

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ASCEND ELEMENTS, INC.,
Petitioner,

v.

DUESENFELD GMBH,
Patent Owner.

PGR2025-00037
Patent 12,119,053

PETITIONER'S RESPONSE TO PATENT OWNER'S
DISCRETIONARY DENIAL BRIEF

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1003	Declaration of Marc Juzkow
1004	Japanese Patent App. Pub. JPH10255861 ("Tomioka")
1005	Translation of Tomioka
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1007	Japanese Patent App. Pub. JP2016080284A ("Yosuke")
1008	Translation of Yosuke
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1010	U.S. Patent No. 9,843,077 ("Hayashi")
1011	Kwade et al., <i>LithoRec: Recycling lithium-ion batteries</i> , published in 2012 by Cuvillier Verlag Göttingen ("LithoRec")
1012	Translation of LithoRec
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1014	U.S. Patent Appl. Pub. No. US 2008/0050295 A1 ("Uchida")
1015	Perry et al., <i>Perry's Chemical Engineers' Handbook</i> (7 th Ed.) published in 1997 by McGraw-Hill ("Perry")
1016	U.S. Patent No. 11,050,097 ("097 Patent")
1017	RESERVED
1018	<i>Ascend Elements Inc. v. Duesenfeld GmbH</i> , IPR2024-00948, Paper 10 (Decision Granting Institution of <i>Inter Partes</i> Review for U.S. 11,050,097) ("097 Institution Decision")
1019	<i>Ascend Elements Inc. v. Duesenfeld GmbH</i> , IPR2024-00948, Paper 19 (Patent Owner Response [REDACTED]) ("097 POR")
1020	Declaration of Sylvia Hall-Ellis, Ph.D.

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1023	Han <i>et al.</i> , <i>Lithium-ion hopping weakens thermal stability of LiPF₆ carbonate electrolytes</i> , Cell Reports Physical Science 5, 101768 (Jan. 17, 2024).
1024	Nitta <i>et al.</i> , <i>Li-ion battery materials: present and future</i> , 18 Materials Today 252 (June 2015)
1025	Solef® PVDF Typical Properties, Solvay Brochure
1026	Lu <i>et al.</i> , <i>Thermal behavior and decomposition kinetics of six electrolyte salts by thermal analysis</i> , 156 J. Power Sources 555 (2006)
1027	Yang <i>et al.</i> , <i>Thermal stability of LiPF₆ salt and Li-ion battery electrolytes containing LiPF₆</i> , 161 J. Power Sources 573 (2006)
1028	U.S. Patent No. 5,691,077
1029	<i>URT Umwelt und Recyclingtechnik GmbH v. Duesenfeld GmbH</i> , IPR2024-00887, Paper 18 (Patent Owner Response [REDACTED])

I. INTRODUCTION

Patent Owner Duesenfeld GmbH's ("Duesenfeld" or "PO") Request for Discretionary Denial (Paper 6, "PO Brief") should be denied, and the petition for post-grant review by Ascend Elements, Inc. ("Ascend" or "Petitioner") (the "Petition") should proceed to a merits decision on institution as to all challenged claims in U.S. Patent 12,119,463 ("463 Patent").

No factors warrant denying institution of PGR here. Petitioner has mounted strong challenges against the '463 Patent in its Petition, explaining that the challenged claims merely recite previously known methods of recycling used batteries, such as shredding them and drying out the shredded material under low temperatures and reduced air pressure to remove electrolyte. Petitioner backs these arguments with factually supported expert opinion. While the PO devotes a substantial portion of its Brief to addressing the merits of Petitioner's challenges, PO fails to address the majority of the grounds raised in the Petition and fails to demonstrate that any of its merits-based challenges warrant discretionary denial. Instead, PO focuses almost exclusively on whether one reference discloses a single part of one limitation (which is clearly disclosed in that reference).

Moreover, the Patent Office is already conducting two IPR proceedings for a patent to which the '463 Patent is terminally disclaimed, U.S. Pat. No. 11,050,097 ("097 Patent"), including IPR2024-00948 (the "097 Patent IPR"), and the only co-

pending district court litigation involving these patents has been stayed. As such, the Patent Office is the best and most economical forum for evaluating the patentability challenges against the '463 Patent.

Further, the first set of grounds raised in the Petition rely on prior art and associated arguments that have not been previously presented to the Office. PO does not dispute this for at least Grounds 1-5 (of the 10 grounds raised in the Petition), which cover *all* challenged claims. For this reason alone, there is no basis under Section 325(d) to deny institution based on previously raised art or arguments. To the extent other grounds in the Petition rely on art presented to the Office during prosecution, they rely on disclosures in that art that the Examiner failed to address during prosecution, thereby committing material error, as discussed below. And to the extent other grounds in the Petition are currently before the PTAB in related IPR proceedings, the Board has yet to issue a final determination as to any of those grounds warranting discretionary denial here.

While PO argues that certain disputed expert opinions raised by the Petition would be better decided by the district court, PO entirely ignores *Fintiv* and other factors that overwhelmingly weigh in favor of institution notwithstanding the district court case. Not only is the district court case stayed (which PO never mentions), but moreover, no trial is currently scheduled and the parties have only invested limited resources in the parallel proceeding (particularly as to the '463 Patent).

Other discretionary factors similarly favor institution of the Petition. For instance, not only did Petitioner seek PGR only five months after the patent issued, but PO also asserted the '463 Patent against Petitioner only a few months after it issued, which PO would have reasonably expected to lead to challenges to patentability.

Given the strength of Petitioner's arguments presented to the Office for the first time in the Petition, the stay of the district court case, and other reasons detailed herein, Petitioner respectfully requests that the Director advance the Petition to a merits panel for consideration.¹

¹ Petitioner applies herein the March 26, 2025 Interim Processes for PTAB Workload Management ("Director Memorandum"), which states that it "will be implemented in...PGR proceedings where the deadline for the patent owner to file a preliminary response has not yet passed." However, to the extent PO argues that Petitioner failed to provide explanations in its Petition that are now required by the Director Memorandum, such retroactive application of this intervening law to the PGR petition filed weeks earlier (on March 7, 2025) would be counter to notice-and-comment rulemaking requirements set forth in the Administrative Procedures Act. *See Apple Inc. v. Vidal*, 2024 WL 1382465, at *10 (N.D. Cal. Mar. 31, 2024) ("For an agency action to be a general statement of policy, one requirement is that the action must operate 'only prospectively.'") (quoting *Mada-Luna v. Fitzpatrick*, 813 F.2d 1006, 1014 (9th Cir. 1987)). For example, it would be unfairly prejudicial to Petitioner to impose a retroactive requirement to provide a detailed explanation of Examiner error that, under practice norms at the time of filing, could have been satisfied by reliance on the grounds in the Petition to imply error.

II. INSTITUTION IS WARRANTED UNDER SECTION 325(d)

None of the prior disclosures of prior art or arguments to the Office during prosecution of the '463 Patent or related IPR proceedings warrant discretionary denial under Section 325(d).

Specifically, during prosecution of the '463 Patent, the Examiner did *not* consider the grounds at issue here. Not only did the Examiner not have the benefit of Tomioka or the affidavit of Mr. Juzkow (EX1003), but the Examiner was never presented with the combination of Hanisch and Hayashi as relied on here. Indeed, the petition in the '097 IPR presents a detailed combination including Hanisch and Hayashi that is relevant to the '463 patent, but PO never disclosed that petition to the Examiner during prosecution of the '463 Patent. In fact, PO submitted a Request for Continued Examination (RCE) months *after* the '097 Patent IPR petition was filed, yet failed to notify the Examiner of the '097 IPR. EX1002 (August 2, 2024 IDS submitted concurrently with RCE, omitting mention of the '097 Patent IPR) at 121-25; *see also id.* (May 31, 2024 IDS, also omitting mention of petition) at 146-47.

Nor does the Board's preliminary findings in its decision to institute the '097 Patent IPR counsel for discretionary denial. The Board's findings in that institution decision are *preliminary* and expressly anticipate that the parties will develop a more fulsome record for consideration. That is now happening in the co-pending proceeding, where the Board also *preliminarily* rejected PO's proposed claim

amendments. To suggest now that the Board here should rely on a non-final determination in another matter as a basis for denial would be counter to the purpose of Section 325(d).

In addition, the merits of the challenge presented here are strong. This is particularly notable where the PTAB has already instituted IPR of claims in the '097 Patent (against which the '463 Patent is terminally disclaimed), where the subject matter of the claims in the '097 Patent is substantially similar to that claimed in the '463 Patent, and the arguments the PTAB has found persuasive as to the '097 Patent are also largely applicable here. *See Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00222, Paper 9 at 2 (PTAB June 13, 2025) (denying request for discretionary denial where, among other things, Petitioner showed that the "Board previously determined there was a reasonable likelihood that similar claims of an ancestor patent were unpatentable").

PO's conclusory assertions about the merits of the patentability challenge focus almost exclusively on PO's misleading characterizations of Tomioka's disclosures of "comminuting." PO Brief, 39-58. As explained below, Tomioka discloses "comminuting," and PO's criticisms can be rejected. And PO's silence as to the overwhelming majority of Petitioner's theories of unpatentability is telling. For these reasons, as explained further below, Section 325(d) does not counsel against institution here.

A. Grounds 1-5 Cover All Challenged Claims and Rely on Art and Arguments Not Previously Presented to the Office

None of Grounds 1-5, which cover all challenged claims, raise any prior art or arguments previously presented to the Patent Office. Each of these grounds relies in part on Tomioka, which was not cited during prosecution of the '463 Patent or in the '097 Patent IPR, and none of the arguments in the Petition involving Tomioka have been presented to the Office before. PO does not deny that Tomioka and associated arguments have not been before the Office before. Rather, PO mischaracterizes Tomioka's disclosures and the arguments raised in the Petition to argue at the discretionary denial stage that the Board should not even consider the merits of Grounds 1-5. As explained below, PO's arguments fail.

Similarly, Yosuke, which Grounds 2 and 7 rely on, was not cited during prosecution. Also, contrary to PO's arguments, Yosuke is not cumulative to art considered during prosecution. For these reasons, as explained further below, the PTAB should have the opportunity to consider the substance of these grounds.

1. PO Relies on Selective Citations to Specific, Non-Limiting Embodiments, Mischaracterizing the Scope of Tomioka's Disclosure of "Comminuting"

Tomioka was not before the Examiner during prosecution. That alone counsels against discretionary denial here as Grounds 1-5 do not "present[] to the Office the same or substantially the same art previously presented to the Office." *Advanced Bionics*, Paper 6 at 6. PO acknowledges as much (PO Brief, 5-39

(omitting Tomioka from arguments regarding previously presented art and arguments) and makes arguments that are better handled at the merits stage, not the instant stage focused on discretionary factors. This is contrary to the goals of the Director Memorandum, which looks to bifurcate the process into first addressing discretionary denial factors *before* proceeding to a merits determination on institution. See Director Memorandum at 1.

Indeed, PO's own briefing on discretionary denial confirms that its challenge to Grounds 1-5 is rooted in a claim construction dispute—on the meaning of "comminuted"—that has not yet been developed by PO, and disputes as to whether Tomioka's dismantling and cutting of battery pieces constitutes comminution under the claims. This is not a question of discretion; this is a question of the merits.

More importantly, PO's arguments with respect to Tomioka and the '463 patent are wrong. PO spends over a dozen pages attempting a brute force distinction between "comminuting" and "dismantling" but fails to address the full meaning of either. See PO Brief, 42-58. As the '463 patent teaches, comminution may include "cutting, cropping, impact, cutting and/or crushing." EX1001, 3:35-36; *see also id.*, 4-6 (describing a "cutting mill"). And PO acknowledges but does not otherwise address the fact that Tomioka's "dismantling" is expressly defined to include cutting: "Furthermore, '*dismantling*' means cutting the outer casing of the individual battery or the battery pack *to extract the electrode element components such as the positive*

electrode, negative electrode, and separator, and if necessary, cutting them into strip-like pieces."). Thus, by at least disclosing extracting electrode components and "cutting them," Tomioka falls squarely within the claims of the '463 Patent and PO's arguments as to the strength of the Tomioka grounds should be rejected.

**2. Neither Yosuke Nor Petitioner's Associated Arguments
Were Presented to the Office Previously**

PO concedes that Yosuke was not previously presented to the Office. PO Brief, 24. But PO contends that Yosuke is nonetheless equivalent to, and used the same way as, two other references, Kaplan and Muska, that the Examiner considered as independent grounds for 102 and 103 rejections during prosecution. PO Brief, 24-26. PO also implies that Petitioner has treated Yosuke as interchangeable with Hayashi. PO is wrong on both arguments.

First, PO's attempts to argue that Yosuke is substantively the same as Kaplan and Muska are deficient and wrong. Surprisingly, PO does not even present the corresponding disclosures in Kaplan and Muska or otherwise explain how Yosuke is cumulative of those references and arguments. PO Brief, 25-26. Rather, PO's entire argument boils down to the notion that, because the Examiner considered and rejected *some* combination of prior art references for this limitation, *any* different prior art offered as disclosing that limitation is necessarily cumulative of the art overcome during prosecution. There is no basis in law for this argument.

Second, Yosuke is not, in fact, cumulative of either Kaplan or Muska. With respect to Kaplan, the '463 prosecution history confirms that Kaplan is directed to different subject matter than Yosuke. As the Examiner recognized, Kaplan is directed to industrial processing "of materials that do not have a problem of explosion." EX1002 at 293. Indeed, Applicant distinguished Kaplan as using a cryogenic freezing method to handle lithium-ion batteries, and "not heat[ing them] to a temperature which would allow vaporization of the electrolyte as required by the present invention." EX1002 at 254. In contrast, Yosuke is specifically directed to a method "to accurately determine the completion of vacuum drying," particularly "when drying electrodes for secondary batteries such as lithium-ion batteries." EX1008, [0004].

Further, PO ignores the fact that claim 4 was amended to recite "vaporized electrolyte" (EX1002 at 250) following the rejection over Kaplan, which the Examiner had said dealt with processing "of materials that do not have a problem of explosion." EX1002 at 293. But because Yosuke is directed to vacuum drying of lithium-ion batteries, Yosuke remains relevant to the claims *as* issued. *See* EX1008, [0004]. Further, PO also fails to mention that during prosecution, Kaplan was used as a single reference to make a §102(a)(2) rejection of the independent claim and several dependent claims then-pending; here, in contrast, Yosuke is used only as a combination reference as to the disclosure of monitoring drying progress and in

determining when to stop, as recited in claim 4 of the '463 Patent. PO is therefore incorrect that Petitioner is using Yosuke in the same manner as Kaplan was considered during prosecution.

As to Muska, PO argues that Muska was cited during prosecution as disclosing a control system for a continuous monitoring step as recited in claim 4. PO Brief, 25-26. But Muska, like Kaplan and as recognized by the Examiner, deals with processing materials that "do not have a problem of explosion." EX1002 at 294-95. Applicant distinguished Muska as teaching away from shredding lithium-ion batteries, and that Muska was "completely silent regarding vaporization of any kind." EX1002 at 255. In contrast, Yosuke expressly contends with the handling of electrodes of lithium-ion batteries and the organic solvents they contain, and doing so in a vacuum drying context. EX1008, [0004]. PO also fails to mention that during prosecution, Muska was used as a single reference to make a §103 rejection of the independent claim and several dependent claims then-pending. Here, Yosuke is used only as a combination reference as to the disclosure of monitoring drying progress and in determining when to stop, as recited in claim 4 of the '463 Patent. PO is therefore incorrect that Petitioner is using Yosuke in the same manner as Muska.

PO's second argument—that the use of "and/or" in the Petition somehow means Yosuke is interchangeable with Hayashi—is wrong. Petitioner's arguments involving Yosuke are directed to Yosuke's disclosures regarding performing the

drying within an interior of a drying device, monitoring a progress parameter such as gas pressure, and not terminating the drying process until the progress parameter reaches a pre-determined progress parameter threshold value. Petition at 46-47, 67. Petitioner does not rely on Hayashi for these features of claim 4 but instead relies on Hayashi as to the combination with Hanisch for claim 1, from which claim 4 depends. Petition, 56-63. Thus, because neither Yosuke nor Petitioner's associated arguments were previously presented to the Office, there is no basis to deny institution on this ground.

B. Grounds 6-10 Rely on Arguments Unresolved by the Office

Grounds 6-9 address the invalidity of the claims under §103 in view of Hanisch and Hayashi, among other references. Ground 10 addresses the indefiniteness of the claims based on PO's contradictory statements to the Office on the outer boundaries and meaning of the term "inactivating." Petition, 71-73. These issues are currently before the Board in the '097 Patent IPR. Contrary to PO's arguments, these positions have not been fully and finally adjudicated by the Board and remain unresolved.

Denying institution at this stage would be at odds with the purpose of discretionary denial. The underlying logic of denying institution if a petition relies on arguments that were previously presented to the Office assumes that the Office fully considered and rejected those arguments in a final adjudication, and thus there

is no reason to expect them to succeed if presented again.² *In re Vivint, Inc.*, 14 F.4th 1342, 1349 (Fed. Cir. 2021) (noting that discretion under Section 325(d) "would be meaningless" if challenge to patentability "was not new simply because it had been previously presented to the Patent Office," and finding that "the Patent Office must have considered and *decided that question on the merits.*") (emphasis added).

But *preliminary* findings are just that—nonfinal and subject to change. *See, e.g., ZTE (USA), Inc., et al. v. CyWee Group Ltd.*, IPR2019-00143, Paper 87 (FWD), at 105 (PTAB Feb. 17, 2021) ("We agree with LGE that our Preliminary Guidance did not reflect the resolution of any issues..."). Indeed, the Board's Institution Decision and Preliminary Guidance on PO's Motion to Amend both expressly contemplate that the parties will further develop the record and that these preliminary findings are subject to change. *See EX2020, Ascend Elements, Inc. v. Duesenfeld GmbH*, IPR2024-00948, Paper 10 at 37 (Nov. 22, 2024) (Institution Decision) ("Our factual findings...and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record developed thus far. *This is not a final decision as to the patentability of claims for which inter partes review is instituted.* Our final decision will be based on the record as fully developed during trial."); *Ascend*

² It is not sufficient to deny institution merely because the same arguments have been *presented* before. Otherwise, patents would be insulated from post-issuance reviews on grounds that were previously successful in rejecting substantially the same subject matter, which would be nonsensical. Rather, institution should not be denied unless those arguments have been rejected in a final determination.

Elements, Inc. v. Duesenfeld GmbH, IPR2024-00948, Paper 37 at, e.g., 6 (June 11, 2025) (Preliminary Guidance Patent Owner's Motion to Amend) ("[F]or purposes of this Preliminary Guidance, we apply the construction set forth in the Institution Decision. However, *the parties are still encouraged to further develop the issue.*"). It would be improper to discretionarily deny this Petition based on preliminary guidance that is subject to change, absent a Final Written Decision adjudicating those issues.

1. The PTAB Is Now Considering the Fully Developed Record Regarding the "Inactivating" Requirement of All Claims

Patent Owner contends that the PTAB, in its institution decision in the '097 Patent IPR, has already considered Petitioner's arguments regarding Hanisch's disclosure of "inactivation" using a low-temperature pre-dryer device that operates at or below 80° C. PO Brief, 5-11. While the issue has already been raised at the institution stage in that proceeding, there has been no binding determination yet, and PO's arguments to the contrary are misleading.

Hanisch unambiguously discloses a low-temperature drying process (below 80° C) that results in "dry cell fragments and drying vapours." EX1021, [0025]. In its POPR in the '097 Patent IPR, PO argued that the low temperature "pre-dryer" was concerned merely with recovery of electrolyte and speed, and therefore could not disclose inactivation. In its decision to institute, the Board did not reject the possibility that Hanisch's pre-drying process disclosed this limitation but merely

noted that the record at the time had not sufficiently clarified why a POSITA would have understood that the pre-dyer in Hanisch removed a sufficient quantity of electrolyte solvent to lead to inactivation. The Board explicitly invited the "parties to further develop the record on this question at trial." *Ascend Elements, Inc. v. Duesenfeld GmbH*, IPR2024-00948, Paper 10, at 12-13 (Nov. 22, 2024). The record has since been more fully developed—including record evidence of subsequent process steps in Hanisch that confirm the output of the pre-dryer as fully "dry" and therefore inactivated material—and the PTAB has yet to issue a determination on the merits of Petitioner's Grounds in view of this developed body of evidence.

2. Further Development of the Record in the '097 Patent IPR

In its post-institution Response in the '097 Patent IPR, PO conceded that Hanisch's low-temperature pre-dryer heats and evaporates, and thereby removes electrolyte solvent. IPR2024-00948, Paper 19 at 15 ("[t]he pre-dryer of Hanisch '419 is configured to remove some quantity of electrolyte solvent."). PO concedes the same here. PO Brief, 6 ("The comminuted battery material is then fed into a 'pre-dryer 28', which is set to a low temperature, preferably below 80° C. . . . This pre-dryer evaporates some electrolyte solvents from the battery material.").

Further, the PTAB had already recognized at institution that when no liquid electrolyte material remains, comminuted battery material is inactivated. *Id.*, Paper 10 at 15. While PO attempted to obfuscate the results of Hanisch's low-temperature

drying process, Petitioner further demonstrated in Reply that the Board had not appeared to consider, or misapprehended, the significance of Hanisch's disclosure "that cell fragments are dried at a drying temperature, so that dry cell fragments and drying vapours are formed." *Id.*, Paper 31 at 6-9 (citing Hanisch, 3:67-4:1; *see also id.*, 8:3-10). The Board has not yet weighed in on this argument—that Hanisch's disclosure of ***dry cell fragments*** is different than PO's suggestion that it discloses only partly dry fragments.

Moreover, Petitioner explained that, contrary to PO's argument that "Hanisch is not concerned with inactivation at the pre-dryer," Hanisch's disclosure of various separators and classifiers to process the "dry cell fragments" from the pre-dryer would have been clear signals to a POSITA that to form "dry cell fragments" (in contrast to partly dry fragments), the pre-dryer must have removed all the liquid electrolyte, and thus the material would be inactivated by the pre-dryer even under the Board's interpretation at institution. *Id.*, Paper 31 at 7-9. The Board has not yet weighed or considered this evidence and argument.

In addition, PO argued there that Hanisch was limited to a continuous process, not a batch process.³ IPR2024-00948, Paper 19 at 13, 15-16. PO also argued that

³ Patent Owner's Brief repeats the claim that "Hanisch is directed to a multi-step *continuous* process," (PO Brief, 6 (emphasis added), despite acknowledging that the PTAB rejected the position that Hanisch is limited to a continuous process in its preliminary guidance on PO's motion to amend. PO Brief, 11 n.2.

Hanisch did not explain "duration of the pre-dry process, the pressures to use in the pre-dryer, how to determine whether the material is sufficiently dry, the different electrolyte solvents to be evaporated, or the drying conditions needed to fully evaporate those different solvents." *Id.* at 16. PO's argument was, essentially, that Hanisch disclosed only a continuous process, and that the material would be moving through the pre-dryer continuously and for some indeterminate amount of time, and under conditions that were not clearly sufficient to allow for enough evaporation to inactivate the material.

Petitioner responded by pointing out that Hanisch's continuous process embodiment is merely a preferred embodiment, but not the sole disclosed embodiment, and that Hanisch expressly acknowledges that a batch process could be used. IPR2024-00948, Paper 31 at 10. The PTAB agreed in its preliminary guidance on PO's motion to amend that Hanisch is not limited to a batch process. *Id.*, Paper 37 at 8 (noting that Hanisch discloses batch drying operations).⁴ Accordingly, PO's arguments relying on the distinction between batch and

⁴ Despite this being a preliminary decision, the issue of whether a non-preferred embodiment is within the scope of a reference's disclosure is clearly a legal question, and the PTAB's preliminary conclusion is correct. *See Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (Fed. Cir. 2021) ("It's not necessary to show that a combination is 'the best option, only that it be a suitable option.'") (quoting *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014)).

continuous processes also should fail in that proceeding and, accordingly, do not form the basis for discretionary denial here.

The PTAB is now considering this fully developed record and has not yet issued a written decision on the merits of Petitioner's grounds. PO is therefore incorrect to imply that Petitioner's theories have been previously presented to, and rejected by, the Office or that the Board's preliminary findings are a justification for denying institution under Section 325(d).

C. Grounds 6-9 Demonstrate Specific Office Errors Material to Patentability of the Challenged Claims

PO contends that the prior art relied on for Grounds 6-9 was already presented to the Office. Specifically, PO argues that Hanisch, Hayashi, LithoRec, and Perry were all cited during prosecution. PO Brief, 11-23. But as indicated in the Petition (*see, e.g., id.* at 80-82) and here, the Examiner committed material error in overlooking specific disclosures and teachings in each of these references. The Board should be permitted to consider these theories on their merits. This is especially true here, where PO already had the '097 Patent IPR Petition in hand during prosecution of the '463 patent and failed to inform the patent office of the grounds raised therein.

1. The Examiner's Failure to Consider Hanisch Was Material Error

As an initial matter, PO claims that Petitioner "barely made an attempt" to explain why the Examiner committed material error in not relying on or discussing Hanisch in any anticipation or obviousness rejections. PO Brief, 4. This argument is misleading.

At the time the Petition was filed (March 7, 2025), the PTAB had not established a precedential resolution of whether, in dealing with an IDS cited reference, a petitioner must separately "explain how the Examiner erred [for purposes of Section 325(d)] or whether a petitioner can simply rely on its unpatentability contentions to imply that an error occurred." *See Ecto World, LLC v. Rai Strategic Holdings, Inc.*, IPR2024-01280, Paper 13 at 5 (May 19, 2025). The recent decision in *Ecto World* established a precedential requirement that a "petitioner must provide an analysis even when the asserted prior art is on an IDS, but the Examiner did not apply the reference." *Id.* This requirement was not in effect at the time the Petition was filed, and it is thus misleading to suggest, as PO does, that the Petition should have anticipated such a decision. PO Brief, 13-14.

The Director's withdrawal of the previous *Fintiv* guidance coupled with the PTAB's precedential decision in *Ecto World* constitute a significant change in the law arising after this Petition was filed. Indeed, Petitioner should be permitted to provide additional explanations of the material error given this intervening guidance.

See id., Paper 13 at 6 (remanding for further consideration, rather than denying institution, "[b]ecause this decision clarifies how to apply *Advanced Bionics* and *Becton Dickinson*, the appropriate course of action is to remand the proceeding to the Board.").

But even under *Ecto World*, Petitioner has provided the sort of explanation of error as to Hanisch that *Ecto World* itself posits as a proper example. In providing examples of how a Petitioner could properly explain why an Examiner erred, *Ecto World* offered that a "petitioner also may point to the fact that even though the asserted prior art is listed on an IDS, the Examiner did not issue any prior art rejections during examination, so the Examiner materially erred by overlooking certain teachings in the prior art on the IDS." *Id.* at 5-6. Petitioner's statement mirrors this example: "although a version of Hanisch was before the patent office during prosecution of the application that issued as the '463 Patent, the Examiner did not rely on or discuss Hanisch in any 102/103 rejections."

To the extent Petitioner needed to expressly address that "the Examiner materially erred by overlooking certain teachings in the prior art on the IDS," Petitioner submits that good cause exists to present that here, given the lack of precedential clarity in effect at the time of filing, and where PO's Brief opens the door by asserting that "nor could Petitioner supply the needed analysis to

demonstrate that Hanisch" and inserting substantive arguments about specific limitations that PO contends are missing in Hanisch. *See* PO Brief, 14.

a) The Examiner Materially Erred by Overlooking Hanisch's Disclosures as to Each Element of Claim 1

An exhaustive recitation of every disclosure the Examiner overlooked in Hanisch would likely mean exceeding permissible word limits for this submission, and thus, a representative set of examples is summarized here.⁵

Comminuting unit. The '463 patent itself admits that Hanisch "discloses a *method for recovering active material* from a galvanic cell, in which the galvanic cells are initially *mechanically comminuted*, then pre-dried and subsequently sifted." EX1001, 1:35-39. Thus, Hanisch discloses comminuting batteries.

Drying to inactivate. And as explained in the Petition as to Ground 6, this "pre-dryer" in Hanisch dries the comminuted material and results in inactivation. And PO is wrong when claiming that the PTAB has considered and rejected the argument that the "pre-dryer" in Hanisch operates to inactivate comminuted material. PO Brief, 5-11. PO cites the PTAB's decision to institute IPR, in which

⁵ The Petition sets forth the complete set of disclosures in Hanisch on which Petitioner relies, and Petitioner submits that the failure to address any of these during prosecution was material error, which the Petition itself indicates. Petition at 81 (noting that Hanisch was not discussed or involved in any 102/103 rejections, that Hayashi was briefly addressed, but that the "the Office committed material error in failing to consider numerous aspects of the disclosures in at least Hayashi, and discretionary denial is not warranted.")

the PTAB was issuing preliminary determinations, which are not final or binding. And PO also fails to note that, following the PTAB's invitation to the parties to further develop the record on this issue, Petitioner submitted a recent reply to Patent Owner's Response, clarifying this point in response to PO's arguments. IPR2024-00948, Paper 31. Petitioner emphasized the importance to a POSITA of Hanisch's disclosure of various mechanical components that handle the material output from the pre-dryer. *Id.* at 6-11. In particular, the functional limitations of these mechanical components would have signaled to a POSITA that the material emerging from the pre-dryer would be fully dry of all bulk liquid. And that such material would be considered "inactivated" under the PTAB's construction. These arguments have not yet been considered by the PTAB, and they provide the PTAB sufficient basis to agree with Petitioner.

Drying at Pressure Below 300hPa. PO again cites the PTAB's preliminary determination in IPR2024-00948 as rejecting Petitioner's argument that Hanisch discloses drying below 300 hPa. PO Brief, 14. But as noted, this is not a final or binding decision, and Petitioner has clarified the issues in its Reply to Patent Owner's Response, in that proceeding. IPR2024-00948, Paper 31 ("'097 Reply"). For example, the '097 Reply clarifies that PO's expert agreed that it was already known in the art that liquids evaporate at lower temperatures under partial vacuum pressure. '097 Reply at 12. Further, the Reply emphasizes that in view of this well known

scientific principle, and in view of the disclosures in Hanisch that deal with forming "dry cell fragments" by drying below 80° C, a POSITA would have appreciated that, to quickly vaporize the volatile electrolytes and produce "dry cell fragments" at 80° C or lower, vacuum pressures below 300 hPa are desirable, as doing so minimizes the temperature needed for drying. *Id.*

The '097 Reply also points out that a POSITA would have understood from Hanisch that using vacuum below 300hPa would be similarly preferred during high temperature heating, as such a vacuum would be a crucial method of controlling the amount of oxygen in the heating chamber, and the lower the air pressure in the heating chamber, the lower the chance of avoidable oxidation of valuable materials to be recovered. '097 Reply at 14-15. Thus, Hanisch's teaching of drying comminuted material under a "vacuum" describes the use of drying at pressures below 300 hPa.

These are selected examples of disclosures the Examiner overlooked during prosecution and reflect material error on the part of the Examiner that should weigh heavily against discretionary denial. These arguments have not yet been resolved by the PTAB, and the Examiner's failure to consider these disclosures in Hanisch was material error.

2. The Examiner's Failure to Consider Hayashi's Use of Hydrolysis Rather than Thermal Decomposition to Evaporate Electrolyte Solvents Lower than a Decomposition Temperature of the Fluorine Salt was Material Error

As indicated in the Petition, the Office materially erred in failing to consider the specific disclosure in Hayashi of using water vapor, as opposed to heating, to decompose LiPF_6 when using temperatures at or below 80°C and pressures below 300 hPa to volatilize organic carbonate solvents. Petition, 82. PO suggests that the Examiner did address this issue, but mischaracterizes the positions considered during prosecution.

To overcome an obviousness rejection involving Hayashi, the Applicant added limitations that the evaporation of organic carbonate was performed "at a pressure-temperature above a boiling point of the organic carbonate," with "the pressure being not more than 300 hPa" and "the temperature being not more than 80°C and lower than a decomposition temperature of the fluorine salt". EX1002 at 203. Applicant distinguished Hayashi by characterizing it as "effecting . . . a pressure-temperature that causes temperature decomposition of the organic solvent *and the fluoride salt* in the electrolyte," and that "Hayashi cannot reasonably be asserted as teaching or suggestion [sic] toward the pressure-temperature conditions defined by claim 1." EX1002 at 211. Applicant's argument thus framed Hayashi as limited to using heating to thermally decompose the fluorine salt in the electrolyte (lithium hexafluorophosphate, LiPF_6). But Hayashi explicitly distinguishes alternative

embodiments of how to achieve decomposition of LiPF_6 while also evaporating organic carbonate solvents above their boiling temperature.

One embodiment uses thermal decomposition (as cited by Applicant). But another embodiment uses water vapor to effect hydrolytic decomposition of LiPF_6 while also evaporating organic carbonate solvents above their boiling temperature: "The volatile component (DMC, EMC, DEC, PC, EC, or the like) is gasified by heating the electrolyte solution to a temperature higher than these boiling points. LiPF_6 is **decomposed by heating *or hydrolysis***, and thus the fluorine component is gasified." EX1010 4:43-47 (emphasis added). Applicant's argument ignored the alternative embodiment in Hayashi that uses water vapor to effect hydrolytic decomposition of LiPF_6 at pressure-temperature conditions that are within the scope of claim 1. The Examiner failed to address this issue, as a notice of allowance was filed subsequently. This was material error, as Hayashi's disclosure of using hydrolytic decomposition of LiPF_6 rather than thermal decomposition means that Applicant was incorrect in asserting that Hayashi did not teach or suggest "the pressure-temperature conditions defined by claim 1."

As PO concedes, Hayashi discloses the evaporation of organic carbonate solvents under pressures below 300 hPa and under temperature conditions that are below 80° C. PO Brief, 18-19. As explained in the Petition, Hayashi also discloses

doing so and (in the embodiment using hydrolytic and not thermal decomposition of LiPF_6) below the thermal decomposition temperature of the fluorine salt, *i.e.*, LiPF_6 .

PO contends that the Examiner had considered "the very issues that Petitioner claims were not addressed," citing various excerpts from Hayashi mentioned in an Examiner's rejection of then-pending claim 1. PO Brief, 18. This is incorrect. The language of then-pending claim 1 read as follows:

1. A method for treating used lithium batteries comprising at least a cathode, anode, separator, and electrolyte, comprising:
comminuting the batteries such that comminuted material is obtained, and
inactivating the comminuted material such that an inactivated comminuted material is obtained,
wherein inactivating includes a drying process where drying is conducted at a maximum pressure of 300 hPa and a maximum temperature of 80 °C to vaporize at least a portion of the electrolyte.

EX1002 at 250. No limitations regarding any decomposition temperature of a fluorine salt were included in then-pending claim 1, nor in the then-pending dependent claims. The Examiner's obviousness rejection of the pending claims focused on Hayashi's disclosure of the use of reduced pressure and temperature conditions. EX1002 at 223-24.

The only instances in which the Examiner mentioned Hayashi's use of water to hydrolyze materials were in the rejection of then-pending dependent claims 6-7 and 18. EX1002 at 225, 227. As to each of these claims, the Examiner's rejection

relied on a primary reference, Ho, which the Examiner noted disclosed an agitation step and took place in water, but was silent as to creating gas and removing vaporized electrolyte, in particular as to electrolyte material containing fluorine. EX1002 at 225, 227. In that context, it is clear that the Examiner merely mentioned Hayashi's use of "water to hydrolyze materials" as a basis to justify a motivation to combine Hayashi with Ho, where both included processes that involved water. The Examiner clearly did not cite or consider Hayashi's use of hydrolysis to decompose LiPF_6 in the context of evaporating organic carbonate solvents at temperatures "lower than a decomposition temperature of the fluorine salt."

3. The Examiner's Failure to Consider LithoRec's Disclosure of an Airlock in Claim 6 or Perry's Disclosure of an Agitator in Claim 7 was Material Error

PO conspicuously omits the fact that the IDS on which LithoRec and Perry were first listed was submitted August 2, 2024, which was several weeks *after* a notice of allowance filed July 16, 2024.⁶ It is also notable that the Examiner's reasons for allowance appear to have focused entirely on whether the art cited disclosed the method of claim 1, without regard to the relevance of any reference to any dependent claim. For example, the Examiner stated:

⁶ Notably, not only did PO wait until *after* the Notice of Allowance to inform the Patent Office about LithoRec and Perry, but PO still failed to inform the office of the then-pending Petition for *Inter Partes* Review for the '097 patent, in which LithoRec and Perry were the primary grounds of unpatentability.

The prior art recited in IDS filed 08/02/2024 ***does not teach the specific method*** for treating used lithium batteries as positively ***recited in the instant claim***. Some prior art features are silent to the pressure or to the temperature and do not comment on the decomposition of fluorine salt. Prior art that fails to recognize this attribute does not read on the scope of the instant claim as presented. Examiner is unable to make a rejection that the normal processing of the prior art filed in the IDS would vaporize organic carbonate of the electrolyte while having a temperature and pressure that does not decompose the fluorine salt

EX1002 at 24. The Examiner's analysis of the IDS cited art that included LithoRec and Perry was evidently focused on whether any of that art disclosed "vaporizing organic carbonate of the electrolyte while having a temperature and pressure that does not decompose the fluorine salt," as recited in claim 1, not on whether any prior art reference disclosed features of any dependent claims, such as the use of an airlock (as in LithoRec) in claim 6 or the use of an agitator (as in Perry) in claim 7.

Given the post-allowance stage of prosecution in which LithoRec and Perry were first listed in an IDS and the Examiner's explicit and exclusive focus on analyzing specific features of the sole independent claim, it would be improper to deny consideration of these references in the context of the Grounds presented here.

4. Ground 10: Indefiniteness of "Inactivating," "Agitator," and "Components of Comminuted Material"

a) The PTAB Has Not Resolved Petitioner's Arguments as to "Inactivating" as Indefinite, and the Arguments Here Differ from those at Issue in IPR2024-00948

PO mischaracterizes the PTAB's preliminary guidance on PO's motion to amend in IPR2024-00948 regarding the '097 Patent. That was non-binding, preliminary guidance, not a final written decision, and even the PTAB noted "that there is additional briefing yet to be filed that may further develop these arguments." IPR2024-00948, Paper 37 at 6. Further, the PTAB was expressly not considering the patentability of the originally challenged claims. *Id.* at n.1.

Further, while Petitioner maintains that PO's own arguments both in the proceeding and the co-pending IPRs on the '097 patent demonstrate the indefiniteness of "inactivating" across both patents, the fact remains that the claim language of the '463 patent differs from the '097 patent such that the Board's preliminary determinations for the '097 patent do not necessarily address the issue as to the '463 patent claims. For example, the '097 Patent claims a method "wherein the inactivating step is performed by drying the comminuted material." But claim 1 of the '463 Patent recites "wherein the inactivating includes a drying process." Thus, to the extent the '097 patent is limited to inactivation accomplished by drying, the '463 patent claims—on their face—recite inactivation as a standalone metric without clear guidance and one that merely includes some amount of drying.

PO is therefore wrong to imply that the Office has already considered and rejected Petitioner's arguments regarding the indefiniteness of "inactivating" as used in the '463 Patent.

b) PO Does Not Contend that the Office has Already Considered Petitioner's Arguments as to "Agitator" as Used in Claim 7

PO does not argue that these arguments were already presented to the Office or were substantially similar to those already considered by the Office, instead inserting arguments regarding the substance of one of Petitioner's Grounds. Petitioner submits that the mere existence of a disputed Ground cannot be the basis for discretionary denial of a petition for post-grant review.

c) PO Mischaracterizes Petitioner's Expert Testimony Regarding "Components of Comminuted Material" as Used in Claim 10

PO argues that this ground relies on conclusory expert testimony, but ignores that Mr. Juzkow provides technical reasoning underlying his opinion by noting (for example) that claim 10 recites "at least 90% by weight of the components of the comminuted material . . ." but that the specification does not explain what denominator is used to compute that "90%" value, and also "does not explain what differentiates the 'components' of comminuted material from the entirety of 'comminuted material.'" EX1003 ¶223. This issue weighs against discretionary denial.

III. THE CO-PENDING LITIGATION DOES NOT WARRANT DENIAL OF INSTITUTION

The district court litigation, in which PO asserts both the '463 and '097 Patents against Petitioner, has been stayed pending resolution of the pending '097 Patent IPR. PO entirely omits this fact in arguing that certain expert issues would be better suited for the district court case. Indeed, the district court case was stayed early in the proceedings, the parties have invested limited resources to date, and the bulk of the litigation has yet to proceed. No trial date is set, and if the stay is lifted, any trial would be highly likely to occur after Final Written Decisions are issued (the '097 Patent IPR has a deadline for FWD of November 22, 2025, and an FWD here would be expected approximately Fall of 2026), given the average time to trial in the District of Delaware of 33 months.

PO tellingly does not address the *Fintiv* factors given these circumstances surrounding the district court case. To the extent the Board nonetheless considers Petitioner's arguments that certain aspects of the Petition would be better suited for the district court case, the *Fintiv* factors make clear that discretionary denial on this basis is not warranted, as explained further below *See* Director Memorandum at 2 (noting that decisions on discretionary denial continue to involve evaluating "the discretionary considerations enumerated in existing Board precedent" including *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper No. 11 (PTAB Mar. 20, 2020) (precedential) ("Fintiv")).

1. Factor 1: Related District Court Case is Currently Stayed Pending Resolution of Related IPR

The '463 Patent is asserted in a parallel district court proceeding, along with the '097 Patent to which the '463 Patent is terminally disclaimed. *Duesenfeld GMBH v. Ascend Elements, Inc.*, Case No. 1:23-cv-01194-JFM (D. Del.). The Court has already issued a stay in that proceeding, pending resolution of the '097 Patent IPR. (EX1022, 1.) The Final Written Decision in the '097 Patent IPR is due on November 22, 2025, and thus the stay in the district court would be expected to remain in place for at least that duration. This factor weighs heavily in favor of institution. *See, e.g., Fintiv*, n.9.

2. Factor 2: No District Court Trial Date and Any Trial Will Likely be Well After a FWD

If this Petition is instituted, the Statutory Deadline for a Final Written Decision will be 12 months from the date that it was instituted—i.e., roughly fall 2026. No trial date has been set in the district court action, and as noted above, the stay is currently expected to continue through at least November 2025. Given the time-to-trial statistics for the District of Delaware, the average time from filing to trial is 33 months.⁷ The amended complaint in the district court case, in which the '463 Patent

⁷ *See* https://www.uscourts.gov/sites/default/files/document/fcms_na_distcomp_arison0331.2025.pdf (last visited July 9, 2025).

was first asserted, was filed in January of this year. *See* ECF No. 130 (D. Del. Jan. 8, 2025). That proceeding was then stayed a few days afterward. EX1022.

In view of the 33-month average time from filing to trial, particularly in view of the ongoing stay of the district court case through at least November 2025, it is highly likely that any Final Written Decision here would issue before any trial in the district court case. This factor weighs in favor of institution. *See Amazon.com et al. v. NL Gilken Inc.*, IPR2025-00250, Paper 14 at 2 (PTAB May 16, 2025); *Mercedes Benz Group AG v. The Phelan Group LLC*, IPR2025-00413, Paper 13 at 2 (PTAB June 25, 2025).

3. Factor 3: The Stage of Parallel Proceedings in the District Court Case and IPR of Terminally Disclaimed Patent Weigh Against Discretionary Denial

As of the date of filing, because the district court case is stayed, Petitioner has not yet answered PO's First Amended Complaint raising allegations as to the '463 Patent. The parties have engaged in some fact discovery relating to the '097 Patent but have not yet exchanged contentions relating to the '463 Patent. Only two depositions were taken prior to the stay. The three depositions taken since then were limited, per the Court's order staying the case, to document preservation issues connected to the stay, and not on the actual merits of the case. EX1022 at 4 ("Duesenfeld may conduct discovery pertaining only to the preservation dispute. In

particular, we think it appropriate for Duesenfeld to complete its site inspection and no more than 3 depositions.").⁸

Further, no expert discovery on the merits of either the '097 or the '463 Patent has occurred, the parties have not engaged in any claim construction proceedings relative to the '463 Patent, and the Court has not addressed any substantive issues relating to the '463 Patent, including claim construction. This factor thus weighs in favor of institution. *See* IPR2025-00413, Paper 13 at 2 (rejecting request for discretionary denial where, among other things, the "parties have invested relatively little resources into the district court proceeding").

4. Factor 4: Petitioner's *Sotera* Stipulation Minimizes Any Duplicative Efforts Concerns

Factor 4 weighs heavily against discretionary denial because Petitioner's *Sotera* stipulation, Petition at 84-85, avoids concerns about duplicative efforts. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 19 (PTAB Dec. 1, 2020). In staying the district court case, the court emphasized that the "broad sweep of PGR estoppel offers significant potential for simplification if the PGR for the 463 Patent were instituted and Duesenfeld prevails." EX1022 at 3. PO's silence on this factor should also weigh against discretionary denial.

⁸ The site inspection identified in the Court's stay order has not yet occurred, as Petitioner's facilities have been idle for several months pending regulatory reviews, and PO wishes to conduct such an inspection during normal operations.

5. Factor 5: Other Circumstances That Impact the Board's Exercise of Discretion, Including the Merits

To the extent PO's arguments with respect to *Ecto World* touch on *Fintiv* Factor 5 ("other circumstances that impact the Board's exercise of discretion"), those arguments should be rejected, as discussed above. Factor 5 also weighs in favor of institution.

IV. THE DIRECTOR MEMORANDUM IDENTIFIES ADDITIONAL FACTORS THAT FAVOR INSTITUTION

In addition to the factors in *Fintiv*, *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GMBH*, IPR2019-01469, Paper 6 (PTAB. Feb. 13, 2020) (precedential), and *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph), the Director Memorandum identified additional factors to consider when evaluating a request for discretionary denial, such as the "strength of the unpatentability challenge,"⁹ the "extent of the petition's reliance on expert testimony," the "settled expectations of the parties, such as the length of time the claims have been in force," as well as the PTAB's ability to comply with statutory

⁹ Petitioner echoes concerns of other practitioners that without substantial precedential guidance on what "strength of the patentability challenge" means or what standard would be used to assess it, this factor risks burdening the Parties and Director with a premature and exhaustive briefing on the merits of the grounds in a petition, without clear standards on what passes muster. Petitioner submits that anything beyond objectively frivolous arguments should be up to the PTAB to resolve.

deadlines and workload. Director Memorandum at 2-3. As discussed below, none of these factors warrants discretionary denial.

A. The Strength of the Challenges to Patentability in the Petition

PO spends nearly twenty pages under various subheadings criticizing the strength of the patentability challenge. PO Brief, 39-58. But as noted above at III.A.1, PO simply makes varying, cumulative versions of the same argument, whether Tomioka discloses or teaches "comminuting" as used in the '463 Patent. And as discussed above at III.A.1, PO's arguments rest on cherry-picked examples and ignore the clear language in Tomioka that discloses using "cutting" to break down "electrode element components such as the positive electrode, negative electrode, and separator, and if necessary, cutting them into strip-like pieces." EX1005 at [0012]. For the reasons set forth in Section III.A.1, it is clear that Tomioka discloses and/or teaches "comminuting"; PO's arguments on this point should be rejected.

B. The Petition Relies on Proper Expert Testimony

PO argues for discretionary denial because, it asserts, the Petition relies on "conclusory" and "disputed" expert testimony. PO Brief, 29-30, 40, 59-60. This is incorrect. As an initial matter, the Petition cited to the expert opinion from Marc Juzkow to provide the required evidentiary support for arguments such as indefiniteness and obviousness that, by law, must be considered from the perspective

of a POSITA. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (meaning of claim terms is determined from perspective of POSITA); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (determination of obviousness is made from perspective of POSITA). Such expert input is required because "[a]ttorney argument is not evidence," *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017), and the PTAB has made clear "that mere attorney argument unsupported by factual evidence is entitled no probative value." *See PLR Worldwide Sales LTD. v. Flip Phone Games, Inc.*, IPR2024-00209, Paper 28 at 32 (PTAB April 24, 2025). Thus, the mere use of expert testimony to support a petition for post-grant review is not a proper basis to discretionarily deny institution.

Further, PO takes issue with only a minuscule portion of the issues on which Mr. Juzkow opined. The first of these is the indefiniteness of the term "inactivating," and the second is Tomioka's disclosure of "comminuting." PO Brief, 29-30, 59-60. But the Petition included properly supported expert opinion from Marc Juzkow as to each of these issues. Petition at 31-33, 71-73; EX1003 ¶¶119-24, 216-19.

As to Mr. Juzkow's testimony regarding the indefiniteness of "inactivating," PO merely states that it is "conclusory and contested." PO Brief, 29 & n.4. But ironically, PO fails to explain further, and as a result, this argument should be given little weight.

Relevant to his analysis of Tomioka's disclosures of "comminuting," Mr. Juzkow provides an extensive background primer on the components of lithium-ion batteries and recycling processes for such batteries, citing numerous supporting exhibits and providing detailed technical analysis. EX1003 ¶¶39-66. In that detailed discussion, Mr. Juzkow notes that "a comminution step" can refer, for example, to mechanical cutting processes like shredding. EX1003 ¶63. Mr. Juzkow also notes that the '463 Patent itself admits that "Hanisch teaches a method in which 'galvanic cells are initially mechanically comminuted" EX1003 ¶187 (citing EX1001, 1:43-45.) *See Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1339 (Fed. Cir. 2020) ("it is appropriate to rely on admissions in a patent's specification when assessing whether that patent's claims would have been obvious")

Mr. Juzkow, in discussing the motivation to combine LithoRec with Tomioka and/or Hanisch, observes that "Tomioka, Hanisch, and LithoRec each disclose systems for recycling lithium ion batteries, which systems include *shredding the batteries* and drying the *shredded material* so as to evaporate electrolyte." EX1003 ¶103. In this discussion, Mr. Juzkow points to Tomioka's use of "dismantling the collected batteries," in the same way that Hanisch uses the term "crushing [galvanic] cells..." and that LithoRec uses the term "mechanical comminution and separation of the cell". EX1003 ¶103 (citing EX1005, [0011]; EX1021, Abstract, [0001], [0025], EX1021 at 239).

Mr. Juzkow's conclusion that a "POSITA would have understood that "dismantling" used batteries comprises comminuting the batteries, including by "cutting", EX1003 ¶121, is merely the conclusion drawn from comparison of the language he cites as factual support from Tomioka with the numerous other disclosures of "comminution." Specifically, Mr. Juzkow was identifying the language in Tomioka that discloses taking "electrode element components such as the positive electrode, negative electrode, and separator, and if necessary, cutting them into strip-like pieces," as factual support taken in view of his other technical discussion of comminution in battery recycling (which he notes can involve mechanical cutting processes like "shredding", EX1003 ¶63), as well as the common disclosures of "comminuting" among Tomioka, Hanisch and LithoRec. EX1003 ¶103. Similarly, Mr. Juzkow cites Tomioka's language as factual support when explaining why Tomioka renders obvious "comminuting," where, for example, it teaches "cutting" of "electrode element components . . . into strip-like pieces." EX1003 ¶125.

And even if the Board were to give little weight to Mr. Juzkow's testimony (or even if it were to disregard it entirely), the specific issues PO identified as to comminution are not complicated, and involve straightforward processes like shredding, cutting, crushing, and the like, which are terms and concepts that are "easily understandable without the need for expert explanatory testimony." *See*

Columbia Sportswear N. Am., Inc. v. Seirus Innovative Accessories, Inc., 942 F.3d 1119, 1127 (Fed. Cir. 2019); *see also Guangdong Xinbao Electrical Appliances Holdings v. Adrian Rivera*, IPR2014-00042, Paper 50, at 22-23 (PTAB Feb. 6, 2015). And it is clear that the PTAB has been able to consider the issues with respect to the indefiniteness of the term "inactivating" regardless of expert testimony, given that it preliminarily adopted a construction for "inactivating" (notwithstanding Petitioner's continued disagreement with that construction) in the related IPR proceedings. IPR2024-00948, Paper 10 at 11-12; Paper 37 at 15-17.

C. Settled Expectations of the Parties

PO does not claim to have any settled expectation that the '463 Patent would not be challenged, nor could it. First, the '463 Patent issued October 15, 2024 (EX1001), only five months before Petitioner timely brought this challenge for post-grant review on March 7, 2025. More importantly, PO already asserted the '463 Patent against Petitioner in the Parallel Proceeding before this challenge was brought, and asserting a patent necessarily includes a likelihood that the patent will face invalidity challenges. A PGR challenge brought within five months of issuance and after the challenged patent has been asserted in district court cannot conceivably frustrate any settled expectation of PO. Indeed, PO was aware four months after issuance that this challenge would be brought, as filing this PGR was among the conditions for the district court's entry of a stay. *See* EX1022 at 3. PO cannot claim

under these circumstances that it had any settled expectation that the '463 Patent would go unchallenged.

D. PTAB Workload Considerations

PO does not identify any basis on which to question the PTAB's ability to resolve the issues raised in this Petition. Indeed, the PTAB is already considering a challenge to claims in the terminally disclaimed '097 Patent, and there is no evidence that it would be incapable of doing so here. Discretionary denial would, in fact, risk inefficiencies stemming from potentially inconsistent outcomes with the '097 Patent and the potential for serial challenges to the '463 Patent by others (adding to the PTAB workload). *Accord Posco Co., Ltd. v. Arcelormittal*, IPR2025-00370, Paper 10, at 3 (PTAB June 25, 2025) ("It is an appropriate use of Office resources to provide consistency and predictability to the public, and to ensure that a patent applicant or owner does not take action inconsistent with the judgment in a prior Office proceeding.").

V. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests that the Director deny PO's request for discretionary denial.

Respectfully submitted,

Dated: July 16, 2025

/s/ Andrew D. Gish
Andrew D. Gish (Reg. # 67,562)

CERTIFICATE OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. §42.24(a) and (d) that the foregoing Petitioner's Opposition to Patent Owner's Request for Discretionary Denial complies with the word count limits set forth in 37 C.F.R. §42.24(a)(1)(ii) and the Director Memorandum. Excluding the parts exempted by 37 C.F.R. §42.24(a)(1), the foregoing Opposition contains 9,467 words as determined using the word count feature in Microsoft Word, which was used to prepare this Opposition.

Dated: July 16, 2025

/s/ Andrew D. Gish
Andrew D. Gish (Reg. # 67,562)

CERTIFICATE OF SERVICE

The undersigned hereby confirms that on July 16, 2025 the foregoing Petitioner's Opposition to Patent Owner's Request for Discretionary Denial was served by filing these documents through the Patent Trial and Appeal Board End to End (PTAB E2E) as well as providing a courtesy copy via e-mail to the following attorneys of record for the Patent Owner listed below:

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Dated: July 16, 2025

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