

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZHUHAI COSMX BATTERY CO., LTD.,
Petitioner

v.

NINGDE AMPEREX TECHNOLOGY LTD.,
Patent Owner

IPR2025-00405
U.S. Patent No. 11,769,910

PATENT OWNER'S DISCRETIONARY DENIAL BRIEF

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2006	Docket Navigator Statistics for Judge Rodney Gilstrap (accessed May 5, 2025)
2007	Docket, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:22-cv-00232 (E.D. Tex.)
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2013	Darts IP Reports: CN109301326, CN104466097, CN206490141, CN108352492 (May 6, 2025)
2014	Dec. 20, 2021 memo titled “New PE2E Search Tool Using AI Search Features” by Acting Deputy Director Andrew Hirshfeld
2015	Declaration of Dean R. Wheeler, Ph.D.
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2017	Sigma-Aldrich Safety Data Sheet, “Lithium hexafluorophosphate solution in ethylene carbonate-d4 (99 atom % D) and ethyl-d5 methyl-d3 carbonate (98 atom % D), 1.0 M LiPF ₆ in EC-d4/EMC-d8=3:7 (v/v), battery grade”, dated July 11, 2016
2018	Safety Data Sheet, “Lithium Hexafluorophosphate in EC/EMC 3:7”, dated September 2018
2019	Sigma-Aldrich Product Specification, “Lithium hexafluorophosphate solution - in ethylene carbonate and diethyl carbonate, 1.0M LiPF ₆ in EC/DEC=50/50 (v/v), battery grade”
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2032	Jerome Workman, <i>A Comprehensive Review of Spectroscopic Techniques for Lithium-Ion Battery Analysis</i> , (Dec. 4, 2024), https://doi.org/10.56530/spectroscopy.ii3689u3
2033	Anup Barai et al., <i>A Comparison of Methodologies for the Non-Invasive Characterisation of Commercial Li-Ion Cells</i> , 72 Progress in Energy and Combustion Science 1-31 (2019)

I. INTRODUCTION

Ningde Amperex Technology Ltd. (“ATL” or “Patent Owner”) respectfully submits this brief requesting that the Board deny institution pursuant to the Corrected Petition for *inter partes* review (Paper 3 or “Pet.”) filed by Petitioner Zhuhai CosMX Battery Co., Ltd. (“Petitioner” or “CosMX”) pursuant to the Acting Director’s March 26, 2025 Memorandum titled “Interim Processes for PTAB Workload Management” (hereafter “Director Memo”).

The Petition seeks *inter partes* review (“IPR”) of claims 1-6 and 12-26 (the “Challenged Claims”) of U.S. Patent No. 11,769,910 (the “’910 Patent,” Ex. 1001). The ’910 Patent and five other patents are the subject of a patent infringement action that ATL has brought against CosMX that is currently pending in the Eastern District of Texas as Civil Action No. 2:24-cv-0728 (the “Second Texas Litigation”). The Petition should be rejected and institution should be denied for numerous reasons.

First, the Second Texas Litigation involves six patents in a single unified district court proceeding. Ex. 2001 (Second Amended Complaint) at 1. However, Petitioner has filed (to date) seven different IPR petitions¹ on six patents over the span of three months in an attempt to avoid or delay a single streamlined district

¹ See IPR2025-0405; IPR2025-00432; IPR2025-00385; IPR2025-00431; IPR2025-00389; IPR2025-00722; and IPR2025-00524.

court trial, which would frustrate the intended efficiencies of the America Invent Act (“AIA”). In essence, Petitioner is attempting to convert (A) a single district court proceeding into (B) the same district court proceeding, *plus* seven separate IPR trials (involving invalidity determinations by potentially *up to twenty-two* factfinders), a classic example of the type of waste and inefficiency (and potential for inconsistent results) that the Director’s new interim guidance suggests avoiding. A single Article III proceeding has the strong potential to be the fastest and most efficient resolution of the Parties’ many disputes, which favors denial of institution.

Second, the Petition fails to even attempt to set forth a *prima facie* ground for claim element [20.7] of independent claim 20. Therefore, even if every other argument in this Petition and every other co-pending Petition were successful, trial would still need to proceed in the underlying district court action regarding the infringement and validity of claims 20-26 of the ’910 Patent. Because trial cannot be avoided even with Petitioner’s numerous IPR petitions, institution should be denied in the interest of efficiency.

Third, as explained in detail in Patent Owner’s Preliminary Response filed on this same date, the technical merits of Petitioner’s unpatentability challenges are weak. *First*, because ***none*** of the prior art references upon which Petitioner relies discloses or renders obvious the claimed weight percentage value of propyl propionate (Z) based on a total weight of the electrolyte, and no reference

apprehends the importance of the Y/Z ratio, the Petition relies on its expert's numerous unjustified, incorrect, and improper assumptions in a failed attempt to estimate a value for the claimed weight percentage of propyl propionate (Z) that allegedly meets the claimed ranges for the Y/Z value. *Second*, with respect to Grounds 1A-1C, 2A-2C, and 3A-3C, Petitioner primarily relies on Zeng (Ex. 1006), which never explicitly discloses a weight percentage of the propyl propionate (Z) based on a total weight of the electrolyte solution or otherwise provides sufficient information from which to determine such value. Despite these shortcomings, Petitioner relies on unfounded assumptions which are diametrically opposed to the plain wording and teachings of Zeng. *Third*, Petitioner's attempts to cure the failures of Zeng by relying on Matsuoka (Ex. 1007) in Grounds 1B, 1C, 2B, and 2C also necessarily fail. There is no "direct disclosure of an appropriate weight percentage Z of PP" (Pet. 43) in Matsuoka and Dr. Lucht's central assumption that a POSITA would somehow single out and apply Matsuoka's preferred "non-nitrile additive" ranges to *only* propyl propionate completely disregards the numerous other components of Zeng's electrolyte that would also be considered "non-nitrile additive" components, and therefore, the aggregate of which would also subject be to any alleged "non-nitrile additive" range. *Fourth*, Kim (Ex. 1008) also does not disclose or render obvious the claimed propyl propionate weight percentage nor does Kim cure the other failures of Zeng, alone or in combination with Matsuoka, in

Grounds 1C, 2C, and 3C or the failures of Zheng in Grounds 4C, 5C, or 6C as discussed below. Kim is replete with internally contradicting data and woefully inadequate experimental procedure details from which a POSITA could not draw any conclusions. Petitioner mischaracterizes the measurements and teachings of Kim and fails to demonstrate that a POSITA would apply any discerned teachings to any other reference. Indeed, Petitioner never makes a motivation to combine argument *at all* and never evaluates the POSITA's reasonable expectation of success and, thus fails to make out a *prima facie* case of obviousness to combine Kim with any other reference. *Fifth*, despite the fact that *none* of the examples in Zhou (Ex. 1014) include propyl propionate, in Grounds 4A, 4C, 5A, 5C, 6A, and 6C, Petitioner primarily relies on Zhou and Dr. Lucht's unsupported assumption and hindsight-driven testimony arguing that a POSITA would have substituted propyl propionate for ethyl acetate in Zhou's Example 8. Petitioner fails to address the proper interpretation of Example 8 by the POSITA and wrongly assumes that Example 8 outperforms other batteries based on a clear misunderstanding of kinetic performance data depicted by AC impedance spectra in Zhou.

Such unsupported assumptions across all grounds render the calculations made by Petitioner unreliable, demonstrate the lack of sufficient disclosure in the prior art references, and altogether undercut Petitioner's ability to meet its burden. Even if one were to assume that such flawed assumptions and calculations are

reasonable and justified, and that the prior art references disclose some overly broad range of Y/Z values that fall within or overlap the claimed Y/Z ranges, the Petition disregards the demonstrated criticality of such ranges. Petitioner cannot fix its unsupported assumptions, the lack of sufficient disclosure in the prior art references, or its failure to overcome the demonstrated criticality of the claimed Y/Z range and, thus, will not be able to prove, by a preponderance of the evidence, that the Challenged Claims are rendered obvious.

Fourth, the Petition should be denied under § 314(a) based on the *Fintiv* and other discretionary factors identified by the Acting Director because, in the district court case where the '910 Patent is at issue, (1) the parties are the same as in this IPR,² (2) a stay has not been requested and is unlikely to be granted if requested,³ (3) trial in the district court is scheduled to occur over one month *before* the statutory final written decision deadline in this IPR (and at least four months *before* the statutory final written decision deadline in IPRs on other patents at issue in the same

² Ex. 2001 (Second Amended Complaint).

³ See, e.g., *Force MOS Tech. Co., Ltd. v. ASUSTeK Comput., Inc.*, Case No. 2:22-cv-000460, ECF No. 74 (E.D. Tex. April 10, 2024) (stating it “has a consistent practice of denying motions to stay when the PTAB has yet to institute post-grant proceedings” as to all patents at issue).

case, which makes the district court even less likely to grant a stay),⁴ and (4) the same prior art that is asserted in the Petition is asserted by Petitioner at the district court, including in combination with unpublished system prior art.⁵

While Petitioner claims to have executed a *Sotera* stipulation, the effect of this stipulation is significantly reduced (if not eliminated completely) because Petitioner also asserts obviousness combinations of unpublished system prior art in the district court proceeding with most of the six prior art reference relied on in its Petition. *See* Ex. 2003 (Invalidity Contentions Cover Pleading) at 22-23. As a result, Petitioner has retained for themselves the option to try invalidity arguments in multiple fora, in contrast to the efficiency sought by the creation of *inter partes* review in the AIA. FAQs at Q.14 (“ . . . The Director will take into account whether the stipulation materially reduces overlap between the proceedings. Where the petitioner is relying on corresponding system art in a co-pending proceeding and/or several other invalidity theories, a stipulation may not be particularly meaningful because the efficiency gained by any AIA proceeding will be limited.”). As the Acting Director recognized in a recent Order Granting Director Review, such stipulations do not ensure that these IPR proceedings would be a “true alternative”

⁴ Ex. 2002 (Second Texas Litigation Scheduling Order).

⁵ Ex. 2003 (Invalidity Contentions Cover Pleading) at 22-23.

to the district court proceeding where unpublished system prior art is asserted in combination with the art used in the IPR's grounds. *Motorola Sol'ns, Inc. v. Stellar LLC*, IPR2024-01205, Paper 19 (Order Granting Director Review, Vacating the Decision Granting Institution, and Denying Institution of *Inter Partes* Review) at 3-4 (P.T.A.B. March 28, 2025) (Stewart, Dir.) (finding that a *Sotera* stipulation was unlikely to moot petitioner's combination of IPR art with unpublished system prior art in district court proceedings, and therefore could not outweigh other factors favoring denial).

Fifth, the desire for administrative efficiency and not risking inconsistent results favors denial. The underlying district court lawsuit at issue here follows an earlier district court lawsuit (Civil Action No. 2:22-cv-00232, the "First Texas Litigation") in which CosMX was already adjudicated to be a willful infringer of three other ATL patents and was ordered to pay ongoing royalties on CosMX products for the one patent that was not found invalid. Ex. 2007 (First Texas Litigation Docket); Ex. 2009 (Amended Final Judgment in First Texas Litigation). One of the patents found willfully infringed, but invalid, in the First Texas Litigation was U.S. Patent No. 10,833,363 (Ex. 2012, the "'363 Patent"), a parent application to the '910 Patent with broader claims. Ex. 2008 (Joint Motion for Entry of Protective Order) at 2. In that now-completed First Texas Litigation, CosMX raised (among other defenses) invalidity of the '363 Patent in view of Zeng (one of the two

primary references raised in this IPR). However, the teachings of Zeng with respect to enablement of the '363 Patent's claim elements, and its availability as a prior art reference, are already being contested in consolidated Appeal Nos. 2025-1037 and 2025-1091, now pending before the Federal Circuit. *See e.g.*, Ex. 2011 (Fed. Cir. General Docket). Briefing in those consolidated appeals will be fully complete before the deadline for institution in this matter, but oral argument (given current backlogs at the Federal Circuit) is not likely to be held for approximately one year or more, with a written decision to follow some time thereafter. That ongoing appeal raises the issues of whether Zeng enabled a POSITA to practice the independent claim elements without undue experimentation, and also whether CosMX provided evidence that Zeng qualified as a printed publication under 35 U.S.C. § 102(a)(1) as of the claimed priority date for the '363 Patent—and results of that appeal have the potential to be dispositive of Petitioner's application of Zeng in this Petition.

Sixth, while the claims at issue in the '910 Patent and its foreign counterparts are different and the law of those jurisdictions is different, German courts have already considered at least the Zeng prior art reference raised here by Petitioner in at least one nullity proceeding, and concluded in that proceeding, that Zeng is not likely to invalidate a European counterpart to the '910 Patent, EP3627606 (whose independent claims include broader numerical ranges than the '910 Patent) because in Germany, as here, Petitioner misinterprets the teachings of Zeng. Ex. 2004

(Germany Order 1). These findings counsel against wasting additional effort by the Board to reach the same conclusion regarding Petitioner's arguments, which are a waste of resources and simply inefficient and repetitive assertions of the same or similar prior art references in multiple invalidity attacks in different jurisdictions.

Seventh, the parties have invested significant effort, resources, and discovery not only in the prior and current U.S. proceedings but in other patent proceedings around the world, including patent infringement and validity proceedings in both Germany and China. CosMX has been found to be an infringer of ATL patents in the U.S., Germany, and China and has been ordered to pay a running royalty rate for sales of CosMX products on a different U.S. patent already and its products are already the subject of injunctions in Germany and China. *See e.g.*, Ex. 2007 (First Texas Litigation Docket), Ex. 2009 (Amended Final Judgment in First Texas Litigation), Ex. 2004 (Germany Order 1), Ex. 2005 (Germany Order 2), Ex. 2010 (Press Release), Ex. 2013 (Darts IP Reports). The resolution of this single IPR proceeding and the six other co-pending IPR petitions related to the same district court case is therefore unlikely to effect a final resolution of the parties' worldwide dispute, but would require *significant* investment of resources by the PTAB to reach final written decisions in all seven IPR proceedings. Further, even if the IPR is instituted but ultimately the patent claims are found valid, this significant investment of effort would likely be duplicated in the district court because CosMX asserts

invalidity theories of obviousness including the art in the Petition's Grounds combined with various system prior art references in the district court, meaning the district court will need to conduct an invalidity analysis regardless of the outcome of this IPR or the other six co-pending IPRs. Ex. 2003 (Invalidity Contentions Cover Pleading). Efficient stewardship of the PTAB's limited resources requires allowing the U.S. district court to decide CosMX's validity challenges in a single streamlined district court proceeding, instead of holding seven separate PTAB proceedings *plus* a district court proceeding.

Eighth, Petitioner has filed a lengthy expert declaration purporting to address every single limitation of the asserted claims and every ground, rather than limiting expert testimony to a few key limitations where it is required. *See, e.g.*, Ex. 1003 ¶¶ 65-103 (providing detailed expert testimony for every limitation of claim 1). Moreover, significant portions of the expert declaration include unsupported testimony and clearly unjustified assumptions in an attempt to fill significant gaps in the references' own disclosures. Patent Owner is filing an expert declaration with its Preliminary Response that rebuts this evidence. As such, there will be numerous complex issues disputed by the experts, and an Article III court is a more appropriate forum for resolving those disputes. FAQs at Q.21 ("While the Board may consider expert testimony, as a matter of efficiency, extensive reliance on expert testimony

and/or reasonable disputes between experts on dispositive issues may suggest that the questions are better resolved in an Article III court.”).

Ninth, at least the primary references asserted in the proposed Grounds were each already presented to the Examiner in an IDS during prosecution of the '910 Patent, which favors denial. Ex. 1002 at pp 15, 384. Petitioner has made no showing of material error in the Examiner’s finding that the patent claims were allowable over those references.

Tenth, the sheer number of proposed Grounds (18 different grounds, with at least 5 grounds raised for every challenged claim) strongly weighs in favor of denial.

Lastly, and perhaps most important to the efficient distribution of PTAB resources, the underlying district court trial is likely to proceed regardless of whether the Board institutes review in this IPR proceeding because (to date) seven IPR petitions have been filed against the six different patents at issue in that district court proceeding, which were spaced out over the course of several months, resulting in final written decision deadlines that are likely to be four or more months after the scheduled jury trial in that case. *See, e.g.*, IPR2025-00405, Paper 1 (filed Jan. 3, 2025); IPR2025-00524, Paper 1 (filed Apr. 2, 2025); Ex. 2002 (Second Texas Litigation Scheduling Order). Further, this is after the denial of institution for three IPR petitions previously filed by Petitioner against ATL patents at issue in the First Texas Litigation. IPR Nos. 2023-00586; 2023-00587; 2023-00585. The significant

amount of effort and resources required by the Board to address seven IPR petitions, where the district court is highly likely to proceed to trial anyway (at least because Petitioner has failed to even make a *prima facie* case as to claims 20-26 in this IPR), counsels against further wasting the Board's resources for these numerous IPR petitions that will be resolved in a single trial before the Final Written Decisions by the Board.

The Board should therefore exercise its discretion to deny institution because Petitioner has not met its burden of demonstrating that it is more likely than not that any claim of the '910 Patent is unpatentable and because denial is warranted in the interests of efficiency and fairness. If CosMX has invalidity defenses to raise against the '910 Patent or against the five other patents at issue in the district court proceeding, including defenses it intends to raise combining the asserted prior art references together with the unpublished system prior art references, it may raise those all together in a single consolidated district proceeding where they may all be considered in view of all the evidence. This is the most efficient outcome and achieves the AIA's intended efficiency goals better than multiple serial IPR proceedings that trail the underlying district court proceeding and only add additional uncertainty and risk of inconsistent positions to the process.

II. BACKGROUND

A. Technology Overview

In lithium-ion batteries, lithium ions shuttle back and forth between the negative and positive electrodes during cycling. During the first few cycles of the lithium-ion battery the electrolyte undergoes reduction at the negative electrode (or anode), and oxidation at the positive electrode (or cathode). This forms a passive protective layer on the anode and cathode called the solid electrolyte interphase (SEI), comprising a mixture of inorganic and organic compounds and especially electrolyte decomposition or other reaction products. Battery performance, irreversible charge loss, rate capability, cyclability, and safety are highly dependent on the quality of the SEIs.

Many vital, interdependent factors contribute to properties of the SEI and there is no absolute parameter circumscribing the SEI. It is the combined effect of all these factors which affects the properties, quality, and efficiency of the SEI. In particular, the specific type of solvent, organic additives, and lithium salt(s) added to the electrolyte solution, and the specific concentration each such component, can play a crucial role in determining the performance of the SEI.

While anode SEIs have been studied for over two decades, cathode SEIs have not been studied as much, and constitute a relatively new and “hot” area of research

today. In particular, cathode SEIs that do not decompose and perform well at voltages above 4.4V are an area of high interest in industry and academia.

B. The '910 Patent Claims an Innovative Electrolyte Solution Composition

The '910 Patent describes a novel lithium-ion battery electrolyte solution that can provide a firm protective SEI film on the surface of the cathode of an electrochemical device such as a lithium-ion battery that is not easily decomposed, effectively inhibits the increase in DC internal resistance of the lithium ion battery, and achieves high capacity density, and excellent cycle and storage performances. Ex. 1001, 1:56-63, 3:8-20. The '910 Patent achieves this by providing an electrolyte solution comprising a compound comprising a dinitrile compound, a trinitrile compound, and propyl propionate in specific weight percentage concentrations and mixing ratios. *Id.* 1:56-63, 27:49-60, 29:19-34. The '910 Patent explains that a dinitrile compound can form a protective film (or SEI) on the cathode of the electrochemical device, so as to inhibit the decomposition of the electrolyte solvent in the electrochemical device. *Id.* 1:50-53. However, since the protective film itself is decomposed on the surface of the cathode at a high potential, the protective film's role of inhibiting decomposition of the solvent cannot be sustained for a long time. *Id.* 1:53-56.

The '910 Patent discusses the challenges with electrochemical devices working at voltages above 4.4V, noting that “[a]t a high voltage, the oxidizability of the cathode material is increased, and the stability is lowered, which makes the electrolyte easily decompose on the surface of the positive electrode or results in deterioration of the materials of the electrochemical device, so that the capacity of the electrochemical device is decreased.” *Id.* 22:57-62, 1:30-33; *see also*, 1:33-38 (“at high voltages, the oxidation activity of the positive electrode material increases, and the stability decreases, which makes the electrolyte decompose on the surface of the positive electrode easily or cause deterioration of the battery material, resulting in a decrease in battery capacity.”). The '910 Patent further explains that “[p]rior to the present application, the primary solution [was] to add a film-forming additive to the electrolyte [but] doing so will cause an increase in the DC internal resistance of the battery, thereby resulting in a decrease in the cycle performance and a decrease in the capacity retention rate.” *Id.* 22:62-67.

The inventors of the '910 Patent discovered that by using a mixture of a dinitrile compound, a trinitrile compound, and propyl propionate in specific concentration ranges and mixing ratios, a firm SEI protective film that is not easily decomposed at a high potential of 4.45V and inhibit a DC internal resistance in the electrochemical device, could be formed on the surface of the cathode. *Id.* 1:56-63 (“The present inventors unexpectedly found that by using a mixture of a dinitrile

compound, a trinitrile compound and propyl propionate, a firm protective film which is not easily decomposed on the surface of the cathode at a high potential can be formed. The electrolyte according to the embodiment of the present application can effectively inhibit the increase in DC internal resistance of the electrochemical device.”), 29:26-29 (“The combination of [a dinitrile, a trinitrile, and propyl propionate as specified in Table 2] can form a cathode protection film so as to reduce the side reactions, thereby effectively controlling the polarization and side reactions of the battery.”), 29:29-34 (“The ratio of the content of the trinitrile compound to the content of propyl propionate has great effect on the change in DC internal resistance of the battery. When Y/Z is within the range of 0.01-0.3, a better inhibition effect on the increase in DC internal resistance is achieved.”).

III. LEGAL STANDARDS

It is Petitioner’s burden to demonstrate unpatentability by a preponderance of the evidence. The Petition must establish, with particularity, the grounds and evidence that support invalidating the patented claims. 35 U.S.C. § 312(a)(3). Petitioner “must ‘specify where each element of the claim is found in the [relied upon] prior art patents.’” *In-Depth Geophysical, Inc. v. ConocoPhillips Co.*, IPR2019-00850, Paper 56, 27 (P.T.A.B. Sept. 3, 2020) (quoting 37 C.F.R. § 42.104(b)(4)). Pursuant to 37 C.F.R. § 42.108(c), Petitioner must demonstrate a reasonable likelihood that “at least one of the claims challenged in the petition is

unpatentable” to warrant institution of an inter *partes* review. Petitioner cannot satisfy this burden by reliance on unsupported and unscientific assumptions, an unreliable method, and incorrect calculations that attempt to cover the glaring shortcomings of the prior art references, which simply do not teach or render obvious the claimed Z value or Y/Z ratio.

In addition, the Board makes its determination regarding institution based on what the Petition *actually presents* and not what it could have reasonably contained had it been drafted differently. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (holding that the Board is *not* “free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during [a post-grant proceeding]”). The Board cannot “deviate from the grounds in the petition and raise its own” theories of invalidity. *Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018).

In addition to the underlying failures of the Petition, the Board should deny institution under *Apple v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (P.T.A.B. Mar. 20, 2020) (precedential) (“*Fintiv*”) and other discretionary factors committed to the Board’s discretion under § 314(b), including the factors identified by the Acting Director in the March 26 Memorandum and the Board’s latest guidance responding to FAQs for Interim Processes for PTAB Workload Management at

<https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management>

(last visited May 13, 2025). The *Fintiv* factors include:

1. Whether the court has granted a **stay** or evidence exists that one may be granted if an IPR is instituted.
2. The **proximity of the court's trial date** to the PTAB's projected statutory deadline for a final written decision.
3. The **investment** in the parallel proceeding by the court and the parties.
4. The **overlap** between issues raised in the petition and those in the parallel proceeding.
5. Whether the petitioner and the defendant in the parallel proceeding are the **same party**.
6. **Other circumstances** that impact the PTAB's exercise of discretion, **including the merits** of the petition

Fintiv at 6. The Board takes a “holistic view” of whether efficiency and integrity of the system are best served by denying or instituting review. *Id.*

Furthermore, the Director Memo identified a non-exhaustive number of additional factors that may be considered by the Board when evaluating how to apply the Board's discretion under § 314(b) (hereafter, the “Memo Factors”) including (but not limited to):

1. Whether the PTAB or another forum has **already adjudicated** the validity or patentability of the challenged patent claims;
2. Whether there have been **changes in the law** or new judicial precedent issued since issuance of the claims that may affect patentability;
3. The **strength** of the unpatentability challenge (related to *Fintiv* Factor 6, above);
4. The extent of the petition's **reliance on expert testimony**;
5. **Settled expectations** of the parties, such as the length of time the claims have been in force;
6. **Compelling** economic, public health, or national security **interests**; and
7. Any **other considerations** bearing on the Director's discretion.

Director Memo at 2-3. The Board's FAQs further indicate that "[t]he Process Memorandum includes a *non-exhaustive* list of issues that may be raised in discretionary briefing. Parties are encouraged to address *any* fact or circumstance they believe bears on the Director's discretion to institute, including reasons not discussed in current Board precedent or in the Process Memorandum." FAQs at Q.11 (emphasis added).

IV. THE BOARD SHOULD NOT INSTITUTE INTER PARTES REVIEW UNDER § 314(A) BASED ON THE *FINTIV* AND OTHER DISCRETIONARY FACTORS

A. *Fintiv* Factor 1: The District Court Has Already Stated It Will Not Issue a Stay In Similar Circumstances, Which Favors Denial

***Fintiv* Factor 1** favors denial of institution. Patent Owner has not requested a stay in the Second Texas Litigation pending institution of this IPR (or the *six other* co-pending IPR petitions), and even if a stay were requested, the evidence shows that it is unlikely to be granted. Petitioner presents no evidence in its Petition that it has requested a stay or that a stay is likely. When Petitioner presents no evidence that a stay is likely in parallel proceedings, the Board has found *Fintiv* Factor 1 to favor discretionary denial. *See Luxshare Precision Indus. v. Amphenol Corp.*, IPR2022-00132, Paper 10, 9 (P.T.A.B. May 3, 2022).

While six patents have been asserted in the underlying district court case, CosMX only filed its latest IPR petition on the final one of the six patents on April 2, 2025, and that Petition was accorded a filing date via notice on May 5, 2025. *See* IPR2025-00524, Papers 1, 6. At the earliest, the institution decision deadline in that latest IPR petition will be November 5, 2025—which is after the parties will have already provided the Court with a joint claim construction statement and will be in the middle of claim construction discovery, and will be less than four weeks from the deadline to substantially complete document production. Ex. 2002 (Second

Texas Litigation Scheduling Order). The Court in the Eastern District of Texas is on record that it “has a consistent practice of denying motions to stay when the PTAB has yet to institute post-grant proceedings” as to all patents at issue. *Force MOS Tech. Co., Ltd. v. ASUSTeK Comput., Inc.*, Case No. 2:22-cv-000460, ECF. No. 74 (E.D. Tex. April 10, 2024) (citations omitted). The district court will, therefore, not stay the underlying action while no institution decision has been entered in that last (or any other pending) IPR proceeding. Furthermore, CosMX would need to prevail on institution of at least six independent IPR petitions for there to be any chance of a stay in the district court proceeding—an unlikely outcome, particularly where CosMX failed to achieve institution on any of the three IPR petitions it filed against patents at issue in the First Texas Litigation. *See* IPR Nos. 2023-00586; 2023-00587; 2023-00585. Furthermore, because CosMX has failed to attempt to set forth a *prima facie* case of invalidity as to independent claim 20 of the ’910 Patent (as detailed further below), at least one claim from these six patents will necessarily have to proceed to a jury trial even if CosMX were successful on every other argument it has raised in its seven Petitions. The certainty of an eventual district court trial on at least one patent claim weighs against the likelihood of a stay ever entering in the underlying district court proceeding and therefore strongly favors denial. *See, e.g., MyPort, Inc. v. Samsung Elecs. Co., Ltd.*, Case No. 2:22-cv-00114, ECF No. 73 (E.D. Tex. June 13, 2023) (denying request for stay when final written decision in

pending IPRs were scheduled to issue two months after trial, even though the Court had not yet held a Markman hearing, in view of the parties substantial investment in the case and the plaintiff's interest in timely vindication of its patent rights).

B. *Fintiv* Factor 2: Any Final Written Decision Will Occur After the District Court's Scheduled Jury Trial Date, and Decisions in Other IPRs Would Occur Even Later

Fintiv Factor 2 weighs heavily against institution because a trial date is already scheduled to occur in the district court on July 6, 2026, over one month before the August 14, 2026, statutory deadline for the Board to issue a final written decision in this IPR (assuming that the Board issues an institution decision on August 14, 2025, three months after Patent Owner's Preliminary Response). Ex. 2002 (Second Texas Litigation Scheduling Order). The median time to jury trial in patent cases filed before Judge Gilstrap after January 1, 2020 (which includes a number of cases that were delayed as a result of the Covid-19 epidemic, and is therefore a conservative estimate) is just 20.6 months after the filing of the original district court complaint. Ex. 2006 (Docket Navigator Statistics). Applying that median time to trial to the complaint in the underlying district court case here would result in an expected trial date in mid-to-late May 2026, indicating that the currently scheduled district court trial date of July 6, 2026, is both conservative and achievable.

Thus, when considering either the scheduled jury trial date or the district court's median time-to-trial statistics, the seven petitions filed against the six patents asserted in the district court case will not each have final written decisions until at least November 2026 (assuming they are all instituted), four months after the scheduled jury trial in the district court action and six months after the median time-to-trial in cases filed after January 1, 2020.

The Board has denied institution in view of smaller gaps between the final written decisions and trial. *See, e.g., EClinicalWorks, LLC v. Decapolis LLC*, IPR2022-00229, Paper 10, 9 (P.T.A.B. Apr. 13, 2022) (finding this factor weighed in favor of discretionary denial and denying institution where “the beginning of the jury trial in the WDTX Cases is roughly one or two months before any final decision would have been due had *inter partes* review been instituted”); *see also, e.g., Resmed Corp. v. Cleveland Med. Devices Inc.*, IPR2023-00565, Paper 13, 11 (P.T.A.B. Sept. 25, 2023) (finding that a court's trial date scheduled one month prior to the deadline for a final written decisions weighed in favor of denial, and that the Board “take[s] courts' trial schedules at face value absent sufficient evidence to the contrary”).

Accordingly, this factor weighs heavily against institution.

C. *Fintiv* Factor 3: The Parties Have Already Invested Significant Effort and Resources in Parallel District Court Proceedings,

**Including Related Proceedings in the U.S. and Worldwide on
Related Patents and Related Accused Products**

Fintiv Factor 3 weighs heavily against institution. The Second Texas Litigation is only the latest investment of effort and resources by the Parties in a long and continuing series of worldwide litigation involving family members of the '910 Patent and the patents asserted in the district court, as well as many other patents. *See e.g.*, Ex. 2007 (First Texas Litigation Docket), Ex. 2004 (Germany Order 1), Ex. 2005 (Germany Order 2), Ex. 2010 (Press Release), Ex. 2013 (Darts IP Reports). This extensive investment of global resources differs significantly from the more common “one-off” U.S. district court litigation posture and weighs heavily against institution of this IPR. The chance that this single IPR proceeding on a single patent is likely to resolve the parties’ global patent dispute is low, and therefore weighs strongly against institution.

As a result of the First Texas Litigation, the collection of documents and depositions regarding the composition of many CosMX’s accused products was already substantially completed, and so the Parties begin with a *significant* head start on collecting and producing relevant discovery in the Second Texas Litigation. *See* Ex. 2008 (Joint Motion for Entry of Protective Order) at 3 (CosMX arguing that “given the related patents and overlap in technical subject matter and accused products, a substantial amount of the discovery that will need to be conducted in this

case was likely already conducted in the 232 Action.”).⁶ In the First Texas Litigation (addressing similar accused products and similar technologies, as well as many of the same prior art references asserted in this proceeding), the parties and the Court previously invested substantial efforts and resources, including:

- Completing 33 fact witness depositions and 13 expert witness depositions;
- Completing the collection and production of documents regarding the same types of CosMX battery products accused of infringement in the second case;
- Conducting a Markman hearing on August 15, 2023, with an order construing patent claims entered on October 18, 2023 (including the Court’s construction of claim terms “dinitrile compound” and “trinitrile compound” for the related ’363 Patent that are *also* claim terms in the challenged claims of the ’910 Patent);
- Completed expert reports and expert discovery;

⁶ While the Court denied CosMX’s request to not have to re-produce the evidence from the First Texas Litigation, CosMX itself admits that much of the relevant information has already been collected for the First Texas Litigation and simply needs to be reproduced. Ex. 2008 (Joint Motion for Entry of Protective Order) at 3.

- A hearing on various discovery issues and a motion to correct inventorship of the related '363 Patent on October 13, 2023;
- A pretrial conference on January 17, 2024, addressing multiple issues;
- Completing a jury trial in February 2024; and
- Holding a hearing on August 23, 2024, granting ATL's motion for an ongoing royalty.

Ex. 2007 (First Texas Litigation Docket). As a result of the jury's infringement findings with respect to claim 1 of the '363 Patent, CosMX will also be collaterally estopped as to whether certain of its products practice claim elements of the '910 Patent. Ex. 2008 (Joint Motion for Entry of Protective Order) at 2. The extensive investment of party resources in the First Texas Litigation (which involved similar accused products and overlapping prior art references) should also be considered as investments in this follow-on lawsuit, and therefore strongly favors denial of this Petition. The fact that claim terms in the '910 Patent were already construed by the Court as to the related '363 Patent also heavily favors denial.

As to the Second Texas Litigation, by the institution deadline in this IPR, discovery in the district court action will have advanced significantly. Ex. 2002 (Second Texas Litigation Scheduling Order). Patent Owner served its preliminary infringement contentions and discovery materials related to conception and

reduction to practice in accordance with Eastern District of Texas Local Patent Rules on January 7, 2025. Also, by local rule, CosMX served its preliminary invalidity contentions and initial production of technical documents on March 12, 2025.

The parties will have made extensive document productions before the institution deadline in this IPR. To date, Patent Owner has already produced tens of thousands of documents and will continue to make ongoing supplemental productions regarding its hundreds of patent-practicing products. CosMX has likewise committed to producing technical documents for the hundreds of accused products implicated by Patent Owner's infringement contentions. Further, Patent Owner has served third-party subpoenas on twelve of CosMX's customers seeking documents and testimony related to the sales of downstream products incorporating CosMX's accused batteries. The return dates on all third-party subpoenas pre-date the institution deadline in this IPR.

The '910 Patent also has many related counterparts across the world. One of its parent applications, the '363 Patent, was litigated in the First Texas Litigation, Case No. 2:22-CV-232. CosMX was found to be a (willful) infringer in that case, which is now the subject of a Federal Circuit appeal involving the teachings of the Zeng reference at issue in this IPR, which have the potential to be binding on this proceeding as well.

CosMX has already been found to infringe other ATL patents around the world. A European counterpart to the '910 Patent, No. EP3627606, has been asserted against CosMX and is currently being litigated in Germany in Case No. 44 O 11725/22. In Germany, the so-called “first instance” infringement findings in the Munich District Court concluded on March 13, 2024, finding infringement on all counts by CosMX. Ex. 2010 (Press Release). CosMX has appealed these findings to the Munich Higher Regional Court, which is ongoing.

In Germany, the Zeng, Matsuoka, and Kim references (among others) were also asserted by CosMX to invalidate European counterpart patent EP3627606 in two separate German nullity proceedings, in Case Nos. 3 Ni. 12/23 (EP) and 3 Ni. 12/24 (EP),⁷ the status of which is summarized below:

German nullity proceeding 3 Ni. 12/23 (EP):

- Complaint filed by CosMX on May 2, 2023
- Reasons for Opposition filed by ATL on August 3, 2023

⁷ CosMX asserted Zeng (identified as “NK5”) in the first German nullity proceeding, Kim (identified as “NK7”) in both the first and second German nullity proceedings, and Matsuoka (identified as “NK9”) in the second German nullity proceeding. Ex. 2004 (German Order 1); Ex. 2005 (Germany Order 2).

- Preliminary Opinion issued by German Federal Patent Court on October 25, 2023 (Ex. 2004): preliminary finding that the EP3627606 patent as granted remains valid in view of Zeng, Kim, and other challenges.
- Oral Proceedings scheduled for July 15, 2025

German nullity proceeding 3 Ni. 12/24 (EP):

- Complaint filed by CosMX on July 5, 2024
- Reasons for Opposition filed by ATL on November 22, 2024
- Preliminary Opinion issued by German Federal Patent Court on February 19, 2025 (Ex. 2005): preliminary finding that the patent as granted remains valid in view of Matsuoka, Kim, and other challenges.
- Oral Proceedings scheduled for July 15, 2025 (combined with first nullity proceeding)

A final decision by the German court, addressing the teachings of Zeng and what a person of skill would understand regarding its teachings, will therefore likely be entered before any institution decision in this proceeding.

In both of the German nullity proceedings, the German courts have issued preliminary opinions indicating that Zeng does *not* invalidate the European counterpart to the '910 Patent and that CosMX's interpretation of the weight percentages claimed in the counterpart's claims are wrong. Ex. 2004 at 2-4; Ex. 2005

at 3. While, of course, differences in claim language and national laws do not make those findings binding in the U.S., the Director can take comfort when denying this Petition in the fact that German factfinders have rejected CosMX's erroneous interpretation of the facts of what Zeng teaches, which errors they repeat in this Petition.

Other cases between the parties involving Chinese patent infringement and validity proceedings are ongoing or have completed with respect to Chinese Patent Nos. CN104466097B (resulting in a finding of infringement and a temporary injunction against CosMX, with the validity of ATL's patent maintained), CN206490141U (resulting in an initial finding of infringement by CosMX and now awaiting the results of an appeal ("second-instance")), CN108352492B (same), CN109301326B (resulting in CosMX withdrawing its invalidity request), and several others. *See, e.g.*, Ex. 2013 (Darts IP Reports), *see also*, Ex. 2010 (Press Release). CosMX is therefore an adjudicated and continuing infringer of ATL's valid patents in China as well.

The Federal Circuit is also currently considering a challenge to the district court's invalidity finding in the First Texas Litigation with respect to the related '363 Patent in view of Zeng and other prior references, with briefing due to be completed by June 3, 2025. Ex. 2011 (Fed. Cir. General Docket). The Federal Circuit's decision in that appeal has the potential to be dispositive as to whether the experimentation

required to arrive at the claimed ratios in the '363 Patent, in view of the teachings of Zeng, is “undue.” If the Federal Circuit finds that Zeng’s teachings do not enable a POSITA to practice the (broader) claim limitations of the '363 Patent without undue experimentation or was not proven to be a “printed publication” under 35 U.S.C. § 102(b), the duplicative work conducted by the Board in this Petition would be wasted.

The extensive investment of party resources in U.S. and foreign proceedings is just further evidence that deciding this one IPR petition on the merits will not solve the global patent dispute between ATL and CosMX.

D. *Fintiv* Factor 4: The Overlap Between the Asserted Art and Petitioner’s Invalidation Arguments in the District Court is Significant, and Petitioner’s *Sotera* Stipulation Is Ineffective Because of Its System Art Combinations With The Prior Art in this Petition

Fintiv Factor 4 also weighs heavily against institution because Petitioner also asserts every prior art reference relied on in this Petition (Zeng, Zhou, Matsuoka, Kim (identified as “Kim ’268”), Sunose, and Su) in the Second Texas Litigation. Ex. 2003 (Invalidity Contentions Cover Pleading). Furthermore, Petitioner’s Invalidation Contentions in the Eastern District of Texas also raise obviousness grounds combining various unpublished system art references (which it cannot raise in this IPR proceeding) with at least each of Zeng, Zhou, Matsuoka, Sunose, and Su (each of which is raised in the instant Petition). *Id.*

Ex. No.	Ground
910-01	Zeng
910-02	Zeng, Zhou
910-03	Zeng, Sunose, Su
910-04	Zeng, Matsuoka
910-05	Zeng, Matsuoka, Kim '268
910-06	Zhou, Zeng
910-07	Zhou, Sunose, Su
910-08	Zhou, Kim '268
910-09	Choi
910-10	Choi, Sunose, Su
910-11	Choi, Matsuoka
910-12	Choi, Matsuoka, Kim '268
910-13	Yamamoto
910-14	Yamamoto, Zhou
910-15	Yamamoto, Zeng

Ex. No.	Ground
910-16	Yamamoto, Sunose, Su
910-17	Yamamoto, Matsuoka
910-18	Yamamoto, Matsuoka, Kim '268
910-19	Zeng, Mochizuki
910-20	Zeng, Mochizuki, Kim '268
910-21	Choi, Mochizuki, Matsuoka
910-22	Choi, Mochizuki, Matsuoka, Kim '268
910-23	Yamamoto, Mochizuki, Matsuoka
910-24	Yamamoto, Mochizuki, Matsuoka, Kim '268
910-25	Kim '268, Yi, Yang
910-26	Kim '268, Yi, Yan, Zeng, Yamamoto
910-27	Kim '268, Sunose, Su
910-28	DP018, Zeng, Zhou, Choi, Sunose, Su, Yamamoto
910-29	DP030, Matsuoka, Zhou, Choi, Sunose, Su, Yamamoto
910-30	DP039, Zhou, Choi, Sunose, Su, Yamamoto
910-31	CF41/CF42, Matsuoka, Sunose, Su, Yamamoto
910-32	CHP16/CHP17/CHP18, Matsuoka, Zhou, Choi, Sunose, Su, Yamamoto
910-33	CL444, Matsuoka, Zhou, Choi, Sunose, Su, Yamamoto
910-34	CL471, Matsuoka, Zhou, Choi, Sunose, Su, Yamamoto
910-35	CL470, Matsuoka, Zhou, Choi, Sunose, Su, Yamamoto
910-36	Samsung EB-BG965ABA, Matsuoka, Zeng, Zhou, Choi, Sunose, Su, Yamamoto
910-37	Samsung EB-BG965ABE Zeng, Zhou, Choi, Sunose, Su, Yamamoto

Id. (raising, as invalidity grounds 910-28 through 910-37, obviousness combinations of Zeng, Zhou, Matsuoka, Sunose, and Su with unpublished system prior art references DP018, DP030, DP039, CF41/CF42, CHP16/CHP17/CHP18, CL444, CL470, CL471, Samsung EB-BG969ABA, and Samsung EB-BG969ABE, as well

as various obviousness combinations with Kim with alleged prior art references not raised here in invalidity grounds 910-12, 910-18, 910-20, 910-22, 910-24, 910-25, and 910-26).

Accordingly, even with the limited *Sotera* stipulation proffered by Petitioner, CosMX would still claim to retain the ability to discuss at the jury trial every single one of the prior art references discussed in this Petition *in combination* with unpublished system prior art that they have identified.

As the Acting Director recognized in a recent Order Granting Director Review, such stipulations do not ensure that these IPR proceedings would be a “true alternative” to the district court proceeding where unpublished system prior art is asserted in combination with the art used in the IPR’s grounds. *Motorola Sol’ns, Inc. v. Stellar LLC*, IPR2024-01205, Paper 19 (Order Granting Director Review, Vacating the Decision Granting Institution, and Denying Institution of *Inter Partes* Review) at 3-4 (P.T.A.B. Mar. 28, 2025) (Stewart, A.D.) (finding that a *Sotera* stipulation was unlikely to moot petitioner’s combination of IPR art with unpublished system prior art in district court proceedings, and therefore could not outweigh other factors favoring denial); *see also* FAQs at Q.14 (“ . . . The Director will take into account whether the stipulation materially reduces overlap between the proceedings. Where the petitioner is relying on corresponding system art in a co-pending proceeding and/or several other invalidity theories, a stipulation may not be

particularly meaningful because the efficiency gained by any AIA proceeding will be limited.”).

Because there is substantial overlap between the art raised in these proceedings and asserted in the underlying district court proceedings, and because inefficiencies created by multiple validity proceedings is not materially diminished by Petitioner’s *Sotera* stipulation in view of Petitioner’s combination of the prior art used in this Petition with unpublished system art in the district court proceeding, this factor heavily favors denial.

E. *Fintiv* Factor 5: The Identity of the Parties Weighs Against Institution

Fintiv Factor 5 also weighs against institution because the Petitioner is the accused infringer and defendant, while Patent Owner is the plaintiff, in the underlying Second Texas Litigation. Ex. 2001 (Second Amended Complaint).

F. *Fintiv* Factor 6 and Memo Factor 3: The Merits of the Petition Are Weak

Fintiv Factor 6 and Memo Factor 3 weigh against institution because the merits of the Petition are weak. While the merits are more fully addressed in Patent Owner’s Preliminary Response (which is incorporated herein by reference pursuant to FAQ Q.25), a few examples are provided below to illustrate the weakness of Petitioner’s arguments. These examples apply to all the grounds asserted in the Petition. These failures are not meant to be exhaustive but simply illustrative.

None of the prior art references upon which Petitioner relies discloses or renders obvious the claimed weight percentage value of propyl propionate (Z) based on a total weight of the electrolyte, and no reference apprehends the importance of the Y/Z ratio. Challenged Claims 1 and 12 of the '910 Patent require, *inter alia*, an electrolyte comprising a dinitrile compound, a trinitrile compound, and propyl propionate, wherein, based on a total weight of the electrolyte, a weight percentage of the dinitrile compound is X, a weight percentage of the trinitrile compound is Y, a weight percentage of the propyl propionate is Z, and wherein, about $0.1 \leq (X/Y) \leq \text{about } 2.3$, $5 \text{ wt } \% \leq Z \leq 20 \text{ wt } \% \text{ or } 30 \text{ wt } \% \leq Z \leq 50 \text{ wt } \%$, and about $0.02 \leq (Y/Z) \leq 0.3$. Ex. 1001, claims 1 and 12. Additionally, challenged claim 20 of the '910 Patent requires, *inter alia*, an electrolyte comprising a dinitrile compound, a trinitrile compound, and propyl propionate, wherein, based on a total weight of the electrolyte, a weight percentage of the trinitrile compound is Y, a weight percentage of the propyl propionate is Z, and wherein, $5 \text{ wt } \% \leq Z \leq 20 \text{ wt } \% \text{ or } 30 \text{ wt } \% \leq Z \leq 50 \text{ wt } \%$, and about $0.01 \leq (Y/Z) \leq 0.3$. Ex. 1001, claim 20. Petitioner's grounds fail for at least the following additional reasons.

First, as discussed *infra* at Section IV.L. regarding Memo Factor 7, the Petition fails to even attempt to set forth a *prima facie* ground for claim element [20.7] of independent claim 20 which is fatal to its analysis of claims 20-26 in each of Grounds 1A-1C and 4A-4C.

Second, Petitioner relies on Zeng as the primary reference for the limitations relevant to the electrolyte in each of Grounds 1A-1C, 2A-2C, and 3A-3C. Pet. 14-55. Zeng never discloses the weight percentage of propyl propionate (Z) used in its electrolyte solutions based on a total weight of the electrolyte or the critical claimed ratio of the weight percentages of trinitrile to such weight percentage of propyl propionate (Y/Z). In view of these clear shortcomings of Zeng, Petitioner's expert, Dr. Lucht, makes a series of unsupported and incorrect assumptions to purportedly calculate a "*theoretical* upper limit weight percentage" of propyl propionate based on the total weight of the electrolyte, and in turn, an alleged (but never disclosed) Y/Z ratio based on his estimated Z value from the embodiment descriptions. Ex. 1003 ¶¶ 65-78, *see, e.g.*, ¶ 76 ("*Assuming zero weight LiPF₆*, PP would have a theoretical upper limit weight percentage in the total electrolyte of $88.3\% \times (20 / (25 + 10 + 30 + 5 + 10 + 20)) = 17.66\%$ in Embodiment 4. Similarly, in Embodiment 6, PP would have an upper limit weight percentage of $88.5\% \times (20 / (25 + 10 + 30 + 5 + 10 + 20)) = 17.70\%$." (emphasis added). Dr. Lucht effectively tries to contort and redefine the description of the embodiments of Zeng so as to require that the lithium salt is added to the electrolyte in *solid* form (Ex. 1003, n. 4.), which is diametrically opposed to and necessarily contradicts the literal text set forth in Zeng. *See also*, Ex. 2004, 3-4 (when faced with Zeng ("NK5") in German nullity proceeding, German Federal Patent Court likewise found that it was

being interpreted incorrectly by CosMX). Zeng expressly states that a solution of LiPF_6 (which already has a concentration of 1.0 mol/L) is slowly added to the base solvent mixture in each embodiment such that the weight percentage of propyl propionate and the ratio of weight percentages of trinitrile to propyl propionate in the final electrolyte solutions cannot be determined due to at least the unknown solvent components in the lithium salt solution and the unknown amount of lithium salt solution. Ex. 1006 ¶ [0037] (“lithium hexafluorophosphate of a concentration of 1.0 mol/L is slowly added to the mixed solution”). Indeed, other filings by the same applicant and two common inventors will demonstrate that when they intended to add lithium salt in *solid* form they specifically indicated mixing the solvents in proportion and dissolving the lithium salt in the solvent mixture, such that the concentration of the lithium salt in the organic solvent is 1.0 mol/L.

At bottom, without knowing the amount of lithium salt added to the solution in Zeng, it is impossible to determine the weight percentage of propyl propionate based on a total weight of the electrolyte or the ratio of trinitrile compound to propyl propionate in the final electrolyte solution embodiments.

Additionally, with respect to claims 1 and 12 and dependent claims thereto, Petitioner admits that the alleged X/Y ratio in Zeng is expressly greater than 2.3, but has elected not to construe the meaning of “about”. Pet. at pp. 11 (“No claim terms require express construction for purposes of granting the Petition”), 23 (“In both

Embodiments, X/Y equals 2.5 which is ‘about 2.3’ as claimed.’). Failing to construe the term “about” is fatal to Petitioner’s analysis.

Third, Petitioner’s reliance on Matsuoka in Grounds 1B, 1C, 2B, 2C, 3B, and 3C to purportedly cure Zeng’s failures noted above also fails because Petitioner’s expert continues to make multiple unsupported and unjustified assumptions. The foundation for all of Petitioner’s arguments with respect to Matsuoka is based on Dr. Lucht’s flawed assumption that a POSITA would somehow apply Matsuoka’s preferred “non-nitrile additive” ranges to *only* propyl propionate (*see e.g.*, Ex. 1003 ¶¶ 147-161), without (1) addressing why the POSITA would single out a propyl propionate compound from 75+ other potential “non-nitrile additive” components and without (2) considering the implications of the overlapping components of Zeng’s electrolyte that would also be considered “non-nitrile additive” components. Compare Ex. 1006 ¶¶ [0037], [0045]-[0049] (setting forth example listing various electrolyte components) *with* Ex. 1007 ¶¶ [0038]-[0040] (listing numerous non-nitrile additives).

Fourth, Petitioner’s reliance on Kim in Grounds 1C, 2C, and 3C to purportedly cure Zeng’s failures noted above and in Grounds 4C, 5C, and 6C to purportedly cure Zhou’s failures noted below also fails because as Patent Owner’s Preliminary Response addresses, Kim is replete with internally contradicting data, statistical uncertainty, and woefully inadequate experimental procedure details from

which a POSITA could draw any conclusions. *See e.g.*, Ex. 1008 (notable discrepancies between capacity retention values of Table 4 and FIG. 7, as well as missing key information for assessing the cycling performance of Kim's batteries). Moreover, Petitioner never makes a motivation to combine argument *at all* and never evaluates the POSITA's reasonable expectation of success and, thus fails to make out a *prima facie* case of obviousness to combine Kim with the other references. Pet. 49-55. Petitioner's failure to provide such an argument is fatal to all grounds depending on Kim.

Fifth, Petitioner relies on Zhou as the primary reference for the limitations relevant to the electrolyte in each of Grounds 4A, 4C, 5A, 5C, 6A, and 6C. Pet. 55-73. In a clear misunderstanding of the kinetic performance data depicted by the AC impedance spectra in FIG. 4 of Zhou (reproduced below), Dr. Lucht wrongly judged that Example 8 outperformed all of the other example batteries depicted in FIG. 4 because it is positioned at the top of the figure. Pet. 59 (citing Ex. 1003 ¶ 191).

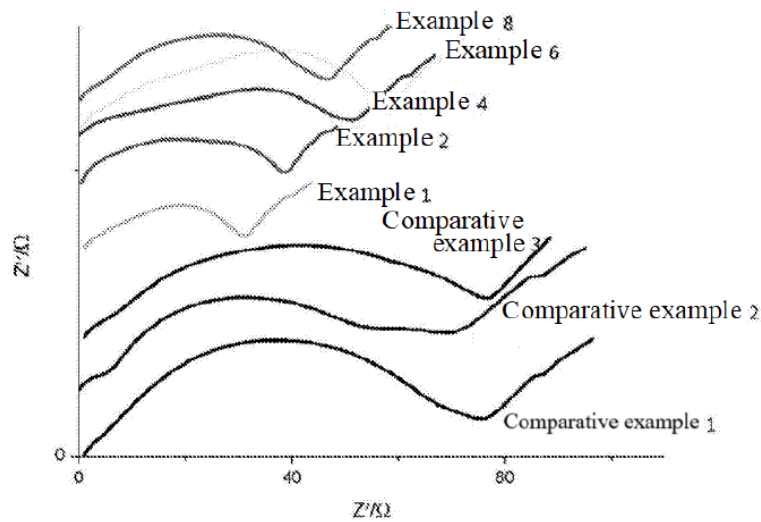


FIG. 4

Ex. 1014, FIG. 4.

However, as Patent Owner’s Preliminary Response addresses, the vertical placement of each spectrum is meaningless, and rather it is the horizontal position of the elbow or sharp dip of the spectrum that matters, as Zhou explains, with the elbow or sharp dip located further to the left being preferable as it indicates lower “real” impedance for the electrode interface. Ex. 1014 ¶ [0058]. Moreover, Dr. Lucht relies on numerous improper assumptions with respect to his analysis of Example 8. Additionally, Dr. Lucht’s flawed assumptions that a POSITA would not only substitute propyl propionate for ethyl acetate in Example 8 of Zhou but would also obtain predictable results without considering the differences between such components, including relative viscosities, molecule sizes, molar mass, etc., further underscore the weakness of the technical merits of the Petition.

These example defects demonstrate substantial weakness in Petitioner’s unpatentability challenges. Additional details as to the merits are presented in Patent Owner’s Preliminary Response and accompanying expert declaration.

G. Memo Factor 1: The PTAB Has Already Considered CosMX’s Petition Against the Broader ’363 Patent’s Claims to Lack Merit

Memo Factor 1 asks “whether the PTAB or another forum has already adjudicated the validity or patentability of the challenged patent claims.” While the ’910 Patent has not itself been previously adjudicated, it is related to the ’363 Patent (which has a broader set of independent claims). Ex. 2012 (the ’363 Patent). The Board previously rejected an IPR petition by CosMX with respect to the ’363 Patent. *See Zhuhai CosMX Battery Co., Ltd. v. Ningde Ampere Tech. Ltd.*, IPR2023-00586, Paper 14 (P.T.A.B. Aug. 18, 2023). In its Decision Denying Institution of *Inter Partes* Review, the Board found that CosMX failed to establish a reasonable likelihood of prevailing on its challenges to the claims of the ’363 Patent. *Id.* at 9-19. Independent claim 1 of the ’363 Patent is broader than the independent claims of the ’910 Patent, as indicated below (with narrowing differences between the claims bolded):

’363 Patent, claim 1 limitations (<i>out of sequence for ease of comparison</i>)	’910 Patent, claim 1 limitations (<i>out of sequence for ease of comparison</i>)
1. An electrolyte, comprising a dinitrile compound, a trinitrile compound, and	1. An electrolyte, comprising a dinitrile compound, a trinitrile compound, and

<p>propyl propionate, wherein, based on a total weight of the electrolyte, a weight percentage of the dinitrile compound is X and a weight percentage of the trinitrile compound is Y, where X and Y meet conditions represented by Formula (1) and Formula (2) [and wherein, based on the total weight of the electrolyte, a weight percentage of the propyl propionate is Z, where Y and Z meet a condition represented by Formula (3)]:</p>	<p>propyl propionate, wherein, based on a total weight of the electrolyte, a weight percentage of the dinitrile compound is X, a weight percentage of the trinitrile compound is Y and a weight percentage of the propyl propionate is Z; wherein,</p>
<p>about 2 wt % < (X+Y) < about 11 wt% [Formula] (1); and</p>	<p>about 2.2 wt % ≤ (X+Y) ≤ about 8 wt %,</p>
<p>about 0.1 < (X/Y) < about 8 [Formula] (2); and</p>	<p>about 0.1 ≤ (X/Y) ≤ about 2.3,</p>
	<p>5 wt % ≤ Z ≤ 20 wt % or 30 wt % ≤ Z ≤ 50 wt %, and</p>
<p>about 0.01 < (Y/Z) < about 0.3 [Formula] (3).</p>	<p>about 0.02 ≤ (Y/Z) ≤ about 0.3;</p>

	wherein the dinitrile compound is one or more compounds selected from the group consisting of butanedinitrile, adiponitrile, ethylene glycol bis(2-cyanoethyl) ether, and 1,4-dicyano-2-butene; and the trinitrile compound is one or more compounds selected from the group consisting of 1,3,6-hexanetricarbonitrile , 1,2,6-hexanetricarbonitrile and 1,2,3-tris(2-cyanoethoxy)propane;
	wherein the electrolyte further comprises a compound having a sulfur-oxygen double bond.

CosMX therefore was able to use the Board’s denial of institution (on the merits) in the ’363 Patent IPR as a “roadmap” to attempt to secure institution in this follow-on Petition and avoid making the same fundamental assumption errors they made with respect to the ’363 Patent Petition’s assertion of the Hong reference. *See* Corrected Petition, Paper 3, at 10. This style of serial attacking of related patents using new

grounds in later petitions favors denial of institution either (1) under *General Plastics* or (2) under the Director’s discretion to discourage such “roadmapping” behavior. *See Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19, 16-18 (P.T.A.B. Sept. 6, 2017) (precedential as to § II.B.4.i)) (Factor 3 of *General Plastic* is “directed to Petitioner’s potential benefit from receiving and having the opportunity to study Patent Owner’s Preliminary Response, as well as our institution decisions on the first-filed petitions, prior to its filing of follow-on petitions. . . . The absence of any restrictions on follow-on petitions would allow petitioners the opportunity to strategically stage their prior art and arguments in multiple petitions, using our decisions as a roadmap, until a ground is found that results in the grant of review. ***All other factors aside, this is unfair to patent owners and is an inefficient use of the inter partes review process and other post-grant review processes.***”) (emphasis added).

Like the petitioner who was denied institution in *Videndum Prod. Sols., Inc. v. Rotolight Ltd.*, IPR2023-01219, Paper 9 (P.T.A.B. Jan. 24, 2024), “Here, Petitioner was able to use the Board’s decision denying institution in the [’363 Patent] IPR to learn that the art and arguments asserted in the first petition were insufficient for institution, which led Petitioner to find a different ground that would ‘result[] in the grant of review.’” This should be discouraged, and warrants denial.

In addition, while the '910 Patent has not been previously adjudicated, it is currently at issue in the Second Texas Litigation and will very likely have been adjudicated by the time a final written decision is expected to issue. Ex. 2002 (Second Texas Litigation Scheduling Order). Thus, this factor favors discretionary denial.

H. Memo Factor 2: No Material Changes In The Law Since The Claims Were Allowed By The Examiner Favors Denial.

Memo Factor 2 favors denial of institution because there have been no material changes in the law since the Examiner evaluated the challenged claims and ordered their allowance after finding them patentable in August 2023. Ex. 1002 at 23-31. This lack of a change in the law favors denial, or is (at most) neutral. And, since both Zeng and Zhou were disclosed to the Examiner in an IDS (as were Su and Kim), this factor strongly favors denial because Petitioner fails to identify any material error by the Examiner, other than a brief (but unsupported) allegation that a material error *must* exist on page 74 of the Corrected Petition. Pet. 74 (“Alternatively, the Office materially erred allowing the claims over omitted disclosures of Zeng and Zhou.”).

“[I]f . . . the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.” *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper

6, 8–9 (P.T.A.B. Feb. 13, 2020). This is similar to the burden in district court litigation where a challenger relying on previously considered references “has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.” *Ultra-Tex Surfaces Inc. v. Hill Brothers Chem. Co.*, 204 F.3d 1360, 1367 (Fed. Cir. 2000) (citation omitted).

There is no reason to assume the Examiner did not consider Zeng or Zhou, as each of them were initialed as considered. *See e.g.*, Ex. 1002 at 15. As of the relevant dates of the allowance of the '910 Patent claims, patent examiners had access to the new and advanced Patents End To End (“PE2E”) tool that allows them to access “full machine translations in English” of 69 million foreign patent documents (such as Zeng, Zhou, and Su). *See* Ex. 2014 (PE2E Announcement). This means the reasoning in the *Osteomed* and *Sci. Design Co.* decisions cited by Petitioner, each of which dealt with examiners who did not yet have access to the Office’s new PE2E system with full machine translation capabilities of foreign patents when presented with foreign patents in an IDS, are not applicable here. The Board should not revisit and second-guess the Examiner’s decisions on patent allowability less than two years after the claims’ issuance, because the Examiner can be safely assumed to have

done their job, and Petitioner fails to identify any actual material error. Accordingly, this factor strongly favors denial of institution.

I. Memo Factor 4: Heavy Reliance on Expert Testimony, Including to Fill Gaps in the Prior Art’s Teachings, Favors Denial

Memo Factor 4 relates to the “extent of the petition’s reliance on expert testimony.” The FAQs further explain:

While the Board may consider expert testimony, as a matter of efficiency, extensive reliance on expert testimony and/or reasonable disputes between experts on dispositive issues may suggest that the questions are better resolved in an Article III court. The statute and our reviewing court require that petitions be based on prior art patents and printed publications. As the judges have technical and legal expertise, it is not necessary for an expert to explain every aspect of the prior art. It is most helpful if an expert is providing focused testimony, for example to provide helpful context or to explain terms of art. The failure to provide focused expert testimony may weigh against institution.

FAQs at Q.21.

This factor favors denial because, as explained above with respect to *Fintiv* Factor 6 and Memo Factor 3, Petitioner relies heavily on expert argument,

assumptions, and inferences to fill in the gaps of the prior art and allegedly arrive at the claimed weight percentage of propyl propionate (Z) based on the total weight of the electrolyte and in turn, the claimed Y/Z ratio range, that are not plain on the face. *See, e.g.*, Pet. at 15-16, n. 3 (relying on expert testimony to conclude that the examples of Zeng add “(*solid*) LiPF₆ to the specified EC:PC:DEC:FB:EP:PP solvent mixture to reach a concentration of 1.0 mol/L LiPF₆”) (emphasis added), citing Ex. 1003 ¶ 69. Petitioner also relies on cursory (but lengthy) expert testimony for every cited claim limitation and every ground, addressing at least five different grounds for each challenged claim, rather than providing a focused expert declaration addressing the limitations for which expert testimony is necessary. Ex. 1003 ¶¶ 65-242. Patent Owner, in its Preliminary Response, presents competing expert testimony explaining why Petitioner’s arguments, assumptions, and inferences are necessarily incorrect and do not meet the claim limitations. Because of the extensiveness of the expert testimony and the Petition’s reliance on that testimony to establish at least the claimed weight percentage of propyl propionate based on the total weight of the electrolyte and in turn, the claimed ratio range of the weight percentage of a trinitrile compound to such weight percentage of propyl propionate (Y/Z), and because Patent Owner’s own expert provides testimony that the prior art does not disclose or render obvious the claimed weight percentage of propyl propionate (Z) or the claimed Y/Z ratio range, this dispute is better suited to

resolution in an Article III district court, and this factor favors denial of institution. FAQs at Q.21.

J. Memo Factor 5: Settled Expectations are Neutral

Memo Factor 5 is directed to the “settled expectations of the parties, such as the length of time the claims have been in force.” These patent claims issued in late 2023, and accordingly this factor is neutral. Ex. 1001.

K. Memo Factor 6: Compelling Interests are Neutral

Memo Factor 6 is directed to “[c]ompelling economic, public health, or national security interests.” While ATL (which is a subsidiary of Japanese company TDK) provides a large percentage of the lithium-ion batteries used in smartphones, portable computers, and other portable electronics in the United States, and has an interest in protecting its U.S.-granted intellectual property from an adjudicated infringer (CosMX), this factor is neutral.

L. Memo Factor 7: Other Factors Favor Denial of Institution

Memo Factor 7 is directed to any other factors the Director should consider when evaluating whether to apply discretionary denial. This last factor also favors denial.

First, the numeracy of the Grounds raised by Petitioner in this Petition strongly weighs in favor of denial. The Petition asserts at least *18 different grounds*, with at least 5 grounds raised for every challenged claim. Pet. 12-13 (table

summarizing Grounds 1A, 1B, 1C, 4A, and 4C with respect to Challenged Claims 1-6, 12, 16-26, Grounds 2A, 2B, 2C, 5A, and 5C with respect to Challenged Claims 13 and 14, and Grounds 3A, 3B, 3C, 6A, and 6C with respect to Challenged Claim 15).⁸ The Board should not institute a Petition that would require the Board to review so many Grounds, including numerous Grounds that are facially deficient. *See e.g., Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20, 17–18 (P.T.A.B. Mar. 6, 2019) (designated informative) (internal quotations and citations omitted) (“For example, where a petition contains voluminous or excessive grounds, Office guidance indicates the panel will evaluate the challenges and determine whether, in the interests of efficient administration of the Office and integrity of the patent system (*see* 35 USC § 316(b)), the entire petition should be denied under 35 USC § 314(a).”).

Moreover, even if CosMX were completely successful on every other ground, the present Petition fails to even attempt to set forth a *prima facie* ground for claim

⁸ Notably, at least Grounds 1C, 2C, and 3C appear to consider Matsuoka to be optionally included such that each of Grounds 1C, 2C, and 3C constitute two grounds for a total of at least *eighteen* grounds. *See* Pet. at 12-13 (each of Grounds 2C and 3C identifying “Zeng/Kim; Zeng/Matsuoka/Kim”), 50 (“Zeng or Zeng/Matsuoka” with respect to Ground 1C).

element 20.7 of independent claim 20. Independent Claim 20 recites, *inter alia*, “wherein the electrolyte further comprises 1,3-propanesultone and **fluoroethylene carbonate**; wherein, based on the total weight of the electrolyte, a weight percentage of the 1,3-propanesultone is not less than 0.1 wt %, and not greater than 3 wt % ” Ex. 1001, 37:3-7 (emphasis added). Petitioner collectively refers to these limitations as claim element [20.7]. None of the other Challenged Claims recite “fluoroethylene carbonate”. Although the Petition includes a summary table of “additional reasons” for why Zeng allegedly “discloses or suggests claims 12 and 16-26,” claim 20 and each of its claim elements are notably absent from Petitioner’s table. Pet., p. 29-30. The Petition also includes a summary table of “additional reasons” for why Zhou allegedly “discloses or suggests claims 12 and 16-26,” however, with respect to element [20.7], the cited “reasoning” fails to address the claimed “fluoroethylene carbonate” of element [20.7]. Pet. 68-69 (referring to prior sections addressing claim elements [1.7] and [3.1], which do not recite “fluoroethylene carbonate”). Therefore, if this Petition were instituted, the Board would be required to address all 18 grounds, but still would not invalidate claim 20 of the ’910 patent which would mean that a district court trial would still have to proceed regarding the infringement and validity of claim 20 of the ’910 Patent and there would be no stay before *all six patents* were tried in the district court. The significant investment of effort by the Board only for its seven final written decisions to issue *after* a jury trial addressing the validity of

all six patents is exactly the kind of wasted effort the Director's Memo counsels avoiding to maximize the efficient use of the Board's limited resources and minimize waste of taxpayer dollars.

Likewise, given that Petitioner asserts at least 18 different grounds herein (asserting at least 5 grounds per claim) that all lack merit, where at least six grounds are fatally flawed based on a failure to set forth a *prima facie* ground for claim element [20.7] of independent claim 20 (and, as a result, dependent claims 21-26), it would not be an efficient use of resources for the Board to institute in this case. *See, e.g., Chevron Oronite Co. v. Infieum USA LP*, IPR2018-00923, Paper 9, 9-11 (P.T.A.B. Nov. 7, 2018) (designated informative) (denying institution on all claims under §314(a) when petitioner's arguments and proofs were deficient with respect to a subset of claims); *Deeper, UAB v. Vexilar, Inc.*, IPR2018-01310, Paper 7, 41-43 (P.T.A.B. Jan. 24, 2019) (designated informative) (when petitioner only establishes a reasonable likelihood of prevailing with respect to some challenge claims, instituting a trial as to all challenged claims is not an efficient use of the Board's resources).

Second, when evaluating whether a Petition is based on matters “previously presented” to the Office, the Board (“the Board”) uses the following two-part framework:

1. determining whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
2. if either condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

See Advanced Bionics, Paper 6 at 7 (precedential). In making this determination the Board considers several non-exclusive factors, outlined in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (P.T.A.B. Dec. 15, 2017) (precedential as to § III.C.5, first paragraph). Under the Board's precedent under *Advanced Bionics*, the Petition should be denied.

Petitioner admits that at least Zeng, Zhou, Su, and Kim—which includes the two primary prior art references it relies on—were each already presented to the Office in an IDS during prosecution of the '910 Patent and therefore considered by the Examiner. Pet. at 10, 73-74; Ex. 1002 at 15-16, 38, 83, 306-307, 383-384. Petitioner argues that because only English abstracts were provided for Zeng, Zhou, and Su the Examiner—who had complete access to a full array of machine translation services—should be presumed not to have done their job. Pet. at 10, 73-

74; Ex. 2014. Under the Board's precedent under *Advanced Bionics*, however, the Petition should be denied.

“[P]reviously presented art includes art made of record . . . such as on an [IDS].” *See, e.g., Biocon Pharma Ltd. v. Novartis Pharms. Corp.*, IPR2020-01263, Paper 12, 49 (P.T.A.B. Feb. 16, 2021) (citing *Advanced Bionics*, Paper at 7-8); *see also Philip Morris Prods., S.A. v. Rai Strategic Holdings, Inc.*, IPR2020-00921, Paper 9, 11 (P.T.A.B. Nov. 16, 2020); *Mylan Pharms. Inc. v. Merck Sharp & Dohme Corp.*, IPR2020-00040, Paper 21, 14-15 (P.T.A.B. May 12, 2020).

“[I]f . . . the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.” *Advanced Bionics*, Paper 6 at 8–9. This is similar to district court litigation where a challenger relying on previously considered references “has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.” *Ultra-Tex Surfaces*, 204 F.3d at 1367 (citation omitted). Here, Petitioner failed to make any showing of material error, and the Director should decline to institute review.

V. CONCLUSION

Taken together, the *Fintiv* factors and Memo factors weigh strongly in favor of discretionary denial—all factors either favor denial or are neutral:

Factor	Outcome
<i>Fintiv</i> 1: Stay	No stay; favors denying institution
<i>Fintiv</i> 2: Proximity of Trial Date	Before FWD; favors denying institution
<i>Fintiv</i> 3: Investment in District Court	Extensive; favors denying institution
<i>Fintiv</i> 4: Overlap in Issues	Significant; favors denying institution
<i>Fintiv</i> 5: Same Parties	Same parties; favors denying institution
<i>Fintiv</i> 6 /Memo 3: Strength of the Merits	Weak; favors denying institution
Memo 1: Already Adjudicated	Broader related patent has; favors denying institution
Memo 2: Changes in the Law	None; favors denying institution
Memo 4: Reliance on Expert Testimony	Extensive; favors denying institution
Memo 5: Settled Expectations	Neutral
Memo 6: Compelling Interests	Neutral
Memo 7: Any other Considerations	Favors denying institution

For the reasons noted above, Patent Owner respectfully submits that the Board should deny institution of all Grounds of the Petition.

Dated: May 14, 2025

Respectfully submitted,

By: / Christopher TL Douglas /
Christopher TL Douglas, Reg. No. 56,950

CERTIFICATION UNDER 37 C.F.R. §42.24

Pursuant to 37 C.F.R. §42.24(d), I certify that this brief complies with the type-volume limits of 37 C.F.R. §42.24 and the Director Memo because it contains 12,082 words, according to the word-processing system used to prepare this brief, excluding the parts that are exempted by 37 C.F.R. §42.24 (including the table of contents, a table of authorities, mandatory notices under §42.8, a certificate of service or this certificate word count, and appendix of exhibits or claim listing).

Dated: May 14, 2025

By: / Christopher TL Douglas / _____
Christopher TL Douglas

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), the undersigned hereby certifies that true and correct copies of the foregoing **PATENT OWNER'S DISCRETIONARY DENIAL BRIEF and NINGDE AMPEREX TECH. EXHIBITS 2001-2014** were served in its entirety on May 14, 2025, by filing this document through the PTAB's P-TACTS Filing System as well as delivering a true and correct copy by electronic mail on Petitioner's lead and backup counsel at the following email addresses (as agreed by counsel for Petitioner):

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