

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

IPR2025-00524
Patent 12,015,118

**REQUEST FOR DIRECTOR REVIEW OF DECISION GRANTING
INSTITUTION OF *INTER PARTES* REVIEW**

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2001	Second Amended Complaint, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:24-cv-00728-JRG, ECF No. 23 (E.D. Tex. Jan. 28, 2025)
2002	Scheduling Order, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:24-cv-00728-JRG, ECF No. 27 (E.D. Tex. Feb. 6, 2025)
2003	CosMX Invalidity Contentions Cover Pleading, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:24-cv-00728-JRG (E.D. Tex. Jan. 7, 2025)
2004	Summons to attend oral proceedings in German Case No. 3 Ni 12/23 (EP) (“Germany Order 1”)
2005	Summons to attend oral proceedings in German Case No. 3 Ni 12/24 (EP) (“Germany Order 2”)
2006	Docket Navigator Time-to-Trial Statistics for Judge Rodney Gilstrap (accessed July 2, 2025)
2007	Docket, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:22-cv-00232 (E.D. Tex.)
2008	Joint Motion for Entry of Protective Order, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , No. 2:24-cv-00728-JRG, ECF No. 30 (E.D. Tex. Feb. 11, 2025)
2009	Amended Final Judgment, <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:22-cv-00232, ECF No. 427 (E.D. Tex.)
2010	Article, <i>Lithium battery manufacturer ATL won injunction against its Chinese rival COSMX in German Court</i> , China IP Today (April 6, 2024)
2011	Reserved
2012	Reserved
2013	Darts IP Reports: CN109301326, CN104466097, CN206490141, CN108352492 (May 6, 2025)
2014	IDS Filings for U.S. Patent Application No. 17/119,194
2015	Declaration of Dean R. Wheeler, Ph.D.
2016	<i>Curriculum Vitae</i> of Dean R. Wheeler, Ph.D.

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2017	V. Srinivasan and J. Newman, <i>Design and Optimization of a Natural Graphite/Iron Phosphate Lithium-Ion Cell</i> , 151 J. Electrochem. Soc. A1530 (2004)
2018	<i>Laser diffraction for particle sizing – Anton Paar</i> , available at: https://wiki.anton-paar.com/en/laser-diffraction-for-particle-sizing (accessed on 30 July 2025)
2019	<i>Understanding the Mechanical and Electrochemical Impacts of Binder Systems on Silicon Anodes in Lithium-Ion Batteries – BYU Scholar Archives</i> , available at: https://scholarsarchive.byu.edu/etd/10449 (accessed on 30 July 2025)
2020	Westphal, Bockholt, Günther, Haselrieder, and Kwade, <i>Influence of Convective Drying Parameters on Electrode Performance and Physical Electrode Properties</i> , ECS Transactions, 64 (22) 57-68 (2015)
2021	Liu, Chen, Liu, Chu, and Tiu, <i>Improvement of Lithium-Ion Battery Performance by Two-Layered Slot–Die Coating Operation</i> , Energy Technology 2017, 5, 1235–1241
2022	Reserved
2023	Reserved
2024	Reserved
2025	<i>2016 Batteries Conference GRC</i> , available at: https://www.grc.org/batteries-conference/2016/ (accessed on 12 May 2025).
2026	<i>Hubs – Department of Energy</i> , available at: https://www.energy.gov/hubs (accessed on 12 May 2025)
2027	<i>DOE Energy Innovation Hubs</i> , available at: https://science.osti.gov/bes/Research/DOE-Energy-Innovation-Hubs (accessed on 12 May 2025)
2028	Amir-Sina Hamed, Fezzeh Pouraghajan, Fei Sun, Mojdeh Nikpour, & Dean R. Wheeler, <i>Interplay of Electrode Heterogeneity and Lithium Plating</i> , 169 J. Electrochem. Soc. 020551 (2022)
2029	Amir-Sina Hamed, Adrian Yao, Roxana Martin, Raymundo Roig, Michael Rivas Valadez, Donald Pile, Annadanesh Shellikeri, Baichuan Liu, and Dean R. Wheeler, <i>Multi-layer</i>

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	<i>anodes for high-current applications</i> , 439 <i>Electrochimica Acta</i> 141649 (2023)
2030	Fezzeh Pouraghajan, Andrea I. Thompson, Emilee E. Hunter, Brian Mazzeo, Jake Christensen, Ram Subbaraman, Michael Wray, & Dean Wheeler, <i>The Effects of Cycling on Ionic and Electronic Conductivities of Li-ion Battery Electrodes</i> , 492 <i>J. of Power Sources</i> 229636 (2021)
2031	Amir-Sina Hamed, Edmund M. Shumway, & Dean R. Wheeler, <i>Electrode-Level Modeling of Silicon Anodes for Improved Cell Design</i> , 171 <i>J. Electrochem. Soc.</i> 120539 (2024)
2032	Reserved
2033	Reserved
2034	<i>Lithium-ion Battery Design: Effects of Optimal Compaction Density</i> , https://www.neware.net/news/lithium-ion-battery-design-effects-of-optimal-compaction-density/230/83.html (last visited on May 23, 2025)
2035	Shu Lu, et al., <i>Binder-Free LiCoO₂/Carbon Nanotube Cathodes for High-Performance Lithium Ion Batteries</i> , 24 <i>Adv. Mater.</i> 2294(2012)
2036	Lei-Lei Lu, et al., <i>Wood-Inspired High-Performance Ultrathick Bulk Battery Electrodes</i> , <i>Adv. Mater.</i> 1706745 (2018)
2037	Yasuhiko Takahashi, et al., <i>Structure and electron density analysis of electrochemically and chemically delithiated LiCoO₂ single crystals</i> , 180 <i>J. Solid State Chem.</i> 313 (2007) , https://doi.org/10.1016/j.jssc.2006.10.018
2038	<i>Carbon Black</i> , https://pubchem.ncbi.nlm.nih.gov/compound/carbon%20black , (last visited on May 23, 2025)
2039	Sankar Mandal, et al., <i>The Role of Carbon Black in LiMn₂O₄-Based Composites as Cathodes for Rechargeable Lithium Batteries</i> . 148 <i>J. Electrochem. Soc.</i> A24 (2001)
2040	Chris Meyer, et al., <i>Characterization of the Calendering Process for Compaction of Electrodes for Lithium-Ion Batteries</i> , 249 <i>J. Materials Processing Tech.</i> 172 (2017), https://doi.org/10.1016/j.jmatprotec.2017.05.031 .
2041	CosMX Amended Exhibit 118-19, “Invalidity of U.S. Patent No. 12,015,118 over ATL 265066 Cell/Electrode in view of Japan Patent Application Publication No. JP 2013-21109,” <i>Ningde</i>

Exhibit Number	Description
	<i>AmpereX Tech. Ltd. v. Zhuhai CosMX Battery Co.</i> , Case No. 2:24-cv-00728-JRG, ECF No. 64-1 (E.D. Tex. July 31, 2025)
2042	U.S. Patent Pub. No. 2021/0214234 (“Lee”)
2043	U.S. Patent Pub. No. 2022/0403062 (“Cha”)

I. INTRODUCTION

Ningde Amperex Technology Ltd. (“ATL” or “Patent Owner”) respectfully submits this Request for Director Review of the Board’s Decision Granting Institution of *Inter Partes* Review (Paper 11, “Institution Decision”). Three grounds independently support reversal of the Board’s Institution Decision.

First, the Director should revisit discretionary denial in this IPR because circumstances have changed (Paper 10). Jury selection remains set for July 6, 2026, which is over three-and-a-half months before the scheduled FWD in this proceeding. But at this point, institution has now been *denied* with respect to *three of the six other IPRs* filed by CosMX against patents asserted in the underlying district court proceeding. Those denials make it even less likely the district court will grant CosMX’s newly requested stay and make a jury trial even more likely to proceed before the FWD—further reinforcing the case for discretionary denial. *See* IPR2025-00524, Paper 7 (July 7, 2025); *see Samsung Elecs. Co., Ltd. v. Icashe, Inc.*, IPR2025-00639, Paper 11 at 2 (PTAB Aug. 14, 2025) (Stewart, Dir.) (explaining that it would be an inefficient use of Board resources to refer a subset of patents to the Board when other patents had already been denied institution).

Second, the USPTO’s new proposed rules regarding circumstances where the Director will apply his discretion to deny institution indicate changes in policy that fully align with applying that discretion to deny institution in this case. The latest

proposed rules suggest that it is an inefficient use of the Board's limited resources to institute review when there is a pending 102 or 103 challenge that will be decided in the district court. *Revision to Rules of Practice Before the Patent Trial and Appeal Board*, 90 Fed. Reg. 48335 (Oct. 17, 2025). Not only are there still pending 103 challenges in the district court, there remain invalidity challenges there that include the **same** primary prior art references at issue in this IPR (in combination with unpublished system art that cannot be raised here). The certainty of duplicative effort between tribunals warrants denial of institution.

Third, the Institution Decision should be vacated and reversed because the Board erred when it introduced its own evidence, not part of the Petition, to buttress an insufficient Petition and justify institution with respect to Ground 1 and 2. The Board relied upon new evidence that it introduced itself (Ex. 3003, "Hutin") to conclude that the prior art's use of laser diffraction techniques to measure particle sizes meant that the prior art's reported **number-based** particle size distribution ("D90") was a **volume-based** particle size distribution (Dv90). Institution Decision at 30-33. Not only is this argument incorrect and based on a misunderstanding of the Board's newly-introduced Hutin reference (as will be demonstrated by Petitioner), it was error for the Board to introduce this new evidence and argument at all, because the Board is limited to considering the evidence and arguments actually raised. Because the Board relied on this evidence for it to determine a reasonable likelihood

of success as to both Grounds 1 and 2 in view of Ishigaki's ambiguity, those Grounds lack a reasonable likelihood of success as argued in the Petition.

Third, the Board erred in concluding that Ishigaki discloses the claimed volume-based particle size distribution for Grounds 1 and 2. The Board's findings regarding Ishigaki are not supported by substantial evidence from the Petition and ignore the technical distinction between D90 and Dv90, improperly crediting Petitioner's expert using additional evidence not part of the Petition and to which Patent Owner had no opportunity to address before institution. The Board also erred when it found that Ishigaki's alleged disclosure of a range of compaction densities across all possible embodiments, both single-layer and double-layer, of 2.0–4.2 g/cm³ means that all of these compaction densities would apply to all embodiments.

Fourth, the Board erred in concluding that Ishigaki's alleged range of total compaction densities (which included single-layer structures) would also apply to double-layer structures, where it was unrebutted that double-layer structures have lower compaction densities and there was no evidence that a double-layer structure would have a compaction density within the claimed range (above 3.2 g/cm³).

Fifth, the Board erred in relying on "common sense" to pursue a higher compaction density in its combination of Wang and Saka (Ground 3) to obtain a combined compaction density above 3.2 g/cm³, where Saka expressly teaches (and the Board recognized) that battery performance decreases at compaction densities

greater than 3.0 g/cm³. Institution Decision at 43, 69, 73. Accepting “common sense” to contradict a limitation that one reference in the combination expressly teaches not to do was error and should be reversed.

Sixth, the Board erred in finding that Wang in view of Li teaches or renders obvious the claimed compaction density for a two-layer electrode. There was no evidence that Li’s density values are achievable or compatible with Wang’s structure, materials, and porosity targets. The Board failed to analyze the relationship between porosity and density, improperly treated density values between different references with different materials as interchangeable, and accepted a generic motivation to combine without reasoned analysis. This is contrary to Federal Circuit precedent and the requirements for obviousness and warrants reversal.

Altogether, these facts and errors underscore that it would not be an efficient use of resources for the Office to continue with IPR in this proceeding.

II. ARGUMENT

A. Denial of three out of six other petitions directed to patents in the underlying district court litigation supports discretionary denial

The Board or the Director have now denied institution in three of the six other petitions filed by CosMX against the patents at issue in the same underlying district court case. These denials, taken together with the certainty with which a trial at the district court will proceed before any FWD—involving evaluation of the *same primary prior art references* at issue in this IPR—means that IPR proceedings in

this forum are unlikely to offer the efficiencies envisioned by the AIA and instead will only multiply costs for Patent Owner. Indeed, the justification for denial of institution of the instant Petition, whose FWD is not expected until nearly four months after the scheduled jury trial, only increases in light of these other denials and institution decisions. Patent Owner therefore respectfully requests that the Director revisit the Decision denying discretionary denial in this case, including in view of these changed circumstances.

The Board's denials of three petitions so far¹, including denial of all challenges to two of the six challenged patents, ensures that a district court trial (together with its duplicated effort) is even more likely to occur without a stay. *See Force MOS Tech. Co., Ltd. v. ASUSTeK Computer, Inc.*, Case No. 2:22-cv-000460, ECF No. 74, (E.D. Tex. April 10, 2024) (stating the district court "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). Jury selection in the underlying district court

¹ The Board denied institution of U.S. Pat. No. 10,964,927 in IPR2025-00385 (Paper 10). The Director denied institution of U.S. Pat. No. 11,799,131 in IPR2025-00722 (Paper 11). Finally, the Directed reversed and vacated the Board's institution decision in IPR2025-00405, denying institution of review as to U.S. Patent No. 11,769,910. *See* IPR2025-00405, Paper 24.

case is set for July 6, 2026, well over three months *before* the scheduled FWD in this IPR. The increased likelihood of proceeding to trial on Petitioner's claims as to all asserted patents counsels against using the Board's limited resources for review of this Petition. *Samsung Elecs. Co., Ltd. v. Icashe, Inc.*, IPR2025-00639, Paper 11 at 2 (PTAB Aug. 14, 2025) (Stewart, Dir.) (it would be an inefficient use of Board resources to refer a subset of patents when other IPRs had already been denied).

Second, Petitioner's *Sotera* stipulation cannot outweigh the multiple other grounds favoring denial where Petitioner continues to assert the *same primary prior art references* in combination with unpublished system prior art references against the '118 Patent in the underlying district court litigation, which is likely to reach a verdict long before any FWD. Both Ishigaki (Ex. 1004) and Wang (Ex. 1005), the primary references in each of Petitioner's Grounds, are also being asserted against the '118 Patent in the underlying district court case as an obviousness reference in combination with several unpublished prior art products. Ex. 2003 at 26-27 (obviousness combinations 118-13 through 118-19). Petitioner's *Sotera* stipulation therefore is unable to moot the impact of its assertion of the same IPR art in district court when combined with unpublished system art. *See Motorola Sol'ns, Inc. v. Stellar LLC*, IPR2024-01205, Paper 19 at 3-4 (PTAB March 28, 2025) (Stewart, Dir.) (finding a *Sotera* stipulation unlikely to moot petitioner's combination of IPR art with unpublished system prior art in district court proceedings).

This concern is not merely academic, as CosMX recently amended its invalidity contentions in the instant underlying district court case to provide further detail regarding the combination of Ishigaki with unpublished system prior art system that it intends to rely on at trial. *See Ningde Amperex Technology, Ltd. v. Zhuhai CosMX Battery Co, Ltd.*, Case No. 2:24-cv-00728-JRG, ECF No. 69 (E.D. Tex Aug. 18, 2025); *see also* Ex. 2041 (amended invalidity chart from CosMX combining Ishigaki with ATL 265066 Cell/Electrode).

Indeed, the Office’s proposed new rulemaking suggests that institution in this case would be improper and does not align with the USPTO’s current policy objectives. *Revision to Rules of Practice Before the Patent Trial and Appeal Board*, 90 Fed. Reg. 48335 (Oct. 17, 2025). “Under the proposed revisions, this section would provide that the Office will not institute an IPR when a petitioner intends to pursue invalidity challenges under §§ 102 or 103 in other venues, such as district court” *Id.* at 48338. Contrary to this rule and as outlined above, CosMX continues to pursue invalidity challenges under § 103 in the underlying district court proceeding. What’s more, however, is that CosMX’s remaining invalidity challenges against the ’118 Patent are *all* based on the same primary prior art references it asserts here (Ishigaki and Wang), combined with unpublished system art, rendering its *Sotera* stipulation a nullity. Ex. 2003 at 26-27 (combinations 118-13–118-19). Therefore, under the policy objectives outlined in the recent notice of

proposed rulemaking, this IPR should be denied institution.

B. The Board’s reliance on additional art and arguments not in the Petition to support Grounds 1 and 2 is improper, and the Board erred in its interpretation of that evidence in any event

Section § 312(a)(3) requires that a petition for *inter partes* review must identify, “with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge.” 35 U.S.C. § 312(a)(3). In Section 314(a), Congress also provided:

The Director may not authorize an inter partes review to be instituted unless the Director determines that *the information presented in the petition* filed under section 311 and any response filed under section 313 *shows that there is a reasonable likelihood that the petitioner would prevail* with respect to at least 1 of the claims challenged in the petition.

35 U.S.C. § 314(a) (emphasis added). This limits the Director (and, as relevant here, the delegated-to Board) to only considering the evidence and arguments actually presented in the petition, and does not allow consideration of additional evidence or arguments not provided by the petitioner in determining whether a petition meets the “reasonable likelihood” bar for institution. That is, it is the petitioner who defines the scope and evidence for their raised patent challenge, not the Board. *See SAS Institute Inc. v. Iancu*, 584 U.S. 357, 367 (2018) (“In all these ways, the statute tells us that the petitioner’s contentions, not the Director’s discretion, define the scope of the litigation all the way from institution through to conclusion.”).

Presenting grounds and evidence in advance of the institution decision permits the patent owner to analyze them and to set forth “reasons why no inter partes review should be instituted based upon the failure of the petition to meet any requirement of this chapter.” 35 U.S.C. § 313; *see also* 35 U.S.C. § 312(a)(3), (5).

The Board erred here by introducing its own evidence and arguments to buttress an insufficient Petition. Patent Owner therefore had no opportunity to consider this evidence or the Board’s own arguments regarding that evidence in advance of the Institution Decision. If it had, it would have been able to identify for the Board the errors with such an interpretation of Hutin (Ex. 3003). However, Patent Owner was denied the opportunity to address these arguments because the Board identified additional evidence not raised in the Petition, providing its own arguments and interpretation without the benefit of any POSITA’s testimony regarding Hutin.

The Board’s Institution Decision relied on Hutin’s alleged definitions—not evidence or arguments provided in the Petition—to “develop” and “understand” the record. Paper 11 at 30-33. In particular, the Board relied upon Hutin to conclude that the prior art’s use of laser diffraction techniques to measure particle sizes meant that Ishigaki’s reported particle size distribution was a volume-based particle size distribution, not a number-based particle size distribution. *Id.*

However, a POSITA would have been aware that laser diffraction techniques or laser scattering methods can be used to initially determine particles sizes prior to

reporting *either* a volume-based distribution or a number-based distribution—the fact that laser diffraction is used for measurement of particles sizes does not necessarily mean that the size distribution that is reported is a volume-based particle size distribution. Either type of size distribution can be reported after measuring particle sizes using laser diffraction. *See* U.S. Patent Pub. No. 2021/0214234 (Ex. 2042) ¶ [0014] (“*D_v90* refers to a particle diameter when a *cumulative volume* is at 90% from a small diameter in *a particle size distribution measurement by a laser scattering method*, and *D_n90* refers to a particle diameter when a *cumulative number of particles* is at 90% from a small particle diameter *in a particle size distribution measurement by a laser scattering method.*”), ¶ [0036] (describing measuring a number density after using a laser diffraction analysis according to ISO 13320-1 to measure particle sizes); *see also* U.S. Patent Pub. No. 2022/0403062 (Ex. 2043) ¶ [0029] (“Meanwhile, in the present invention, the mean particle size (*D50*) of the nanosilica refers to a particle size at *the point where the number-based cumulative distribution of particles according to the particle size reaches 50% when the particle size distribution of the nanosilica is analyzed*, and *it may be measured using a laser diffraction method.*”), [0115] (describing determining a number-based cumulative distribution of particles using a “laser diffraction particle size analyzer” to measure particle sizes); *see also* Ex. 2015 ¶¶ 67-74.

Therefore, even if Hutin did teach that one could use a laser diffraction

technique to measure particle *sizes* by volumetric analysis and could then choose to report its measured particle *distribution* as a volume-based distribution does not mean that Ishigaki's analysis of particle sizes using laser diffraction techniques necessarily means that Ishigaki's reported distribution was a volume-based particle distribution, as the Board concluded. The error infects Grounds 1 and 2, and the Board's finding regarding those Grounds should be reversed.

C. The Board erred in concluding that Ishigaki's entire alleged range of compaction densities for single-layer embodiments would also apply to double-layer embodiments.

The Board also erred when it concluded that Ishigaki teaches a first and a second layer with a total compaction density greater than 3.2 g/cm³, as the claims require. The number of layers affects the potential total compaction density, and there is no evidence in Ishigaki that any double-layer structure could (or should) meet the claimed compaction density. Prelim. Resp. 15-16; Ex. 2015 ¶¶ 81-86. Ishigaki teaches that two-layer electrodes have *lower* compaction densities than single-layer electrodes, and its disclosed range of compaction densities do not also apply to those two-layer electrodes. Ex. 2015 ¶¶ 85-88. By way of an illustrative analogy, a disclosure that professional athletes in the NBA and WNBA in 2025 have heights ranging from 5'6" to 7'4" does *not* mean that WNBA athletes are *also* necessarily found in the range 6'10" to 7'4" (because, on average, WNBA players are shorter). Similarly, even if Ishigaki taught that compaction densities in its single-

layer and double-layer embodiments range from 2.0 to 4.2 g/cm³, that would not be a teaching that the total compaction density of any *double* layer embodiment is necessarily greater than 3.2 g/cc (because two-layer structures have lower compaction densities than single-layer structures). Ex. 2015 ¶¶ 81-88 (explaining why Ishigaki’s disclosure of “mixture density” values only apply to single-layer structures). Ishigaki is thus silent with regard to the actual compaction densities in its double-layer embodiments.

The Board therefore erred in concluding that Ishigaki discloses a first and second layer having a total (combined) compaction density above 3.2 g/cm³, and should be reversed as to Grounds 1 and 2.

D. The Institution Decision erred in relying upon “common sense” for pursuing higher compaction density, where Saka specifically teaches away from using compaction densities above 3.0 g/cm³

With respect to Ground 3, the Board accepted Petitioner’s statement from its expert that “*common sense* dictates choosing the highest compaction density that is workable for a given application,” as it argued with respect to Grounds 1 and 2. Institution Decision at 43 (emphasis added); Prelim. Resp. 42-43 (citing Ex. 1010 ¶ 2813; Ex. 2015 ¶ 161); *see also* Petition at 33. First, this argument was not raised in the Petition as a basis for supporting its proposed combination in Ground 3 and was therefore improper for the Board to consider as justification for Ground 3. Second, such conclusory statements and unspecific expert testimony are insufficient

to justify the use of general knowledge to modify a reference or provide a missing limitation. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362 (Fed. Cir. 2016); *see also* July 31, 2025 Memorandum by Coke Morgan Stewart, “Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Review” (“July 31 Memorandum”). While the July 31 Memorandum applies to petitions for *inter partes* review filed on or after September 1, 2025, the concerns identified in the guidance also apply here, where “common sense” was relied upon by the Board to justify selecting a higher compaction density to meet the claimed range, even though Saka specifically teaches to avoid this range.

A POSITA would know that higher compaction density is not always desirable as it can restrict ion flow—and indeed, Saka teaches that ***superior*** battery performance is achieved at lower densities (2.8 g/cm³), and that this performance decreases at higher densities above 3.0 g/cm³. *See* Prelim. Resp. at 39; Ex. 1006 ¶ 179, Ex. 2015 ¶ 16. Indeed, the Board agreed that “Patent Owner’s point that ***Saka teaches that battery performance decreases at compaction densities greater than 3.0 g/cm³ is well taken.***” Institution Decision at 73 (emphasis added). The case cited by the Board to nonetheless justify institution (*Merck & Co., Inc. v. Biocraft Laboratories, Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989)), which stated that “all disclosures of the prior art, including unpreferred embodiments, must be considered,” was a case where other embodiments were disclosed but were not

taught as preferred, but *Merck & Co* did not address embodiments that the prior art reference specifically ***taught away*** from using, as Saka does.

The Board's decision finding that a POSITA would nonetheless pursue compaction densities above 3.0 g/cm³, even though it agrees that Saka teaches that battery performance decreases at those values, is erroneous and should be reversed.

E. The Board erred in finding that Wang in view of Li could or would achieve the claimed compaction density with different materials

The Board erred by finding that Wang in view of Li renders obvious the claimed compaction density (>3.2 g/cc) for a two-layer electrode, despite the absence of evidence that Li's density values are achievable or compatible with Wang's structure, materials, and porosity targets. As explained, Li's high-density examples are only possible with specific cathode compositions, and Li does not provide sufficient detail to reproduce those examples or show compatibility with Wang's disclosed materials and porosity ranges. Prelim. Resp. at 51-55. Neither Petitioner nor its expert discusses how the active materials and additives in Wang would impact the maximum possible density values, nor whether a density of 3.2 g/cc or greater is achievable while maintaining Wang's porosity targets. *Id.* at 55. Moreover, Li does not discuss porosity at all, and the Board failed to analyze whether Li's density values could be achieved within Wang's porosity limitations. *Id.* at 56. This lack of reasoned analysis and evidentiary support is contrary to Federal Circuit precedent, including *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355 (Fed. Cir. 2016),

which requires more than conclusory expert statements that a POSITA would have a “desired” compaction density in mind. This also warrants reversal.

III. CONCLUSION

Patent Owner respectfully requests that the Director vacate and reverse the Board’s Decision Granting Institution and instead deny institution.

Dated: November 7, 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 motion complies with the page limits of 37 C.F.R. §42.24(a)(1)(v) because it contains 15 pages.

Dated: November 7, 2025

Respectfully submitted,

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

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), the undersigned hereby certifies that true and correct copies of the above-captioned **REQUEST FOR DIRECTOR REVIEW OF DECISION GRANTING INSTITUTION OF *INTER PARTES* REVIEW and NINGDE AMPEREX TECH. EXHIBITS 2041-2043** were served in its entirety on November 7, 2025 via filing through the Patent Trial and Appeal Case Tracking System (P-TACTS) and electronic mail on the following counsel of record for Petitioner:

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