

Case IPR2024-00534
U.S. Patent No. 9,138,862

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,
Petitioner

v.

Chien-Min Sung,
Patent Owner

Case IPR2024-00534
U.S. Patent No. 9,138,862

**PETITIONER SAMSUNG'S
AUTHORIZED RESPONSE TO DIRECTOR REVIEW REQUEST**

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1001	U.S. Patent No. 9,138,862 (“’862 Patent”)
1002	Declaration of Dr. Stanley Shanfield
1003	File History of the ’862 Patent
1004	U.S. Patent Application Publication No. 2007/0060026 (“Sung’026”)
1005	“The Organic Diamond Disk (ODD) for dressing of Polishing Pads of Chemical Mechanical Planarization,” International Conference on Planarization / CMP Technology, 25-27 October 2007 (“SungICPT”)
1006	U.S. Patent Application Publication No. 2008/0087644 (“Nishioka”)
1007	International Patent Application Publication No. WO 2008/049019 (“Lin”)
1008	U.S. Patent Application Publication No. 2009/0001581 (“Kim”)
1009	U.S. Patent Application Publication No. 2009/0117692 (“Koyama”)
1010	U.S. Patent No. 5,036,015
1011	Ishizuka et al. “PCD Dressers for Chemical Mechanical Planarization with Uniform Polishing” Proceedings of International Conference on Leading Edge Manufacturing in 21 st Century: LEM21, 2007, Volume 2007.4
1012	U.S. Patent Application Publication No. 2008/0292869 (Sung’869)
1013	Fenna, Donald. “Hardness Numbers,” <i>A Dictionary of Weights, Measures, and Units</i> , 1st ed., Oxford University Press, 2004.
1014	Tsai et al., “Effect of CMP conditioner diamond shape on pad topography and oxide wafer performances,” <i>Int. J. Adv. Manuf. Technology</i> , 55: 253-262 (2011)
1015	Pysher et al. “Design, Characteristics and Performance of Diamond Pad Conditioners”, Materials Research Society Symposium Procedures, Vol. 1249, 2010 (“Pysher”)
1016	<i>Design, Characteristics and Performance of Diamond Pad Conditioners</i> . SpringerLink. https://link.springer.com/article/10.1557/PROC-1249-E02-04
1017	Exhibit 4 of Complaint in <i>Sung v. Samsung Electronics Co., Ltd. et al</i> , 4-23-cv-00752

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1018	Scheduling Order in <i>Sung v. Samsung Electronics Co., Ltd. et al</i> , 4-23-cv-00752
1019	Electronic Copy of SungICPT obtained from IEEE, the publisher
1020	Records for <i>Proceedings ICPT 2007</i> available at https://search.worldcat.org/title/198200505 from WorldCat; at https://d-nb.info/985874066 (bibliographic record and MARC21-XML record) from the online catalog of the German National Library; and from OCLC FirstSearch (subscription required for access)
1021	TIB records for <i>Proceedings ICPT 2007</i> , available at https://search.worldcat.org/title/552588043 from WorldCat; at https://opac.tib.eu/DB=1/LNG=EN/CLK?IKT=12&TRM=585918058 from the classic catalog of TIB; at https://www.tib.eu/en/search/id/TIBKAT:585918058/Proceedings-ICPT-International-Conference-on-Planarization?cHash=aa6c9dc952dc92d0d78d53ec988dc7a5 from the TIB portal; and from OCLC FirstSearch (subscription required for access)
1022	Program and Invitation, ICPT International Conference on Planarization/CMP Technology, October 25 – 27, 2007, Hilton Hotel, Dresden, Germany, available at https://www.yumpu.com/en/document/read/19588721/program-and-invitation-eusar
1023	ICPT 2007 Conference Registration website, archived by Internet Archive on October 13, 2007, available at https://web.archive.org/web/20071013155043/http://icpt2007.com/Conferences_en/ICPT+2007/Conference+Registration/ from Internet Archive
1024	ICPT 2007 Program order form webpage, archive by Internet Archive on November 3, 2007, available at https://web.archive.org/web/20071103025949/http://icpt2007.com/Conferences_en/ICPT+2007/Conference+Program/Program+Order+Form.htm
1025	Online catalog of the German National Library archived on January 1, 2011 by Internet Archive, available at https://web.archive.org/web/20110101165839/www.d-nb.de/ from Internet Archive

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1026	GetInfo Portal of the German National Library of Science and Technology (TIB), archived on October 22, 2007 by the Internet Archive, available at https://web.archive.org/web/20071022114354/http://www.tib-hannover.de/en/getinfo-portal/ from Internet Archive
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1030	<i>Chien-Min Sung v. Texas Instruments Inc.</i> , Case No. EDTX-4-23-cv-00753 (E.D. Tex.), 26 (TI's Motion for Summary Judgment of Invalidity)
1031	<i>Chien-Min Sung v. Texas Instruments Inc.</i> , Case No. EDTX-4-23-cv-00753 (E.D. Tex.), 68 (Order To Stay the Case Pending Resolution of TI's Motion for Summary Judgment).
1032	<i>Chien-Min Sung v. Samsung Electronics Co. Ltd., et al.</i> , Case No. 4:23-cv-00752 (E.D. Tex.), 56 (Motion to Stay Pending Resolution of Texas Instruments Incorporated's Motion for Summary Judgment)
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1037	<i>Chien-Min Sung v. Samsung Electronics Co. Ltd., et al.</i> , Case No. 4:23-cv-00752 (E.D. Tex.), 67 (Defendant's Reply)
1038	<i>Chien-Min Sung v. Samsung Electronics Co. Ltd., et al.</i> , Case No. 4:23-cv-00752 (E.D. Tex.), 72 (Plaintiff's Sur-Reply)

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1039	<i>In re: Chien-Min Sung Subpoena Upon 3M Company</i> , Case No. 0:2023mc00104 (D. Minnesota), 1 (3M’s Nov. 16, 2023 Motion To Quash Subpoena In The District of Minnesota)
1040	<i>In re: Chien-Min Sung Subpoena Upon 3M Company</i> , Case No. 0:2023mc00104 (D. Minnesota), 15 (Dr. Sung’s Nov. 22, 2023 Cross-Motion To Compel And Motion For Sanctions)
1041	<i>In re: Chien-Min Sung v. 3M Company</i> , Case No. 6:23-mc-00002 (N.D. Tex.), 1 (Dr. Sung’s Nov. 27, 2023 Motion To Compel In The Northern District of Texas)
1042	<i>In re: Chien-Min Sung Subpoena Upon 3M Company</i> , Case No. 0:2023mc00104 (D. Minnesota), 38 (Court Entry Showing A Discovery Hearing Before The Court In The District Of Minnesota)
1043	Judge Jordan’s Time To Order Motion of Summary Judgement Statistics
1044	Marked up M. Y. Tsai & Y. S. Liao (2009) Dressing Characteristics of Oriented Single Diamond on CMP Polyurethane Pad, <i>Machining Science and Technology</i> , 13:1, 92-105
1045	Marked up Tsai et al., “Effect of CMP conditioner diamond shape on pad topography and oxide wafer performances,” <i>Int. J. Adv. Manuf. Technology</i> , 55: 253-262 (2011)
1046	Marked up M. Y. Tsai et al., Novel Diamond Conditioner Dressing Characteristics of CMP Polishing Pad, <i>International Journal of Machine Tools & Manufacture</i> 49 (2009) 722–729
1047	Deposition of Dr. Tsai in IPR2024-00533, Vol I
1048	Deposition of Dr. Tsai in IPR2024-00533, Vol II
1049	Deposition of Dr. Tsai in IPR2024-00534
1050	Single Diamond Dressing Characteristics of CMP Polyurethane Pad” <i>Key Engineering Materials</i> Vol 329 (2007) pp 151-156
1051	PCD Pad Conditioners for Low Pressure Chemical Mechanical Planarisation of Semiconductors” <i>Int. J. Abrasive Technology</i> , Vol. 1, Nos. 3/4, 2008
1052	“Dressing Behaviors of PCD Conditioners on CMP Polishing Pads” <i>Advanced Materials Research</i> Vols 76-78 (2009) pp 201-206
1053	“Mosaic Diamond Pad Conditioners for Improved CMP Performance” <i>ECS Transactions</i> , 27 (1) 575-580 (2010)
1054	“The Black Pad with Graphite Impregnation for CMP” <i>ECS Transactions</i> , 27 (1) 581-586 (2010)

Petitioner Exhibit No.	DESCRIPTION
1055	“The CMP by Polishing with GiP Dressed by BODD” <i>Advanced Materials Research</i> Vols 126-128 (2010) pp 1013-1018
1056	“Organic diamond disk versus brazed diamond disk for dressing a chemical–mechanical polishing pad” <i>Diamond & Related Materials</i> 23 (2012) 144–149
1057	“Development of a novel cooling system-assisted minimum quantity lubrication method for improvement of milling performance” <i>Journal of the Chinese Institute of Engineers</i> , 2015, Vol. 38, No. 3, 322–331
1058	U.S. Patent Application Publication No. 2010/0248595 (“Dinh-Ngoc”)
1059	U.S. Application No. 11/223,786 (’786 Application)
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I. INTRODUCTION

Director Review is reserved for exceptional circumstances—it is not a vehicle for relitigating the record.¹ The Final Written Decision (Paper 36, “FWD”) grounded its findings in the explicit teachings of the prior art reference (Sung’026) corroborated by confirmatory testimony from both parties’ experts. Patent Owner nevertheless argues that the Board abused its discretion in four separate ways. Each argument fails.

First, beginning with limitation [1D], the Patent Owner contends that the Board “ignored in its conclusion that ... Sung’026 disclosed nothing about the structure producing the cutting depth it disclosed.” Request (Paper 37), 7. The record shows otherwise. In addressing limitation [1C], the FWD already explained that the CMP pad dresser with the structural characteristics claimed in limitation [1C] also produces a cutting depth. The only added analysis in the Board’s analysis for limitation [1D] was whether there was any dispute that the specific cutting depth amount (*i.e.*, “maximum cutting depth of about 60 microns”) was taught by Sung’026. And on that specific point, the Board correctly noted that there is no dispute between the parties that a cutting depth of about 10-20 microns meets the claimed “maximum cutting depth of about 60 microns” recited in limitation [1D].

¹ See www.uspto.gov/patents/ptab/decisions/director-review-process, §II.B.

Board's decision not to repeat the analysis it just carried out in limitation [1C] under the very next sub-heading for limitation [1D] is not an abuse of discretion.

Second, with respect to limitation [1A], the Patent Owner argues that the Board abused its discretion by supplementing Sung'026's disclosure to meet "*pressing* the dresser against the pad." Request, 8-10. That is incorrect. The Board found that Sung'026 teaches frictional/mechanical forces at the interface between the CMP pad dresser and the CMP pad. That frictional/mechanical force generates a "downward force," which a POSITA would readily understand to teach "pressing." Patent Owner's expert corroborated that understanding by admitting that a load (including the dresser's own weight) causes pressing of the CMP pad dresser against the CMP pad when CMP pad conditioning is performed. Relying on the teachings of Sung'026, as corroborated by Patent Owner's expert's admissions, is not an abuse of discretion.

Third, for limitation [1C], Patent Owner argues the Board abused its discretion by combining "separate embodiments," because there is no single disclosure "arranged or combined as recited." Request, 10-12. But Sung'026 teaches combining these different embodiments into a single CMP pad dresser and the Patent Owner's own expert admitted that Sung'026 teaches the "combinability" of the embodiments (same orientation/shape, same height, controlled penetration depth). Relying on the teachings of Sung'026, as corroborated by Patent Owner's

expert's admissions regarding what Sung'026 actually teaches is not an abuse of discretion.

Finally, Patent Owner argues that the Board abused its discretion by improperly conducting an obviousness analysis for limitations [1A] and [1D]. Request, 12-13. But Patent Owner articulates no explanation how or why the Board conducted an obviousness analysis for limitations [1A] and [1D]. Indeed, as discussed above, the Board determined that Sung'026 anticipates these limitations based on the explicit teachings found in Sung'026 as further supported by the Patent Owner's own expert's admissions.

In sum, Board did not abuse its discretion because the Board's findings in the FWD were (1) based on the explicit teachings found in Sung'026 and (2) supported by the testimony proffered by both parties' experts, including numerous admissions proffered by Patent Owner's own expert.

II. ARGUMENT

A. The Patent Owner Ignores The Relevant Analysis Carried Out By The Board In Limitation [1C] To Argue The Board Abused Its Discretion In Its Analysis Of Limitation [1D]

Patent Owner argues the Board abused its discretion in its analysis of limitation [1D]. *See* Request, 5-8. Patent Owner's principal complaint is that "Limitation [1D] does not simply claim a cutting depth, but rather *specifically requires* that the recited cutting depth that results is produced *by a particular dresser*

satisfying the structural characteristics recited in [1B] and [1C].” Request, 4.

According to the Patent Owner, “Sung ’026 disclosed *nothing* about the structure producing the cutting depth it disclosed,” (*Id.*, 7) and the Board allegedly “abused its discretion” because the Board spent only “seven lines summarizing the Petition’s assertions that Sung ’026 allegedly disclosed limitation [1D]” to “conclude[] that Sung ’026 discloses [1D].” *Id.*, 5.

But Patent Owner is putting form over substance in making such an argument. As Patent Owner correctly notes, limitations [1B] and [1C] claim certain structural characteristics of the CMP pad dresser:

[1B] the dresser including a monolayer of a plurality of superabrasive particles protruding from a matrix layer,

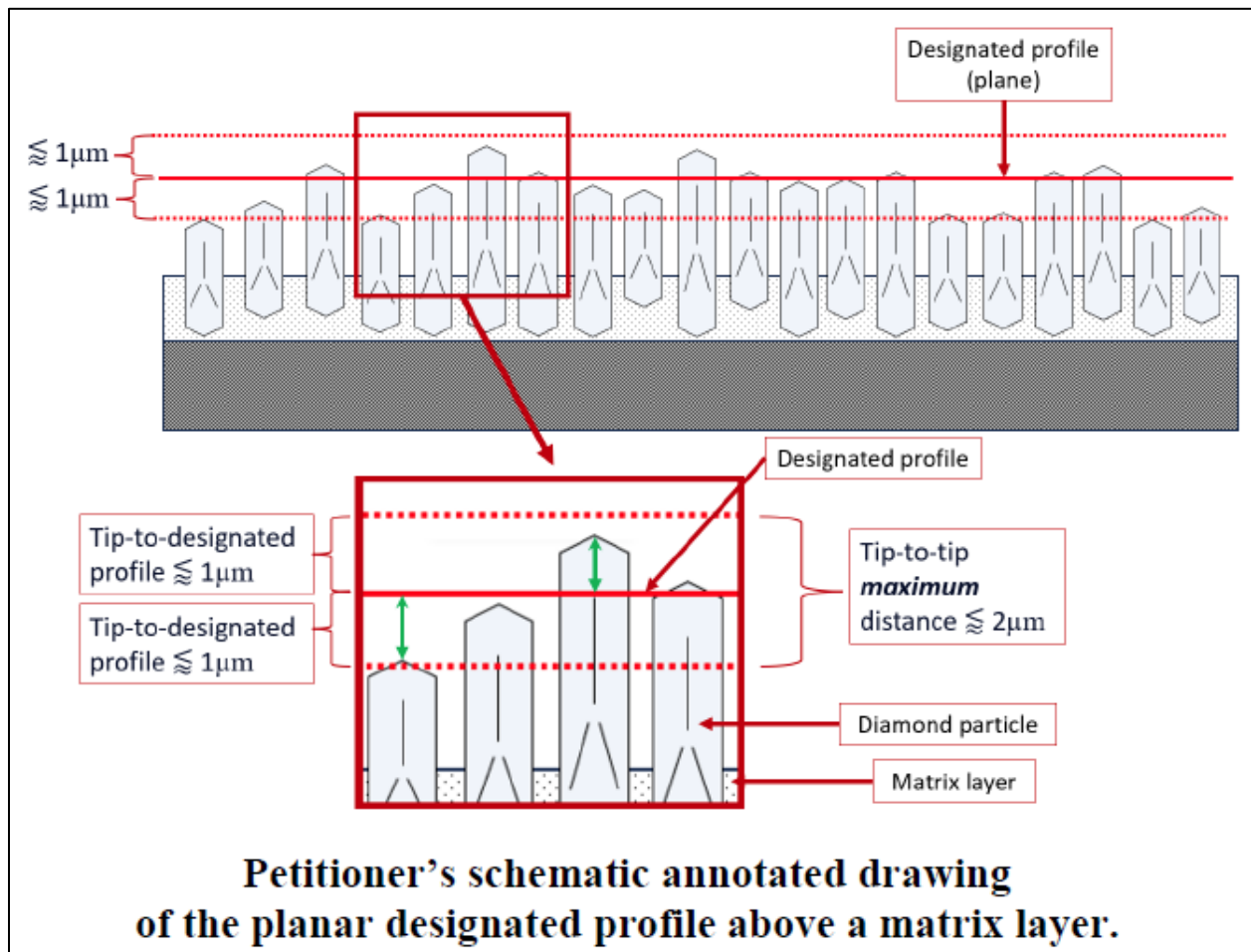
[1C] wherein the difference in protrusion distance between the highest protruding tip and the second highest protruding tip of the monolayer of superabrasive particles is less than or equal to about 10 microns and the difference in protrusion distance between the highest 10 protruding tips of the monolayer of superabrasive particles are within about 20 microns or less; and

Limitation [1D] additionally requires:

[1D] rotating the dresser against the CMP pad such that asperities are cut into the CMP pad having a maximum cutting depth of about 60 microns.

As Patent Owner concedes, “PO does not dispute that Sung’026 discloses Limitation [1B].” Request, fn. 2.

As for limitation [1C], the Board closely evaluated the evidence from both parties and determined that not only the structural characteristics taught in limitation [1C] were taught, but certain aspects of limitation [1D] were taught as well. For example, the Board went through a lengthy discussion of what Sung'026 discloses based on the schematics (reproduced below) that Dr. Shanfield generated to further elucidate the teachings of Sung'026:



FWD, 45. The Board then considered and rejected Patent Owner's argument that "because Sung'026 fails to disclose these various aspects in a single embodiment as

Claim Limitation [1C] recites, Sung’026 cannot anticipate claim 1.” FWD, 48. In other words, the Board “credit[ed] Dr. Shanfield’s testimony (as summarized above [in the FWD]) over Dr. Tsai’s declaration testimony, because Dr. Tsai’s deposition testimony essentially agreed with Dr. Shanfield that Sung’026 discloses all the aspects recited in claim 1 together in a single embodiment.” *Id.*

Of particular importance relevant to limitation [1D] was Patent Owner’s own expert’s admission that Sung’026 intended to combine different embodiments—***one of which was to control the cutting depth***: “first one is that you need to have the same orientation, same shape so you can have the consistency; and No. 2, you would like to have the same height; and No. 3, ***you would like to control the penetration depths***.” FWD, 48-49 (quoting EX1049, 51:2–6); *see also* FWD, 49 (quoting EX1049, 51:9-13) (“Q: So Sung’026 is trying to combine all three of those together, correct? A: That’s correct, because if you can have a very good control of those, then—and that time period back then, then you can make a very perfect diamond disk.”). The Board further noted that Dr. Tsai admitted in his deposition that Sung’026 “intends to make a diamond disk that has all the protrusion[s] with identical heights and with the same orientation,” (FWD, 48 (citing EX1049, 50:2-4)) and that Sung’026 “***also intends to control the depth of penetrating into the pad***.” *Id.* (citing EX1049, 50:10-13). And “[b]ased on the evidence as discussed

above [in the FWD], we determine that Sung’026 discloses the elements and limitations in clause 1[C].” FWD, 49.

Patent Owner’s argument that “Sung’026 disclosed *nothing* about the structure producing the cutting depth it disclosed,” (Request, 7), is incorrect because as Dr. Tsai admitted, Sung’026 teaches “if I want to penetrate 10 micron into the pad, then the protrusion height should be at least 10 micron.” FWD, 48 (citing EX1049, 50:10-13).

Hence, the only remaining issue for limitation [1D] to be resolved by the Board was whether Sung’026 discloses the added requirement “that asperities are cut into the CMP pad having a *maximum cutting depth of about 60 microns*.” And for that added requirement, the Board correctly noted that “Patent Owner[] does not oppose the[] contention[]” (FWD, 51) that Sung’026 teaches cutting depth of about 10-20 microns (*i.e.*, meeting the required “having a maximum cutting depth of about 60 microns”).

The Director should not overturn the Board’s findings simply because the Board decided not to repeat the same analysis it explained with respect to limitation [1C] in its limitation [1D] section. That is not an abuse of discretion.

B. The Board Correctly Found That Sung’026 Anticipates Limitation 1[A]–“Pressing A CMP Pad Dresser Against A CMP Pad”

Patent Owner contends that Board “abused its discretion by supplementing the disclosure of Sung’026 in order to find anticipation.” Request, 8. According to the Patent Owner, the Board “supplemented” Sung’026 and improperly relied on probabilities (or inherency) because Sung’026 does not expressly state “pressing the dresser against the pad.” Request, 8-10. That is incorrect.

As the Board noted, Sung’026 describes operation at the dresser–pad interface in terms of uniform frictional/mechanical forces that has a “*downward force*.” This explicit teaching in Sung’026 was credited by the Board to disclose “*pressing* a CMP pad dresser against a CMP pad.” FWD, 42.

Indeed, Patent Owner’s own expert, Dr. Tsai, confirmed that Sung’026 discloses such “*pressing*.” When asked by Patent Owner’s own counsel Mr. Chan during his redirect examination, Dr. Tsai testified that:

The first way is that if you add a load or a weight *and press it down*, and to allow these two objects to rotate to each other, then it will also reach the outcome of dressing. And second way is to use its own weight, and that takes a holder to hold it. There’s another force to *push this holder* so that it can do the dressing.

FWD, 42 (citing EX1049, 70:8–14).

These findings by the Board are more than sufficient to find anticipation. For anticipation, “the dispositive question is whether a skilled artisan would ‘reasonably understand or infer’ from a prior art reference that every claim limitation is disclosed in that single reference.” *Acoustic Tech., Inc. v. Itron Networked Sols., Inc.*, 949 F.3d 1366, 1373 (Fed. Cir. 2020). And that is exactly the standard the Board followed: it read Sung’026 the way a POSITA would have, further buttressed by expert testimony, to properly conclude that Sung’026 discloses “pressing a CMP pad dresser against a CMP pad.” FWD, 42. As such, Patent Owner’s argument that Board abused its discretion is meritless.

C. Board Correctly Relied On Sung’026’s Explicit Teaching, Corroborated By Both Sides’ Experts, That Different Embodiments Would Have Been Readily Combined To Find Anticipation For Limitation [1C]

Patent Owner asserts that “the Board abused its discretion by combining separate embodiments of Sung’026 in order to find anticipation.” Request, 10. Specifically, Patent Owner contends the Board’s reliance on a “counterfactual diagram created by Dr. Shanfield” and “Dr. Tsai’s testimony” “is not sufficient for anticipation.”² Request, 10. But Patent Owner’s arguments lack merit.

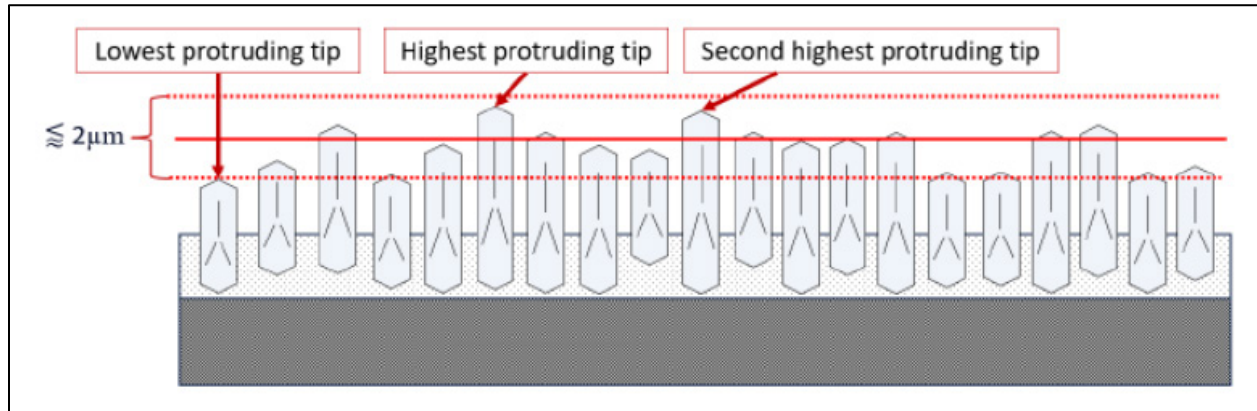
² Patent Owner never challenged the Board’s finding “that a preponderance of the evidence supports Petitioner’s *alternative ground 1B* that claim 1 would have been

The Board properly weighed the disclosure of Sung'026 and the testimonies of both parties' experts to arrive at the conclusion that Sung'026 does anticipate limitation [1C], which requires that the protrusion distance between the highest protruding tip and the second highest protruding tip is $\leq 10 \mu\text{m}$, and the difference in protrusion distance between the highest 10 protruding tips is $\leq 20 \mu\text{m}$.

The Board relied on Sung'026's disclosure that the particles protrude to predetermined heights along a designated profile, and that the designated profile may be a plane. FWD, 44 (citing Sung'026, claims 36 and 37, and ¶ [0053]). The Board further relied on Sung'026's disclosure that the particles' tips vary from that designated profile by less than about $1 \mu\text{m}$. FWD, 45-46 (citing Sung'026, ¶¶ [0056], [0073]). The Board appropriately credited Dr. Shanfield's explanation regarding these explicit disclosures from Sung'026 that were illustrated using certain schematic diagrams reproduced below. These diagrams generated by Dr. Shanfield merely illustrate pictorially what Sung'026 explicitly teaches in its text: (i) designated profile is plane, (ii) the deviation from that plane is $< 1 \mu\text{m}$; and (iii) the

obvious based on Sung'026." FWD, 50. Patent Owner's only complaint regarding limitation [1C] is based on the Board's anticipation directed to ground 1A. As such, the Board's ultimate conclusion based on obviousness theory under ground 1B remains unperturbed.

arithmetic consequence that the tip-to-tip difference is $< 2\ \mu\text{m}$, which necessarily satisfies [1C]. There is nothing new in these schematics over what Sung'026 already teaches.



FWD, 46 (citing Dr. Shanfield's Declaration, ¶104).

Patent Owner's argument regarding the Board's allegedly improper reliance on "Dr. Tsai's testimony directed to what Sung'026 'intends' or 'is trying,'" also lacks merit. The Board merely credited Patent Owner's own expert, Dr. Tsai, who admitted in his deposition that a POSITA would have understood Sung'026 to teach the desirability of combining the different embodiments of Sung'026 into a single diamond disk. *See* FWD, 49 (quoting EX1049, 51:9-13) ("Q: So Sung'026 is trying to combine all three of those together, correct? A: That's correct, because if you can have a very good control of those, then—and that time period back then, then you can make a very perfect diamond disk."); *see also id.*, 48-49 (quoting Ex. 1049, 51:2-6) ("[F]irst one is that you need to have the same orientation, same shape so you can

have the consistency; and No. 2, you would like to have the same height; and No. 3, you would like to control the penetration depths.”). Dr. Tsai’s admissions merely corroborate what Sung’026 already teaches. *See* Section II.A *supra*.

The Board also considered and rejected Patent Owner’s reliance on *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359 (Fed. Cir. 2008). *See* FWD, 48. Similarly, the Board considered and agreed with Petitioner’s arguments that the situation here “overcome the circumstances discussed in *Net MoneyIN*,” (*id.*), because *Net MoneyIN* merely bars anticipation by cherry-picking ***unrelated*** snippets without evidence a POSITA would tie them together—a situation not found here. Here, Patent Owner’s expert admitted that a POSITA would have understood Sung’026 to teach combining the different aspects together. *See* FWD, 48-49 (“So contrary to Dr. Tsai’s *Declaration* testimony in Ex. 2011 ¶ 69, Dr. Tsai clarifies in his *deposition* testimony that Sung’026 intends to combine three distinct aspects or embodiments.”). Indeed, it is well-settled law that a reference anticipates even if it doesn’t “expressly spell out” every limitation arranged as in the claim, so long as a POSITA reading the reference would at once envisage the claimed arrangement. *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015).

In sum, the Board did not abuse its discretion because the Board’s anticipation finding with respect to limitation [1C] rests on the explicit teachings of Sung’026, as further corroborated by both parties’ expert testimony and admissions.

D. The Board Did Not Supplement [1A] or [1D]; The Board’s §103 Analysis Was Proper

Patent Owner argues that “the Board abused its discretion by applying obviousness to claim limitations where the Petition only argued anticipation.” Request, 12. Specifically, Patent Owner argues that the “Petition failed to raise any obviousness argument for Claim Limitations [1A] and [1D].” Request, 12.³ But Patent Owner never articulates what aspects of the Board’s findings for limitations [1A] and [1D] rely on an obviousness analysis. Rather, Patent Owner merely relies on *Net MoneyIN* to argue that “because ‘all of the limitations’ in claim 1 of the ’862 patent are **not** disclosed ‘within the four corners’ of Sung’026 ‘arranged or combined in the same way as recited’” (Request, 13), the Board somehow committed an abuse of discretion. Not so.

As already discussed above in Sections II.A and II.B, in the FWD, the Board found limitations [1D] and [1A], respectively, were **anticipated** by Sung’026 by relying on the explicit teachings of Sung’026, corroborated by the testimony

³ “PO does not dispute that Sung’026 discloses Limitation [1B],” (Request, fn. 2) and concedes that the Petition did include an obviousness argument for limitation [1C]. *See* Request, 12 (“[T]he obviousness argument only addressed Claim Limitation [1C]...”).

proffered by both sides' experts. The Board never made an obviousness finding regarding limitations [1A] and [1D] in the FWD. FWD, 40-43 and 50-51. Patent Owner cannot complain that the Board abused its discretion by carrying out an obviousness analysis when it never did.

To the extent Patent Owner is arguing that the Board conducted an obviousness analysis in the guise of an anticipation analysis, that is also untrue. Board's analysis is a straightforward determination of what Sung'026 teaches, aided by the testimony proffered by both sides' experts. Nothing about the Board's analysis "fills [any] gaps" in the disclosures of Sung'026. Indeed, Patent Owner could not and did not identify any single factual gap—other than the ultimate conclusion drawn by the Board—for either limitations [1A] and [1D] in its Request. *See* Request, 12-13.

Finally, to the extent Patent Owner is arguing that the Board should never have found obviousness for Ground IB because the Petition presented only Ground I (not two separate Grounds IA and IB), that argument also lacks merit. The Board's Institution Decision clarified that because the Petition's Ground I was drafted as an anticipation or, in the alternative, an obviousness challenge, the Board split up Ground I into two separate Grounds IA and IB. DI (Paper 14), 33. And Patent Owner adopted that framing in its Patent Owner's Response as well. *See* POR, 15-38 (directed to Ground IA) and 39-46 (directed to Ground IB). Patent Owner cannot

belatedly argue such splitting of Ground I to Grounds IA and IB was an abuse of discretion when Patent Owner itself adopted that framing by the Board. And under Ground IB, the Board properly “determine[d] that a preponderance of the evidence supports Petitioner’s alternative ground 1B that claim 1 would have been obvious based on Sung’026.” FWD, 50. Accordingly, Patent Owner’s assertions that the Board abused its discretion lacks merit.

III. CONCLUSION

For at least the reasons provided above, Petitioner respectfully requests that the Director denies Patent Owner’s request for Director Review.

Dated: October 27, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on October 27, 2025, a complete copy of the foregoing was served on counsel of record for the Patent Owner by filing the documents through P-TACTS and by sending via electronic mail to the following addresses:

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