

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZHUHAI COSMX BATTERY CO., LTD.,
Petitioner

v.

NINGDE AMPEREX TECHNOLOGY LIMITED,
Patent Owner

Case IPR2025-00524
U.S. Patent No. 12,015,118

**PETITIONER'S OPPOSITION TO
PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW**

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
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I. INTRODUCTION

Patent Owner's Request for Director Review (RDR) misconstrues the facts and the equities of both the present proceeding and the co-pending litigation to manufacture three purported grounds to reverse the Board's Institution Decision. All these grounds are simply untrue.¹ *First*, Patent Owner tries to use the Board's denial of two of the six patents asserted in the co-pending litigation to bootstrap its argument that this one should be denied as well. That argument is nonsensical in view of the fact that three of the other five IPRs are instituted and proceeding to final written decision along with this one. There is no efficiency to be gained by denying the present Petition, especially where the Board already found that every single claim challenged was likely unpatentable on every ground presented.

Second, Patent Owner tries to invoke two technicalities as sources of error, contending that (1) Petitioner's *Sotera* stipulation is insufficient in view of *proposed* new rules, and (2) the Board improperly relied on new evidence in refuting one of Patent Owner's arguments about how a POSA would have

¹ The RDR states that "[t]hree grounds independently support reversal of the Board's Institution Decision," but goes on to identify seven disparate grounds, although it only enumerates six as it numbers two grounds "third." RDR at 1-4. Notwithstanding this lack of clarity, Petitioner refutes each basis in turn below.

understood an anticipating reference. Both arguments fail. If a new stipulation is required in the future, Petitioner will address that development at the appropriate time. A proposed new rule is a not a source of reversible error. Similarly, the Board's citation of evidence not previously presented does not constitute reversible error as it was not used to fill any purported gap in the prior art or analysis. Rather, the Board simply provided additional context for why it found Patent Owner's technical arguments unpersuasive at this phase of the proceeding. In any event, that disputed evidence relates only to Grounds 1 and 2, and the Institution Decision fully explains why Grounds 3 and 4 each render all claims unpatentable.

Finally, Patent Owner rehashes the merits of its Preliminary Response, dissatisfied with the outcome of the Board's Institution Decision. Even if Patent Owner were correct in any of its technical arguments—which it is not—these are not the kinds of disputes that constitute reversible error at the institution phase of a proceeding. Patent Owner will have an opportunity to further develop these positions and try to convince the Board of their merit during trial.

The Acting Director already found that discretionary denial is not warranted for this Petition. Patent Owner makes no attempt to identify any error in that decision. The Acting Director considered all the Office's discretionary considerations (including the current *Fintiv* policy), weighed them appropriately, and issued a reasoned decision referring the Petition to a merits panel. That merits

panel also issued a well-reasoned decision fully analyzing the merits of all four Grounds presented and finding all four Grounds likely to succeed for every claim of the '118 patent. The Director should not disturb those decisions.

II. ARGUMENT

The Acting Director and Board have already considered the interplay between this IPR and the co-pending district court case, and among the co-pending IPR challenges to the patents asserted in that litigation. *See generally* DD BR.; DD Opp.; DD Decision. Nothing material has changed since the parties briefed, and the Acting Director considered the *Fintiv* factors and the overall efficiency of institution and found discretionary denial unwarranted. The RDR does not purport to identify any error in the Acting Director's discretionary denial analysis.

Similarly, Patent Owner's disagreements with the Board's Institution Decision on the merits do not present any reversible error. Indeed, at no point does Patent Owner demonstrate that the statutory threshold for institution is not met. Instead, Patent Owner simply takes issue with the Board's findings of facts and conclusions—raising the types of arguments that are properly presented in a Patent Owner Response. They are not a basis to overturn the Institution Decision.

A. **The interplay between the parallel district court case and this proceeding is not a basis to overturn the Institution Decision.**

Patent Owner misleadingly observes that institution was denied for three of the six other IPRs asserted in the co-pending litigation, and presents that by itself

as its primary reason to reverse the Board's institution here. RDR at 1, 4. There are multiple flaws in this argument.

First, Patent Owner tries to hide the fact that Petitioner challenged six patents across seven IPRs, and four of the six patents are now in IPR trials (one Petition challenging the same patent was discretionarily denied for being ranked second while the other Petition was instituted). Patent Owner's *three of six* number is directed at *petitions* filed, not *patents* challenged. In other words, institution has been *granted* and *inter partes* review is proceeding to a Final Written Decision for the *other* three of five patents challenged. *See Zhuhai CosMx Battery Co., Ltd. v. Ningde Ampere Tech. Ltd.*, IPR2025-00389, Paper 19 (denying director review of institution), IPR2025-00431, Paper 27 (denying director review of institution), IPR2025-00432, Paper 10 (instituting review) (PTAB 2025). Therefore, regardless of what happens in this proceeding, there will be parallel district court and Patent Office proceedings. Revoking institution of this fourth instituted Petition does nothing to promote overall efficiency, especially where the Board has already found that Petitioner here has demonstrated a likelihood of success on the merits for every challenge to every claim of the '118 patent. This Petition is well worth the Board's resources.

Second, Patent Owner ignores that the parties' disputes about the six asserted patents here are exactly the kind of situation that IPR proceedings were

intended to address. IPRs play a pivotal role in weeding out weak and invalid patents with claims that should never have been allowed in the first place, particularly when patentees inundate district court litigation with voluminous asserted claims. That is precisely what is going on here. Patent Owner has asserted nearly 100 claims from six patents in district court—most of which the Board has already held will likely be found unpatentable. Indeed, empowering defendants to resist these kinds of tactics has been one of the key benefits of IPR practice. Petitioner and the district court are receiving that benefit from institution here.

PTAB trials before tribunals of specialist judges are also more efficient and fairer in adjudicating the validity of dozens of claims relative to district court proceedings. *See, e.g., STA Group LLC v. Motorola Sols., Inc.*, No. 2:23-cv-00030, Dkt. No. 402 (E.D. Tex. Aug. 27, 2024) (recognizing the efficiency created by a PTAB decision that narrows some issues in a case even where it does not eliminate all issues). A panel of experienced APJs—who in this IPR have already invested considerable time and effort to determine that the challenged '118 patent claims are likely to be proven unpatentable several times over—is better suited to handle the issues raised in this Petition than a lay jury who will start from scratch.

Third, Patent Owner argues that the Office's proposed new rules indicate changes in policy that align with discretionary denial in this instance. RDR at 1-2, 6-7 (referring to new rules concerning *Sotera* stipulations and invalidity challenges

in district court). But these new rules are only proposed. It is improper of Patent Owner to ask for—and would be improper for the Director to apply—such rules before they are actually adopted, if at all. Petitioner’s current *Sotera* stipulation is compliant with the Office’s current rules and guidance.

Moreover, the specific new rule that Patent Owner invokes merely requires submission of a “Sotera + stipulation” where there is a parallel § 102 or § 103 challenge in district court. *See Revision to Rules of Practice Before the Patent Trial and Appeal Board*, 90 Fed. Reg. 48335 (Oct. 17, 2025). In the event this new rule is adopted, Petitioner can respond at that time. Indeed, Petitioner has fully complied with every one of the new rules, guidance, FAQs, and memos from the Office both before and after the filing of the present Petition. And the Petition was instituted accordingly. It does not present a reason to overturn the Institution Decision that Petitioner has not yet filed a stipulation that is not yet required.

Finally, Patent Owner’s RDR attaches three new exhibits: EX2041, EX2042, EX2043. One of which (EX2041) reflects alleged developments in the district court litigation that post-date the Institution Decision. *See* RDR at 7. The presentation of new evidence in a RDR is improper and cannot be considered. *See* <https://www.uspto.gov/patents/ptab/decisions/director-review-process#:~:text=D.,procedures%2C%20guidance%2C%20or%20decisions>. Specifically, “[a]bsent Director authorization, a request for Director Review may

not introduce new evidence, 37 C.F.R. § 42.75(c)(3), and exhibits may not be entered in support of the request for Director Review.” *Id.*, § 3.E. Accordingly, “[t]he Director will not consider new evidence or new arguments not part of the official record.” *Id.* The Director should not consider this evidence in his review.

B. The Board’s citation of additional evidence is not error and not a basis to reverse the Institution Decision.

Patent Owner argues that the Board erred by citing evidence not included in the original Grounds. This argument is incorrect because the Board did not rely on any new evidence to establish claim limitations, but only to support its evaluation of the prior art and expert credibility. Patent Owner’s assertion that the Board erred by introducing evidence corroborating the Petition’s arguments for Grounds 1 and 2 is merely a disagreement with the Board’s conclusions, framed as a procedural objection. RDR at 2-3. It misconstrues the facts and the Board’s decision, and its procedural argument would be wrong even under its revisionist history.

First, the Board did not rely upon new evidence to determine that the prior art’s use of laser diffraction measures a volume-based particle size distribution. *Contra* RDR at 2-3. There was no “ambiguity” in Ishigaki and no deficiency in the Petition to overcome. *Contra* RDR at 2-3. Indeed, the Board directly quoted Ishigaki, which expressly states that its laser diffraction measurement of D90 was “a particle diameter standard as a volume standard.” *See* Paper 11 (ID) at 22-23 (quoting EX1004 at ¶39 as expressly disclosing the claimed average particle size

as a Dv90 volume-weighted distribution). Thus, the Board correctly established the prima-facie case in the four corners of the Petition and Petitioner's cited evidence.

The Board cited EX3001 (Hutin) only to corroborate its evaluation of competing expert testimony and to reject Patent Owner's counterarguments regarding conversions between number-based and volume-based particle size distributions. ID at 31-32. Hutin merely reinforced that Patent Owner's Preliminary Response arguments conflicted with the express teachings of the cited prior art and lacked scientific credibility. *Id.* This does not constitute an erroneous use of new or extrinsic evidence. *See, e.g., Apple Inc. v. AliveCor, Inc.*, IPR2022-01560, Paper 10 at 27 (PTAB Apr. 11, 2023) (citing epilepsy foundation webpage as EX3001 for background information on seizure terminology supporting institution decision); *Samsung Elecs. Co., Ltd. v. Lynk Lab 'ys, Inc.*, IPR2022-00100, Paper 10 at 16 (PTAB June 9, 2022) (citing dictionary.com as EX3001 in support of claim construction in institution decision); *3Shape A/S et al v. Align Tech. Inc.*, IPR2020-01644, Paper 9 at 24 (PTAB May 11, 2021) (introducing web pages as EX3001 and EX3002 to show public accessibility of cited art supporting institution decision).

Second, even if citing Hutin were improper, any error would be harmless. Ishigaki fully discloses each claim limitation expressly or inherently, so no gap existed that required filling. The Board's discussion of Hutin was—at worst—

superfluous dicta. Moreover, the Board found that each of the four Grounds rendered every single claim likely unpatentable. *See* ID at 38-39, 54, 73, 81. Patent Owner's misapprehension of Hutin's relevance only purports to identify an error in the Board's analysis of Grounds 1 and 2. The Institution Decision still thoroughly explains why Grounds 3 and 4 each renders all claims unpatentable. *Id.* Accordingly, there is no basis to revoke institution, as the decision independently supports the unpatentability of all claims.

It is particularly egregious for Patent Owner to fault the Board for citing additional evidence in its Institution Decision while simultaneously flouting the rules by submitting its own unauthorized evidence in the present Request for Director Review. *Compare* RDR at 10, EX2042, EX2043 (purporting to introduce new substantive evidence regarding the understanding a POSA would have at the relevant time), *with* 37 C.F.R. § 42.75(c)(3).

C. Patent Owner's remaining arguments merely rehash the merits without identifying any reversible error.

Patent Owner's final four arguments identified in the Introduction and sections C, D, and E of the Argument are nothing more than disagreements with individual fact findings and conclusions by the Board. *See* RDR at 3-4, 11-15. They are the kinds of disputes that should be explored through cross-examination of Petitioner's expert and further briefing upon institution through its POR and Sur-Reply. As the Board found, the Petition presents a strong case of inherent

anticipation and obviousness based on multiple grounds. Pet. at 9-70. It explains at length how the prior art discloses (and renders obvious) every limitation of every claim. *Id.*

The '118 patent recites a well-known electrode structure with certain numeric values for compaction density and/or average particle size of the electrode active material. Multiple prior-art electrodes inherently had or expressly disclosed the properties expressed in those numeric values. There is no dispute that, as the Board found, a POSA would know how to determine those numeric values through basic calculations applied to the express teachings of the cited prior art. *See* Pet. at 3, 22, 51; EX1010, ¶¶90, 151, 199, 295, 311-313; *see generally* EX1007. The Board correctly found that the prior art cited in all four Grounds taught every limitation of the claims based on the four corners of the references when viewed through the lens of the POSA. ID at 38-39, 54, 73, 81.

1. The Board correctly rejected Patent Owner's attempt to distinguish single-layer and double-layer embodiments in Ishigaki (Grounds 1 and 2).

The Board correctly rejected the argument in Section II.C of Patent Owner's RDR. Patent Owner argues that there is no evidence in Ishigaki that a double-layer structure could have the claimed compaction density. That is incorrect. The Petition pointed to that evidence, Petitioner's expert explained the mathematical necessity of the numeric ranges, and the Board found that evidence sufficiently

persuasive at this stage. Specifically, the Petition demonstrates that the main text of Ishigaki describes a two-layer electrode structure, *see* Pet., 10-15, with a total electrode compaction density of up to 4.4 g/cc, *see id.* at 15-17. This range plainly meets the claim element requiring the total compaction density to be “greater than 3.2 g/cc.” *Id.* at 17 (citing EX1004, ¶151).

Patent Owner suggests that a POSA would not interpret Ishigaki’s compaction density to apply to its two-layer structure, believing that single-layer structures would be different in some unspecified way. RDR at 11-12 (drawing a basketball analogy). Patent Owner is simply wrong. Ishigaki describes a two-layer electrode structure and then provides the total electrode compaction density range applicable to that overall electrode structure. *See* EX1004 at 2-37. Accordingly, there is no basis to read Ishigaki’s reported density range as limited to a one-layer electrode structure. The Board correctly found this argument unconvincing.

2. The Board did not need or invoke “common sense” for pursuing higher compaction density in Wang and Saka (Ground 3).

Patent Owner mischaracterizes the Petition and Institution Decision. It incorrectly argues that the Board relied on “common sense” to supply a missing limitation in Ground 3 or justify compaction densities. RDR at 12. On the contrary, the Board accepted Petitioner’s statement on “common sense” to support a POSA’s

motivation to modify or combine—not to substitute for any missing limitation.

This approach is fully permissible under the July 31, 2025 USPTO Memorandum.

The Petition provided a clear motivation to pursue higher compaction densities in electrodes. While this motivation was supported by express citation to the cited prior art, it was also supported by an expert’s account of what a POSA would desire and understand. Specifically, Wang teaches that compaction is used to achieve any desired net density, which a POSA would have understood to be directly related to the energy capacity of the electrode. Pet. at 36. Saka teaches that density is connected to energy capacity, and more specifically teaches a compaction density of up to 3.5 g/cc. Pet. at 37, 44 (citing EX1006, ¶51). Nothing more is required to make a prima facie case of obviousness.

Turning to Patent Owner’s teaching-away argument, it likewise fails. Patent Owner attempts to rebut this prima facie case by arguing that Saka “expressly teaches away” from compaction densities above 3.0 g/cm³. RDR at 12-13. It does not. Indeed, Saka expressly teaches a density range of up to 3.5 g/cc. It suggests that compaction densities over 3.0 g/cc can result in a decrease of battery performance, and that lower densities are preferred. ID at 73. But merely identifying some embodiments as preferred and others as not preferred (and the reason why) is not an “express teaching away.” *Id.* (citing *Merck & Co., Inc. v. Biocraft Laboratories, Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (holding that “all

disclosures of the prior art, including unpreferred embodiments, must be considered”)). Patent Owner tries to distinguish *Merck*, but identifies no case law or authority supporting the baseless assertion that Saka’s identification of non-preferred embodiments within the disclosed numeric range rises to the level of “express teaching away.” It does not.

Patent Owner also suggests that the Board was wrong to interpret the express teachings of the prior art consistently with how a POSA would understand them in view of common sense and general knowledge. RDR at 12. But that is the correct standard for obviousness at the PTAB. Indeed, viewing the prior art through the lens of the POSA (including the common sense and ordinary creativity that a POSA would possess) is the proper standard for obviousness at the PTAB. Doing so does not run afoul of the Board’s guidance against using common sense or the knowledge of a POSA to fill in gaps in the art or supply missing limitations. *Contra* Pet. at 12 (citing *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362 (Fed. Cir. 2016); *see also* July 31, 2025 USPTO Memorandum (“Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Review”). Here, there were no gaps or limitations to fill in.

To that end, the Board viewed the prior art through the lens of a POSA, who would understand that compaction density should be maximized in order to maximize the energy capacity of the battery. *See* Pet. 16, 17, 29 (citing EX1009).

The Petition also explains that there is an upper limit to the compaction density of the electrode and that any POSA would understand the benefits of compaction density maximization (energy maximization) are constrained by the function of the electrode in permitting the passage of ions. *See* Pet. 16, 17, 29 (elaborating the motivation to maximize the energy capacity of the battery). The Petition laid out the skill, knowledge, and common sense of the POSA in the context of Ground 1, and then referred back to that standard, as the same POSA applied to all Grounds. *Id.* That the Petition did not duplicate the POSA standard in each Ground is not an error. *Contra* RDR at 12. The Board was correct to view all the prior art through the lens of the same POSA, including the POSA's knowledge of the state of the art.

3. There is no error in the Board's finding that Wang and Li could achieve the claimed compaction density (Ground 4).

The Board did not err in finding that Petitioner made its prima facie case of obviousness for Ground 4. Wang and Li disclose lithium-ion batteries with similar structures, including two positive electrode mixture layers that increase the energy density of the batteries. Pet. at 60. Wang and Li both teach the use of the same active layer materials. *Id.* Wang expressly teaches that its method can be used to achieve any desired electrode density. A POSA would look to the compaction density taught in Li (which is entirely within the claimed numeric range) because the batteries disclosed in Wang and Li are similar. *Id.* at 60-61.

The RDR argues that the Board erred in finding that Wang and Li render the claims obvious because Wang and Li have different “structure, materials, and porosity targets.” RDR at 14. Not true. The Petition explains that Wang and Li teach the same materials for the same objectives. Pet. at 62. Both are directed to lithium-ion batteries. Nothing in either reference suggests that Li’s high-compaction densities would be incompatible with Wang’s process regarding structure or porosity. *Id.* at 62-63. A POSA would take from Li that its compaction densities would work in the Wang battery, given their other similarities.

Patent Owner purports to fault Petitioner, its expert, and the Board for failing to discuss how the active materials and additives in Wang would impact the maximum possible density values achievable given Wang’s porosity. RDR at 14. But that alleged obstacle is entirely unfounded speculation. Patent Owner presents no reason to believe that the active materials and additives in Wang would limit Wang’s achievable density, especially where Wang expressly teaches that its method can be used to achieve any desired density. Pet. at 62-63. Petitioner need not preemptively refute every hypothetical obstacle that Patent Owner can imagine in order to show a likelihood of success for obviousness.

III. CONCLUSION

The Director should not disturb the Board’s Institution Decision.

Respectfully submitted,

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PETITIONER'S OPPOSITION TO
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