id.* at 94:6-98:11; POR at 43-45, 48.

On reply, Micron switches theories to rely on Endoh as its lead reference. Based on 9 paragraphs of new declaration testimony and two new exhibits, it argues for the first time that one of skill “would have begun with the teachings of NAND architecture, such as Endoh’s, and would have implemented the nonvolatile memory cells of Watanabe’s or Lee’s array in series within that architecture.” Reply at 19; *see also* EX1041 ¶¶ 51-59 (citing EX1057-1058).

This is problematic for several reasons. First, the Petition never set forth a theory based on implementing *Watanabe's* memory cells in a NAND architecture. Pet. at 73-74. Second, starting from Endoh's NAND architecture, and providing a motivation for one of skill in the art to do so, is nowhere in the Petition and should be stricken as improper on reply. Pet. at 59-65, 73-74; *Intelligent Bio-Sys.*, 821 F.3d at 1369-70; *Juniper Networks*, Paper 64 at 12-14.

2. Micron Cannot Recant Its Own Expert's Testimony About Lee (EX1041 ¶¶ 34, 62-63)

Micron's Reply seeks to respond to its own expert's admissions:

Dr. Lee admitted that the Lee reference preferred "monolithic" structures. POR at 33-34; EX1007 at 11:25-32; EX2028 at 59:12-61:2. On reply, Micron and Dr. Lee reverse course and now assert that Lee included no such preference. Reply at 13-14; EX1041 ¶ 34.

Dr. Lee also admitted at his deposition that Lee's Figure 12B did not include pillars with two memory cells and thus did not satisfy Claims 16-17. EX2028 at 76:15-79:19; EX2024; POR at 54-55. Again Micron pivots, now presenting new testimony by Dr. Lee that "two memory cells could together form a single pillar." Reply at 22; EX1041 ¶¶ 62-63.

Again, a reply is meant to respond to a patent owner's arguments, not argue against the admissions of petitioner's own expert. 37 C.F.R. § 42.23(b). Micron's new declaration testimony and argument should also be stricken.

C. Micron Offers New Claim Construction Arguments, Exhibits, And Expert Testimony On Reply (EX1041 ¶¶ 12-33, 60-63, 67-69; EX1033; EX1035; EX1047; EX1057; EX1060-1062)

Despite bearing the burden to present proposed claim constructions in the Petition, *Maxlite v. Jiaxing Super Lighting*, IPR2020-00181, 2020 WL 5803082, at *2 (P.T.A.B. Sept. 29, 2020) (citing 37 C.F.R. § 42.104(b)(3)-(5)), Micron and Dr. Lee waited until the Reply to provide construction of “stackable add-on layer” and “SOI pillar,” Reply at 4-13; EX1041 ¶¶ 12-33.

Neither offered a construction of “stackable add-on layer” in the Petition, Pet. at 12-13; EX1002 ¶¶ 35-37, even though both Micron and Dr. Lee recognized that construction of this term was determinative for some grounds, POR at 12 (citing Pet. at 48 n.5; EX2028 at 180:9-183:4). Now on reply, Micron provides a new interpretation of this term and submits three exhibits and twelve paragraphs of new declaration testimony. Reply at 4-9; EX1041 ¶¶ 12-23 (citing EX1033, EX1035, and EX1060).

Micron and Dr. Lee likewise presented no construction of “SOI pillar” with the Petition. Pet. at 12-13; EX1002 ¶¶ 35-37. Under cross-examination Dr. Lee admitted he did not “know what the plain and ordinary meaning is for ‘pillar,’”

EX2028 at 66:22-67:13, yet now on reply offers a new construction of “SOI pillar,” adds ten paragraphs of new testimony, and cites four new exhibits. Reply at 9-13; EX1041 ¶¶ 24-33 (citing EX1047, EX1057, EX1061-1062).

These constructions, and Micron’s unpatentability theories based on them, should have been provided in the Petition. If Micron wanted to take these positions, it should have presented them long before now. *See* Reply at 20-22, 24-25; EX1041 ¶¶ 60-63, 67-69. The Board’s request to define these terms, I.D. at 9 n.5, 17, does not alter that (1) the AIA “statute confirms, too, that the petitioner’s petition... is supposed to guide the life of the litigation,” *SAS Inst. v. Iancu*, 138 S. Ct. 1348, 1356 (2018), (2) Board rules specify the proper content of a reply, 37 C.F.R. § 42.23(b), and (3) the Administrative Procedure Act (“APA,” 5 U.S.C. § 551 *et seq.*) requires providing patent owner notice and an opportunity to respond to Micron’s Petition, expert testimony, and supporting exhibits.

D. Micron’s New Reply Theories And Exhibits Prejudice BeSang

Micron’s new reply theories and exhibits should be stricken because they prejudice BeSang. BeSang has only one brief left: an abbreviated sur-reply with no opportunity to present new evidence. 37 C.F.R. 42.24(c)(4); TPG at 73-74. Micron’s delay deprived BeSang of a full and fair opportunity to respond to these arguments. *Renesas Elecs. Corp. v. Lone Star Silicon Innovations*, IPR2017-01869, 2019 WL 1373644, at *18 (P.T.A.B. Mar. 25, 2019) (“the filing of a sur-reply does

not cure or excuse a reply brief that exceeds the [permitted] scope”). Micron’s new reply theories and exhibits should be stricken so its gamesmanship is not rewarded. *Microsoft Corp. v. IPA Techs.*, IPR2019-00812, 2020 WL 6106303, at *60 & n.30 (P.T.A.B. Oct. 15, 2020) (declining to consider petitioner’s new claim construction “arguments and evidence... presented belatedly in the Reply”).

“[T]he expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute. While the Board’s requirements are strict ones, they are requirements of which petitioners are aware when they seek to institute an IPR.” *Intelligent Bio-Sys.*, 821 F.3d at 1369. Micron’s decision to file a superficial and incomplete Petition provides no basis to violate the AIA, Board rules, and the APA to attempt to meet its burden for the first time on reply. 37 C.F.R. § 42.23(b); TPG at 74.

IV. CONCLUSION

BeSang respectfully requests that the Board strike Exhibits 1033, 1035, 1041 (specifically ¶¶ 12-70), 1047-1050, 1052-1055, and 1057-1062, and the portions of Micron’s reply brief (Paper 20) relying on them.

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a true copy of the foregoing **PATENT OWNER’S MOTION TO STRIKE EXHIBITS 1033, 1035, 1041 (¶¶ 12-70), 1047 1050, 1052-1055 AND 1057-1062 AND PORTIONS OF PETITIONERS’ REPLY BRIEF** is being served electronically on May 29, 2024 to the following lead and backup counsel for Petitioners to the following email addresses:

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