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Paper 12
Date: October 24, 2023

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.

IPR2023-00585
Patent 11,329,352 B2

Before DONNA M. PRAISS, KRISTINA M. KALAN, and JEFFREY W. ABRAHAM, *Administrative Patent Judges.*

KALAN, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Zhuhai CosMX Battery Co., Ltd. ("Petitioner")[1] filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 1–3 and 5–12 of U.S. Patent No. 11,329,352 B2 (Ex. 1001, "the '352 patent"). Ningde Amperex Technology Ltd. ("Patent Owner")[2] filed a Preliminary Response (Paper 9, "Prelim. Resp."). We authorized a Reply by Petitioner and a Sur-Reply by Patent Owner on the issue of discretionary denial under 35 U.S.C. § 314(a) that the parties subsequently filed (Paper 10, "Reply"; Paper 11, "Sur-Reply").

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." However, institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding."). For the reasons stated below, we exercise our discretion not to institute an *inter partes* review.

II. BACKGROUND

A. Related Proceedings

The parties indicate that the '352 patent is the subject of *Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co., Ltd.*, Case No. 2:22-cv-

[1] Petitioner identifies itself as the real party in interest. Pet. 102.
[2] Patent Owner identifies itself as the real party in interest and informs us that it is a wholly owned subsidiary of Amperex Technology Limited. Paper 3, 1.

00232-JRG (E.D. Tex.)("parallel district court litigation"). Pet. 102; Paper 3, 1. Patent Owner also lists as related matters *inter partes* review proceedings IPR2023-00586 involving Patent Owner's co-owned U.S. Patent No. 10,833,363 and IPR2023-00587 involving Patent Owner's co-owned U.S. Patent No. 10,964,987. Paper 3, 2.

B. The '352 Patent

The '352 patent, titled "Secondary Battery Cell and Winding Formation System Thereof," issued on May 10, 2022. Ex. 1001, codes (45), (54). The patent "relates to the field of secondary batteries, in particular to a structure of the secondary battery." *Id.* at 1:6–7. The objectives of the claimed secondary battery include preventing the secondary battery "from generating internal short circuit while improving the energy density of the secondary battery," providing "a secondary battery winding formation system, which can reduce the volume," and improving manufacturing costs and safety performance. *Id.* at 1:43–55. The '352 patent explains that, in prior art batteries, the "laser cleaned groove on the electrode plate has an overheated perforation or a burned hole on the edge due to focal length fluctuation and deviation," such that "plenty of burrs are formed on a current collector on the edge of the groove," and "if the electrode plate with burrs is directly manufactured into a cell without processing, then the burrs will pierce the separator to cause internal short circuit, a fire disaster and other severe potential safety hazards." *Id.* at 1:27–34.

Petitioner provides an annotated version of the '352 patent's Figures 2(a) and 2(b), reproduced below, illustrating the secondary battery's anode plate that includes a current collector, electrode tab, and active layer.

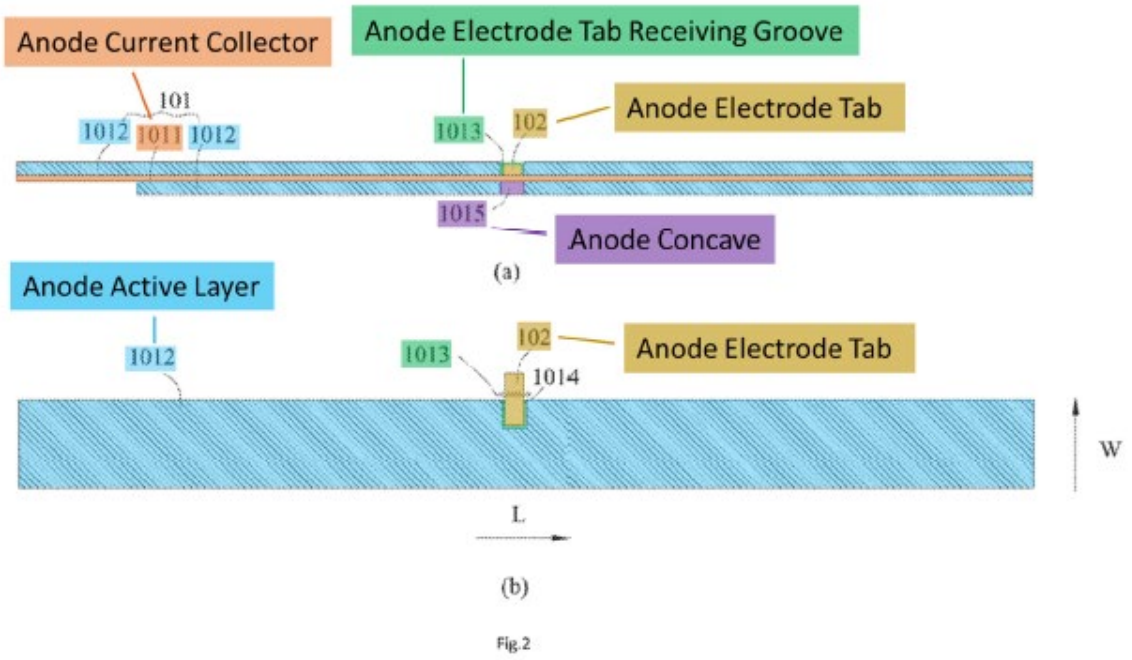
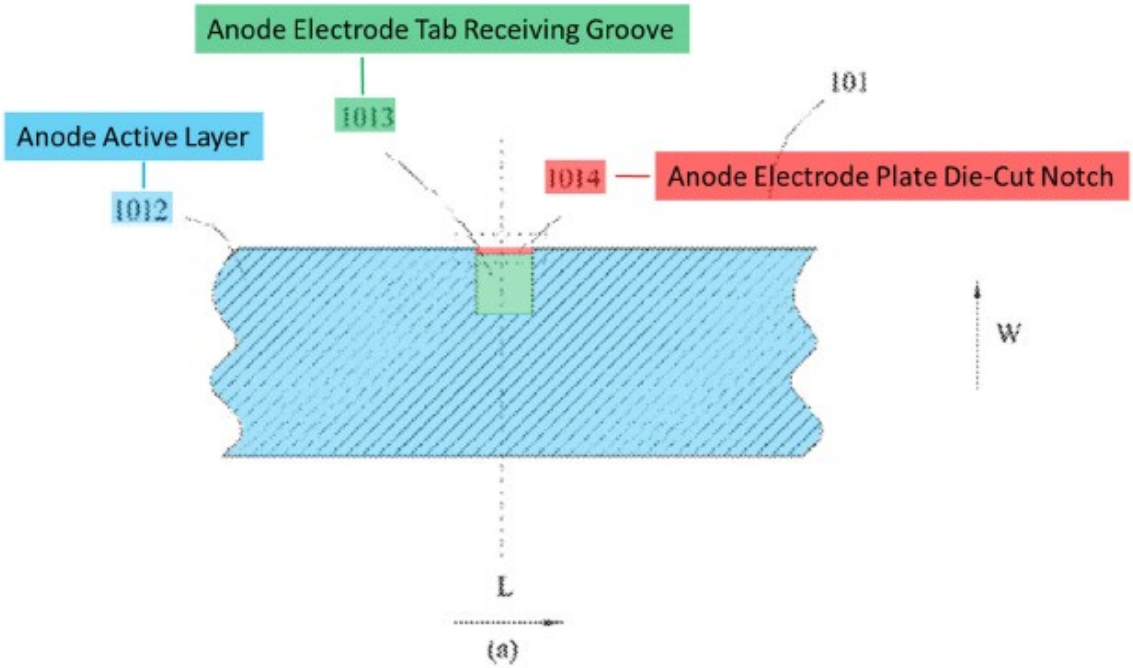


Fig.2

Pet. 12. Figure 2 "is a schematic view of the welded anode electrode plate and electrode tab of the secondary battery," Figure 2(a) "is a sectional view of the welded anode electrode plate and electrode tab," and Figure 2(b) "is a top view of the anode electrode plate as shown in" Figure 2(a). Ex. 1001, 2:46–51. According to the '352 patent, the "anode electrode tab is received in the anode electrode tab receiving groove, and the cathode electrode tab is received in the cathode electrode tab receiving groove, thus effectively improving the energy density of the secondary battery." *Id.* at 2:27–31. Moreover, the '352 patent discloses notches, namely, an "anode electrode plate die-cut notch" that "can remove the burrs formed on the current collector on the edge part of the anode electrode tab receiving groove during formation," and a "cathode electrode plate die-cut notch" that "can effectively remove the burrs formed on the current collector on the edge part of the cathode electrode tab receiving groove during formation," thus "effectively preventing the secondary battery from generating internal short circuit, and improving the safety performance of the secondary battery while

ensuring a high energy density." *Id.* at 2:31–40. Petitioner provides an annotated version of the '352 patent's Figure 5(a), reproduced below, illustrating the secondary battery's anode electrode plate die-cut notch.



Pet. 13. Figure 5(a) is a schematic view of the anode electrode plate of the secondary battery. Ex. 1001, 2:64–66. Petitioner's annotations depict anode active layer 1012 in blue, anode electrode tab receiving groove 1013 in green, which is a rectangular section extending inward from the surface of anode active layer 1012, and anode electrode plate die-cut notch 1014 in red, which is a line above the green rectangular section that is flush with the surface of anode active layer in blue.

C. Illustrative Claim

Claim 1, the sole independent claim, is reproduced below:

1(pre). A secondary battery, comprising:
1(a) a first electrode tab;
1(b) a first electrode plate, comprising:
1(c) a first current collector, and

1(d) a first active substance, disposed on a first surface of the first current collector and a second surface of the first current collector, wherein the second surface is opposite to the first surface;

1(e)(i) a first electrode tab receiving groove, defined by an exposed portion of the first surface of the first current collector and the first active substance on a periphery of the first electrode tab receiving groove,

1(e)(ii) the first electrode tab receiving groove receiving the first electrode tab,

1(e)(iii) wherein the first electrode tab is electrically connected with the first current collector through the first electrode tab receiving groove;

1(f) a first recess that is opposite to the first electrode tab receiving groove, defined by a corresponding portion of the second surface of the first current collector and the first active substance on a periphery of the first recess;

1(g) a first electrode plate notch disposed on a side edge of the first electrode tab receiving groove and extending through the second surface and the first surface of the first current collector, and

1(h) the first electrode tab receiving groove is formed by the first current collector and at least two first active substance walls;

1(i) wherein the secondary battery is a wound-type secondary battery.

Ex. 1001, 15:2–30 (numbered paragraphs/limitations corresponding to the Petition).

D. Asserted Grounds of Unpatentability

Petitioner contends that claims 1–3 and 5–12 of the ’352 patent are unpatentable based on the following grounds (Pet. 9–10):

Claim(s) Challenged	35 U.S.C. §[3]	Reference(s)/Basis
1–3, 9–12	103	Wang,[4] Deng[5]
1–3, 9–12	103	Wang, Zhou[6]
5–8	103	Wang, Deng, Kobayashi[7]
5–8	103	Wang, Zhou, Kobayashi
11	103	Wang, Deng, Hasegawa[8]
11	103	Wang, Zhou, Hasegawa

Petitioner also relies on a declaration from Dr. Ulrich von Sacken (Ex. 1002). Patent Owner relies on a declaration of James L. Kaschmitter (Ex. 2001).

III. ANALYSIS

A. Claim Construction

We apply the claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). 37 C.F.R. § 42.100(b). Under *Phillips*, claim terms are afforded "their ordinary and customary meaning." *Phillips*, 415 F.3d at 1312. The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Id.* at 1313. Only terms that are in controversy need to be construed, and then only to the extent

[3] The relevant sections of the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–129, took effect on March 16, 2013. The '352 patent claims priority to applications with filing dates after this date. *See* Ex. 1001, codes (22), (63). For the purposes of this Decision, AIA statutes apply.
[4] CN 104157914 A, published November 19, 2014 (Ex. 1004). Citations herein are to the certified English language translation.
[5] CN 101826609 A, published September 8, 2010 (Ex. 1005). Citations herein are to the certified English language translation.
[6] CN 202839841 U, published March 27, 2013 (Ex. 1013). Citations herein are to the certified English language translation.
[7] US 2011/0159344 A1, published June 30, 2011 (Ex. 1006).
[8] US 2013/0052499 A1, published February 28, 2013 (Ex. 1007).

necessary to resolve the controversy. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

We have considered Petitioner's position that no claim terms require construction, and Patent Owner's assertion that Patent Owner applies the plain meaning of the claim terms. Pet. 14; Prelim. Resp. 14. We determine we need not expressly construe any claim term at this stage of the proceeding. *See Realtime Data*, 912 F.3d at 1375.

B. Level of Ordinary Skill in the Art

Petitioner asserts that a

> person of ordinary skill in the art ("POSITA") . . . would have had a bachelor's degree from an accredited institution in a discipline relating to lithium-ion secondary batteries, including but not limited to electrical engineering, mechanical engineering, physics, materials science, chemistry, or chemical engineering, as well as three or more years of academic or industry experience in the field of batteries, including battery design.

Pet. 14 (citing Ex. 1002 ¶¶ 39–41).

Patent Owner adopts Petitioner's definition of a person of ordinary skill in the art. *See* Prelim. Resp. 13. Accordingly, for the purposes of this Decision, we adopt Petitioner's proposal regarding the level of ordinary skill in the art.

C. Discretion to Deny Institution under § 314(a)

Institution of an *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular circumstances, but not requiring institution under any circumstances);

Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) ("[Section] 314(a) invests the Director with discretion on the question whether to institute review . . . ." (emphasis omitted)); *Harmonic*, 815 F.3d at 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.").

When determining whether to exercise discretion to deny institution in view of a parallel proceeding, we consider the following factors:

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

Apple Inc. v. Fintiv, Inc., IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"). "These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding." *Id.*

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 314(a) and not institute trial, given that trial in the parallel district court litigation is scheduled for February 5, 2024; fact discovery will close in mid-September 2023; initial expert reports are due September 18, 2023; the Wang, Deng, and Zhou references are also asserted in the parallel

district court litigation; and the Petition is weak. Prelim. Resp. 65–69; Sur-Reply 1–5.

Petitioner argues that we should not deny institution under *Fintiv* "because Petitioner presents a compelling unpatentability challenge." Pet. 100. Petitioner also provides a stipulation to "not pursue the same petitioned invalidity grounds in the related district court action . . . nor . . . any invalidity ground that includes Deng, Zhou, Kobayashi, or Hasegawa." Reply 1–2. According to Petitioner, the median time-to-trial in the Eastern District of Texas is 24.2 months. Pet. 101. Petitioner thus projects trial to occur in June or July 2024, which Petitioner estimates is three months before an anticipated final written decision in this *inter partes* review proceeding, and argues that factors 1, 2, 4, and 5 do not warrant denial. *Id*.

For the reasons stated below, we exercise our discretion to deny institution in view of the parallel district court litigation.

1. Likelihood of a Stay

A district court stay of parallel litigation pending resolution of an *inter partes* review allays concerns about inefficiency and duplication of efforts, which strongly weighs against exercising our authority to deny institution. *Fintiv*, Paper 11 at 6.

Neither party has brought to our attention any request for a stay or any indication that a stay is likely in the parallel district court proceeding. Pet. 101 ("No stay has been requested . . . ."); Prelim. Resp. 57 (stating that "a stay pending institution of this IPR has not been requested"). Thus, we find this factor does not weigh for or against discretionary denial, and we regard the factor as neutral. *See Fintiv*, Paper 11 at 6–9.

2. Proximity of Trial Date to Projected Statutory Deadline

Regarding *Fintiv* factor 2, the projected statutory deadline for issuance of a final written decision in this proceeding is in October 2024. Petitioner argues that trial is projected to occur, at the earliest, in June or July 2024, based on the median time-to-trial statistics for the Eastern District of Texas. Pet. 101 (citing Ex. 1014, 12; Ex. 1015, 1; Ex. 1016, 35).

According to Patent Owner, jury selection in the parallel district court litigation has been scheduled for February 5, 2024, about nine months before the statutory deadline. Prelim. Resp. 65–66 (citing Ex. 1015). Patent Owner argues that Petitioner agrees that trial will occur prior to any anticipated final written decision and that the Board has denied institution in view of similar or smaller gaps between the trial date and the projected statutory deadline. *Id.* at 66 (citing *EClinicalWorks, LLC v. Decapolis LLC*, IPR2022-00229, Paper 10 at 9 (PTAB Apr. 13, 2022) (denying institution where the jury trial would occur "roughly one to two months before any final decision"); *Samsung Elecs. Co., Ltd. v. California Inst. of Tech*., IPR2023-00130, Paper 10 at 16 (PTAB May 4, 2023) (denying institution where the final decision would be eight months after trial according to the court's scheduling order or five months after according to the time-to-trial statistics for the court); *Roku, Inc. v. IOENGINE, LLC*, IPR2022-01553, Paper 11 at 10–11 (PTAB May 5, 2023) (denying institution where the final decision would be seven months after trial according to the court's scheduling order or six months after according to the time-to-trial statistics for the court)).

Because this decision on institution is being issued in October 2023, the statutory deadline for a final written decision would be October 2024, which makes the trial date of February 5, 2024 about eight or nine months before the statutory deadline as Patent Owner calculates. Correspondingly,

Petitioner's calculated time period based on the median time-to-trial statistics would place trial approximately three to four months before the statutory deadline for a final written decision. Petitioner argues that this factor does not warrant denial because the Board has instituted with a similar time frame between trial and final written decision. Pet. 101–102 (citing *NetNut v. Bright Data*, IPR2021-01492, Paper 12 at 9–16 (PTAB Mar. 21, 2022) ("*NetNut*") (co-pending trial date six months before the final written decision deadline).

The Director has clarified the application of the second *Fintiv* factor in the Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings With Parallel District Court Litigation ("*Fintiv* Memo").[9] Specifically, the *Fintiv* Memo states that, when applying the second factor, the Board "will consider the speed with which the district court case may come to trial and be resolved," but that "the proximity to trial should not alone outweigh all . . . other factors." *Id.* at 8–9. While parties may submit median time-to-trial statistics for the district court for the Board's consideration, we will "also consider additional supporting factors such as the number of cases before the judge in the parallel litigation and the speed and availability of other case dispositions." *Id.* at 9.

The evidence presented by the parties suggests that a trial in the parallel district court litigation is likely to occur prior to the due date of our final written decision if we were to institute an *inter partes* review. Based on the court's scheduling order, trial would occur about eight or nine months before the statutory deadline. A trial date about eight or nine months before

[9] *Available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

our statutory due date weighs heavily in favor of discretionary denial. Based on Petitioner's median-time-to-trial data, trial would occur about three to four months before the statutory deadline. Although much closer in proximity to our statutory deadline, this timing still weighs in favor of discretionary denial, especially considering that fact discovery and initial expert reports will be completed in September 2023 (Ex. 1015, 3 (setting September 18, 2023 for completion of fact discovery and for serving disclosures for expert witnesses by the party with the burden of proof)).

Here, the parties have not provided any evidence or arguments regarding the caseload of the assigned judge or whether extensions of time have been sought or are anticipated in the parallel district court litigation. The facts here distinguish the instant proceeding from other *Fintiv* analyses to which Petitioner directs us. *See NetNut*, Paper 12 at 10–11 (where the parties presented evidence that the jury selection date had been delayed by almost six months, evidence that the parties had sought extensions, and evidence that fact discovery had not been completed). Because the evidence presented by the parties suggests that, by any measure, a trial in the parallel district court litigation is likely to occur months before the due date of our final written decision if we were to institute an *inter partes* review, this factor heavily favors exercising our discretion to deny institution.

3. Investment in the Parallel Proceeding

Regarding *Fintiv* factor 3, Patent Owner asserts the parties will have expended significant efforts in the parallel district court litigation by the expected institution date because fact discovery has been ongoing since December 2022 and will close in mid-September 2023, before the expected institution decision date. Prelim. Resp. 67. Patent Owner points to the time and resources spent taking depositions in Hong Kong; the at least seven

expert witnesses who have been disclosed by the parties whose initial reports will have been completed by September 18, 2023; and the completion of claim construction by mid-August 2023. *Id.* at 67–68. Patent Owner argues that "Petitioner was served on June 24, 2022" but "waited nine months to file its petition, choosing not to file a post-grant review, and then waiting nearly two months *after* the '352 Patent became IPR eligible to file its petition." Sur-Reply 1–2.

Petitioner acknowledges that the parties exchanged infringement and invalidity contentions and that the claim construction hearing was scheduled for August 2023. Pet. 101. Petitioner does not dispute that fact discovery closes and initial expert reports will be completed by September 18, 2023, i.e., before the institution decision date. Ex. 1015 (parallel district court litigation docket). Nevertheless, Petitioner asserts "Factor 3 further favors institution because almost no parallel investment has occurred." Pet. 101. In the Reply, Petitioner argues that it was "diligent in filing its IPR petition in March 2023, shortly after the '352 patent became IPR-eligible in February 2023." Reply 1. Petitioner also argues that before Patent Owner filed its Preliminary Response, Patent Owner represented to the district court that the litigation "is still in its early stages." *Id.* (citing Ex. 1018, 2).

Petitioner's argument is not persuasive because the pertinent inquiry concerns the investment in the parallel proceeding by the court and parties "at the time of the institution decision," (*Fintiv*, Paper 11 at 9), and, here, at the time of the institution decision, the undisputed evidence shows that parties have exchanged infringement and invalidity contentions, a claim construction hearing was scheduled, and fact discovery closes and initial expert reports will be completed September 18, 2023. Moreover, although Petitioner may file whichever type of proceeding it chooses, the time frame

between the date of service and Petitioner's eventual filing of a petition was, as Patent Owner notes, nine months. Sur-Reply 1–2. We do not find the parties' arguments about diligence to be persuasive in view of the significant efforts expended by the parties at this stage.

We determine that this factor heavily favors denial of institution, because the district court proceeding has already advanced beyond fact discovery to the completion of initial expert reports.

4. Overlap of Issues

Regarding *Fintiv* factor 4, Patent Owner asserts there is substantial overlap between the Petition and the parallel district court litigation, because Wang, Deng, and Zhou, the primary prior art references asserted in this proceeding, are also being asserted in the invalidity contentions in the parallel district court litigation. Prelim. Resp. 68.

In response, Petitioner stipulates that it "will not pursue the same petitioned invalidity grounds in the related district court action . . . nor will [Petitioner] pursue any invalidity ground that includes Deng, Zhou, Kobayashi, or Hasegawa." Reply 1–2 (citing *Microsoft Corp. v. WSOU Investments, LLC*, IPR2021-00930, Paper 8 at 11 (PTAB Dec. 2, 2021); *Ericsson Inc. v. Koninklijke KPN N.V.*, IPR2022-00079, Paper 9 at 13 (PTAB May 22, 2022)).

Patent Owner points to the narrowness of Petitioner's proffered stipulation and asserts this factor "barely favors institution." Sur-Reply 2.

Concerns about the degree of overlap may be mitigated where a petitioner agrees not to pursue in the parallel proceeding the grounds advanced in the petition. *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC,* IPR2019-01393, Paper 24 at 11–12, 12 n.5 (June 16, 2020) (informative). A petitioner stipulating not to pursue any ground raised

or that could have been reasonably raised precludes discretionary denial. *Fintiv* Memo, 7–8 (the Board "*will not discretionarily deny institution* of an IPR or PGR in view of parallel district court litigation where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition" (emphasis added)); *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential as to § II.A).

Here, Petitioner's stipulation extends to the same grounds raised in the Petition, but does not extend to any ground "that could have been reasonably raised" pursuant to *Sotera*. Another concern with Petitioner's proffered stipulation is that it omits Wang, stating that Petitioner will not "pursue any invalidity ground that includes Deng, Zhou, Kobayashi, or Hasegawa." Reply 1–2. Every ground in the Petition is based on Wang as a primary reference, and by leaving open the possibility of using Wang in other invalidity grounds (not limited to those raised in the Petition), the second clause of Petitioner's stipulation addresses only the secondary references. Because Petitioner's stipulation obviates some potential for duplication or redundancy with respect to the patentability of the challenged claims (albeit not to the extent a full *Sotera*-type stipulation would have), we determine that the fourth *Fintiv* factor weighs somewhat against denial of institution.

5. Identity of Parties

Regarding *Fintiv* factor 5, Patent Owner asserts that denying institution is supported because the same parties are involved in both the present proceeding and the parallel district court litigation. Prelim. Resp. 68. Petitioner asserts that factor 5 does "not warrant denial." Pet. 101.

Petitioner here is a defendant in the parallel district court litigation. The Board has found that this factor "favors denial if trial precedes the Board's Final Written Decision and favors institution if the opposite is true." *See, e.g.*, *Huawei Tech. Co. v. WSOU Inv., LLC*, IPR2021-00225, Paper 11 at 14 (PTAB June 14, 2021). Thus, because trial in the parallel district court litigation is likely to precede the final written decision in this case by a significant period of time as discussed above, this factor favors denial of institution.

6. Other Circumstances, Including the Merits

The *Fintiv* Memo states, among other things, that "where the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination ***alone*** demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*." *Fintiv* Memo, 4–5 (emphasis added). Further, "[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence." *Id.* at 4. Thus, the *Fintiv* Memo does not change the statutory standard for institution under 35 U.S.C. § 314(a), but, rather, negates the other *Fintiv* factors in the face of a compelling challenge. We consider whether there are compelling merits when, as here, our analysis of the first five *Fintiv* factors favors denial of institution. *See CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 5 (PTAB Feb. 27, 2023) (precedential).

a) Principles of Law

In an *inter partes* review, "the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic*, 815 F.3d at 1363 (citing 35 U.S.C. § 312(a)(3) (requiring *inter*

partes review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when presented, objective evidence of nonobviousness, i.e., secondary considerations.[10] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Petitioner cannot satisfy its burden of proving obviousness by employing "mere conclusory statements," but "must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the "interrelated teachings of multiple patents"; "any need or problem known in the field of endeavor at the time of invention and addressed by the patent"; and the background knowledge, creativity, and common sense of the person

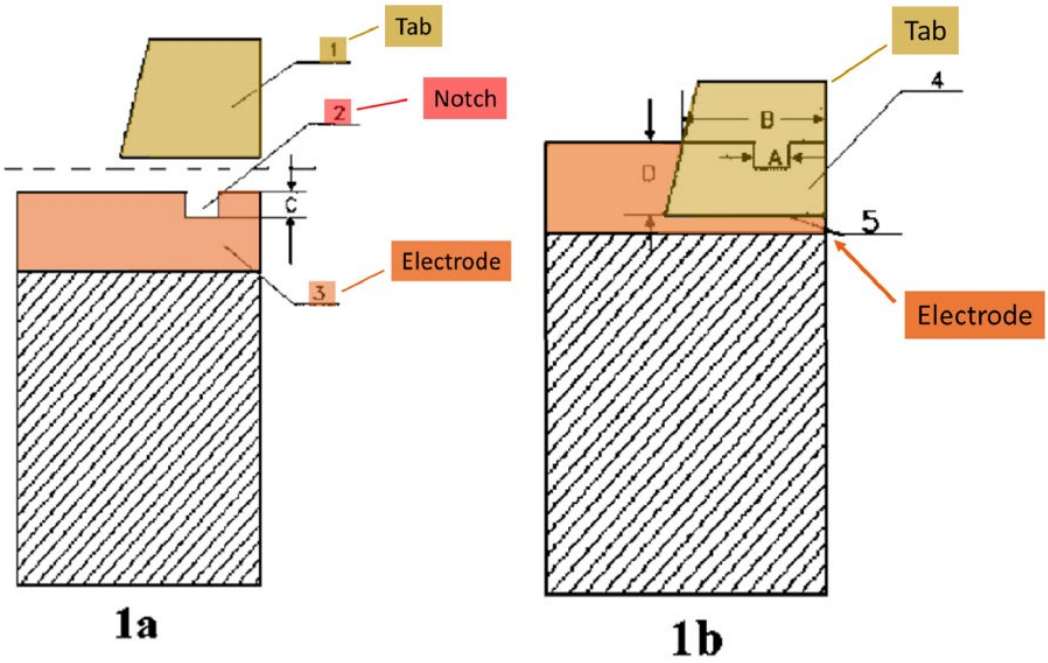
[10] At this stage, Patent Owner does not present any objective evidence of secondary considerations as to any of the challenged claims.

of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009) (quoting *KSR*, 550 U.S. at 418–421).

b) Asserted Obviousness in view of Wang and Deng

Petitioner challenges claims 1–3 and 9–12 as obvious over Wang in combination with Deng (Ground 1). Pet. 10. Petitioner also challenges claims 5–8 as obvious over Wang, Deng, and Kobayashi (Ground 3), and claim 11 as obvious over Wang, Deng, and Hasegawa (Ground 5). *Id.*

Petitioner contends that Wang discloses every limitation of claim 1 (Pet. 17–35), apart from limitation 1(g) ("a first electrode plate notch disposed on a side edge of the first electrode tab receiving groove and extending through the second surface and the first surface of the first current collector"), which Petitioner contends is disclosed by the combination of Wang and Deng. *Id.* at 28–34. Petitioner asserts that one of ordinary skill in the art would have modified Wang to include a first electrode plate notch in view of Deng. *Id*. More particularly, Petitioner contends that Deng discloses a notch through the edge of an electrode plate in a "to-be-welded area" of the electrode, which "changes the structure of a welding area of the tab" on the electrode so that "the welding area is discontinuous, and heat or deformation is also discontinuous and stops at the notch rather than accumulates into the next section." *Id.* at 28. Petitioner provides annotated versions of Deng's Figures 1a and 1b, reproduced below.



Deng's annotated Figures 1a and 1b show the "position of an exemplary notch relative to the electrode tab and edge of the current collector (e.g., 'electrode 3'), both before and after welding." Pet. 29; Ex. 1005, Figs. 1a, 1b. Petitioner argues that both "Wang and Deng disclose attaching an electrode tab to an electrode current collector via welding." Pet. 30. Petitioner provides an annotated version of Wang's Figure 2, reproduced below, to depict where Petitioner believes Wang discloses certain elements of claim 1, including the proposed notch.

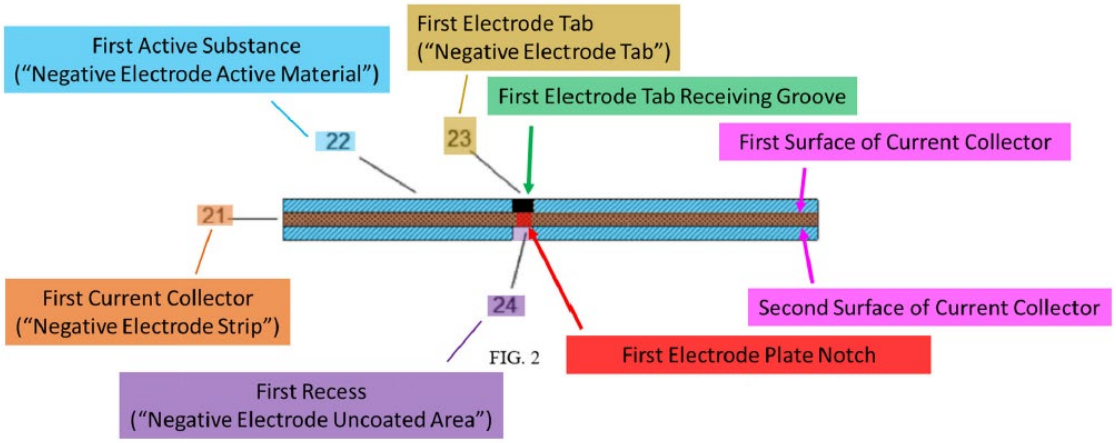
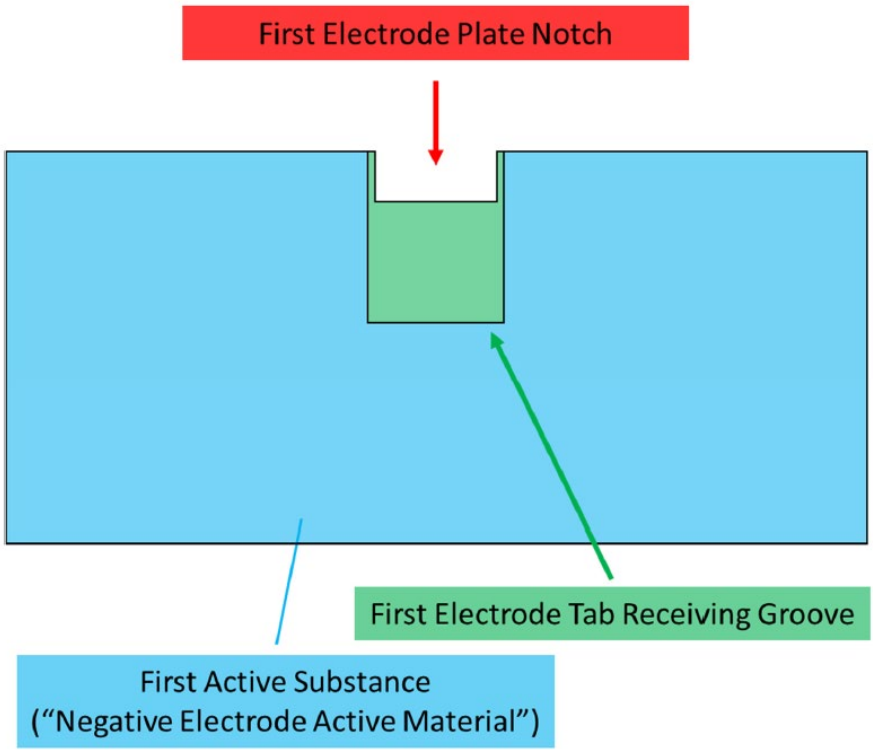


FIG. 2

Pet. 31. Petitioner's annotated version of Wang's Figure 2 depicts negative electrode active material in blue, first electrode tab receiving groove in green or black, and first electrode plate notch in red. According to Petitioner, one of ordinary skill in the art "would have understood that the notch in the modified Wang negative electrode would appear in a top-down view as shown in the figure below." *Id.* at 31.



Id. Petitioner's figure depicts where Petitioner's combination would have a first electrode plate notch (red) and first electrode tab receiving groove (green) in the first active substance (blue). *Id.* Petitioner argues that this combination would require "only routine skill, knowledge, and standard production and machining techniques" and would have yielded "predictable results." *Id.* at 33–34 (citing Ex. 1002 ¶ 82).

Patent Owner responds, first, that Deng's "notch 2" is not a "first electrode tab receiving groove" or "first electrode plate notch." Prelim. Resp. 16–20. More particularly, Patent Owner argues that Deng's notch 2 is positioned in a "to-be-welded area" in "a direction perpendicular to the welding direction," which results in Deng's tab 1 "being welded to an area *on the top of* and *overlapping* with the electrode 3" and "not 'received' in notch 2," as required by claim 1. *Id.* at 17–18. According to Patent Owner, one of ordinary skill in the art "would understand that Deng merely discloses the use of notches in a perpendicular direction to prevent the spreading and accumulation of heat into the area surrounding the welding area, not to receive a tab." *Id.* at 19–20 (citing Ex. 2001 ¶¶ 66, 83).

Next, Patent Owner contends that one of ordinary skill in the art would not have combined Wang and Deng. Prelim. Resp. 20–22. More particularly, Patent Owner argues that Wang "discloses a lithium-ion battery that employs very thin, foil type aluminum or copper current collectors and thin electrode tabs," and Deng is not a lithium-ion battery, but an "unrelated ***flat metal plate type battery*** such as a nickel metal hydride, lead acid, or nickel zinc battery, that comprises thick electrode plates and large, thick electrode tabs." *Id.* at 21 (citing Ex. 2001 ¶¶ 71, 76–81). Additionally, Deng "discloses use of ***resistance welding***" whereas Wang "uses ultrasonic welding," and ultrasonic welding would have "***no need for reducing heat***

accumulation, unlike the resistance welding used by Deng." *Id.* at 21–22 (citing Ex. 2001 ¶¶ 72–74).

Patent Owner also argues that Deng is not analogous art. *Id.* at 23–30 (citing *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) ("Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed" and "(2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.")). As to the first prong of the analogous art test, Patent Owner argues that Deng is a flat metal plate type battery, whereas Wang and the '352 patent are lithium-ion batteries. *Id.* at 23. According to Patent Owner, one of ordinary skill in the art "would not weld electrode tabs in lithium-ion batteries in such a manner" as the resistance welding used in Deng. *Id.* at 25. As to the second prong of the analogous art test, Patent Owner argues that Deng is not reasonably pertinent to the particular problem with which the inventor of the '352 patent was involved, because "Deng discloses, at best, heat mitigation techniques related to resistance welding," which "would damage the current collector of a lithium-ion battery," and "would not have been considered by the inventors when solving the problems of the '352 Patent." *Id.* at 27. As argued by Patent Owner, Deng's benefit of reducing heat accumulation and warping from resistance welding "is not an issue for the lithium-ion battery of Wang or the '352 patent," which one of ordinary skill in the art would understand to benefit from the low operating temperature and good welding performance of ultrasonic welding. *Id.* at 29–30. Next, Patent Owner argues that Petitioner's proposed modification would render Wang's current collector susceptible to damage and tearing. *Id.* at 30–32. Finally, Patent Owner argues that even if Wang

and Deng were combined as proposed by Petitioner, the resulting notch would not disclose the claimed "first electrode plate notch," because Wang uses "**patch coating**," a technique that creates "island areas" and leaves an uncoated area or strip across the entire width of the electrode. *Id.* at 32–35 (citing Ex. 2001 ¶ 93).

Petitioner replies that Deng is not limited to "the unrelated field of flat metal plate type batteries" and discloses "a method for connecting an electrode and a tab of 'a battery' generally." Reply 2. Deng states that welding a tab to an electrode "typically uses resistance welding," which Petitioner argues does not exclude other types of welding. *Id.* at 2–3 (quoting Ex. 1005 ¶ 2). Petitioner contends that Deng is "plainly from the same field of endeavor as the '352 patent," because the '352 patent relates to "the field of secondary batteries" generally, rather than lithium-ion batteries in particular, and "Deng indisputably encompasses a secondary (rechargeable) battery regardless of its type." *Id.* at 3 (citing Ex. 1001, 1:6–7, 15:1–30; Ex. 1005 ¶ 1). Petitioner criticizes Patent Owner's argument that Deng lacks a claimed notch, because Petitioner relies on Wang for the claimed electrode tab receiving groove. *Id.* at 4. Regarding reasons to combine Wang and Deng, Petitioner argues that Deng is not limited to resistance welding, and Deng's notch "helped address that issue" of welding deformation. *Id.* at 4–5. Finally, regarding Patent Owner's argument that the combination would have rendered Wang's current collector "susceptible to damage and tearing," Petitioner points to claim 4, which recites a notch width that can be up to 0.8 times the width of the electrode tab receiving groove. *Id.* at 5.

Patent Owner responds that the "combination of Wang and Deng fails at least because Deng is directed to a flat metal plate type battery that relies

on internal resistance welds." Sur-Reply 2. Patent Owner takes issue that the Reply "newly argues that Deng allegedly discloses a method for connecting an electrode and a tab of 'a battery' ***generally*** and that Deng is allegedly not limited to resistance welding." *Id.* In sum, Patent Owner argues, the "evidence demonstrates that Deng's method is not directed to a lithium-ion battery and cannot be combined with one." *Id.* at 3. Patent Owner also argues that claim 1 requires that the battery be a "wound-type secondary battery," which one of ordinary skill in the art would understand to refer to a wound-type lithium-ion battery. *Id.* at 4 (citing Ex. 2001 ¶ 50). Patent Owner also faults Petitioner for ignoring the claim language "requiring that the claimed first notch be 'disposed on a side edge of the first electrode tab receiving groove' that 'receiv[es] the first electrode tab.'" *Id.* Finally, Patent Owner argues that it has shown that ultrasonic welding is chosen for its low operating temperature, that claim 4 does not impact Patent Owner's arguments, and that Petitioner's patch coating arguments are misguided. *Id.* at 4–5.

On this record, we are not persuaded that Petitioner's case presents compelling merits for institution; notably, we find less than compelling Petitioner's motivations to combine Wang and Deng. Patent Owner argues that Deng's notch is not the claimed "first electrode plate notch" due to its positioning and function, namely, that Deng's notch is located on the to-be-welded area of Deng's electrode (or tab) (Ex. 1005 ¶ 4), that the electrode and tab are "welded to form a current collector" (Ex. 1005 ¶ 14), and that Deng's notch has a heat dissipation and warping-minimizing function during welding (Ex. 1005 ¶ 7). Prelim. Resp. 17–19. As argued by Patent Owner, the existence of a notch in Deng's battery, put there for purposes of heat dissipation and minimizing warping, would not necessarily lead one of

ordinary skill in the art to make the combination of Deng with Wang, because a "person of ordinary skill in the art would have understood that the ultrasonic welding method used by Wang would have ***no need for reducing heat accumulation***, unlike the resistance welding used by Deng." Ex. 2001 ¶ 74. Patent Owner also argues that Deng discloses and focuses on a different type of battery than that of Wang, and a welding process that is potentially incompatible with Wang. *Id*. at 20–22.

Given the testimony regarding Wang's use of relatively low-temperature "ultrasound welding" (Ex. 1004 ¶¶ 43, 48, 109; Ex. 2001 ¶¶ 85–86 (ultrasonic welding "involves the use of a high frequency of ultrasonic energy to produce oscillating shears to create solid-state bonds between two sheets clamped under pressure at elevated but relatively low temperatures"); Ex. 2005, 3), and in the absence of any articulation of the benefit of heat reduction in Wang's process, we are not persuaded that a person of ordinary skill in the art would have looked to combine Deng's heat-dissipating notch with Wang's secondary battery in the manner proposed by Petitioner. *See also* Prelim. Resp. 22 (arguing that the "use of resistance welding in Wang would cause significant damage to Wang's current collector, rendering Wang's lithium-ion battery inoperable"), 24–25 (citing Ex. 2001 ¶ 78).

As Patent Owner also points out, Deng's notch is not located in an electrode tab receiving groove to receive an electrode tab, nor does it mitigate a burr problem (Prelim. Resp. 16, Sur-Reply 5)), which calls into question Petitioner's asserted motivation to combine Deng's notch with Wang's electrode tab receiving groove in the manner proposed (Pet. 30 ("In view of Deng's stated benefits of its electrode notch, such as to reduce the accumulation of heat and the resulting deformation and/or warping of the electrode to which the tab is welded," one of ordinary skill in the art "would

have been motivated to modify Wang's negative electrode to include a notch on the current collector where the first (e.g., anode) electrode tab will be welded." (citing Ex. 1002 ¶ 76))), because Deng's notch lacks the location and function that would have motivated one of ordinary skill in the art to make the combination. We also consider Patent Owner's concerns about the suitability of Deng's availability for combination with Wang sufficiently well-founded, based in part on Patent Owner's argument and evidence indicating that Deng is directed to a flat metal plate type battery that would use a resistance welding process, instead of a lithium-ion wound battery that would use an ultrasonic welding process. *See In re Bigio*, 381 F.3d at 1325. Accordingly, we find Petitioner's rationale for the combination lacking.

As discussed above, "[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence." *Fintiv* Memo, 4. While Petitioner's arguments and evidence provide an explanation for the proposed combination with respect to limitation 1(g), they do not plainly lead to a conclusion that one of ordinary skill in the art would have been motivated to make the combination of Wang and Deng to attain limitation 1(g) and, thus, are not sufficiently supported by the record for purposes of an obviousness challenge under this framework. Consequently, Petitioner does not present a compelling, meritorious challenge to claim 1 as obvious over Wang and Deng.

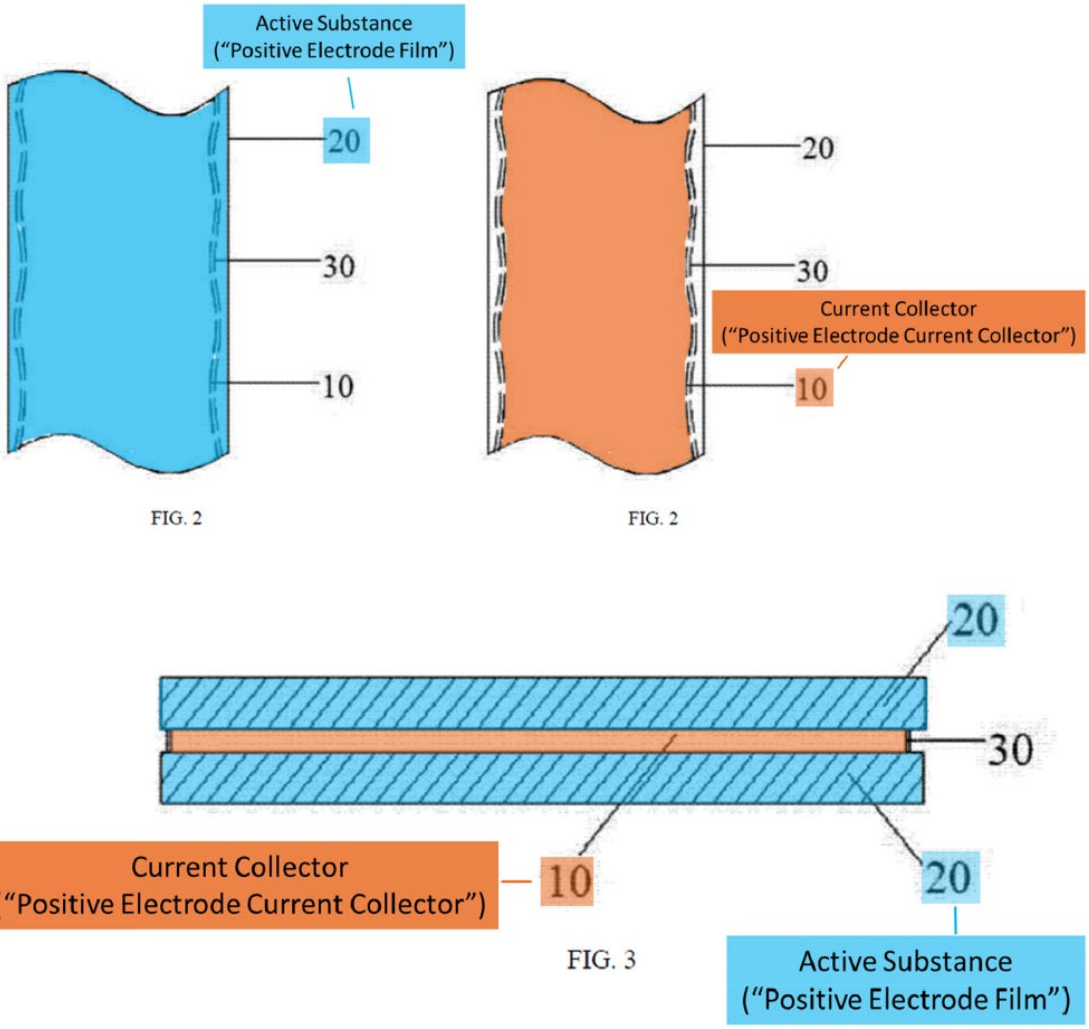
We have reviewed Petitioner's contentions as to the remaining dependent claims challenged in Ground 1 (claim 2, 3, and 9–12), Ground 3 (asserted obviousness of claims 5–8 over Wang, Deng, and Kobayashi) and Ground 5 (asserted obviousness of claim 11 over Wang, Deng, and Hasegawa). Petitioner's remaining Ground 1 contentions and its Ground 3

and Ground 5 contentions all address dependent claims that depend from claim 1. None of Petitioner's contentions overcome the identified deficiency in its Ground 1 arguments for asserted obviousness of claim 1, from which all the challenged dependent claims depend. Accordingly, Petitioner also does not present a compelling, meritorious challenge to claims 2, 3, and 5–12 in Grounds 1, 3, and 5.

c) Asserted Obviousness in view of Wang and Zhou

Petitioner challenges claims 1–3 and 9–12 as obvious over Wang in combination with Zhou (Ground 2). Pet. 10. Petitioner also challenges claims 5–8 as obvious over Wang, Zhou, and Kobayashi (Ground 4), and claim 11 as obvious over Wang, Zhou, and Hasegawa (Ground 6). *Id.*

Petitioner contends that Wang discloses every limitation of claim 1, apart from limitation 1(g) ("a first electrode plate notch disposed on a side edge of the first electrode tab receiving groove and extending through the second surface and the first surface of the first current collector"), which Petitioner contends is disclosed by the combination of Wang and Zhou. Pet. 58–82. Petitioner asserts that one of ordinary skill in the art would have modified Wang to include a first electrode plate notch in view of Zhou. *Id.* at 61–69. More particularly, Petitioner contends that Zhou discloses a "method of removing electrode burrs at the edge of an electrode current collector using gas plasma etching," as shown in Petitioner's annotated Figures 2 and 3 of Zhou, reproduced below.



Zhou's annotated Figures 2 and 3 show Petitioner's depiction of the position of Zhou's current collector 10 (orange with wavy edges) relative to Zhou's active substance 20 (blue with straight edges and a width that exceeds current collector 10's wavy edges). Pet. 62; Ex. 1013, Figs. 2, 3. According to Petitioner, one of ordinary skill in the art "would have understood that Zhou's electrode tab receiving groove would appear in a top-down view, for example, as shown in annotated Figure 2 below." Pet. 63.

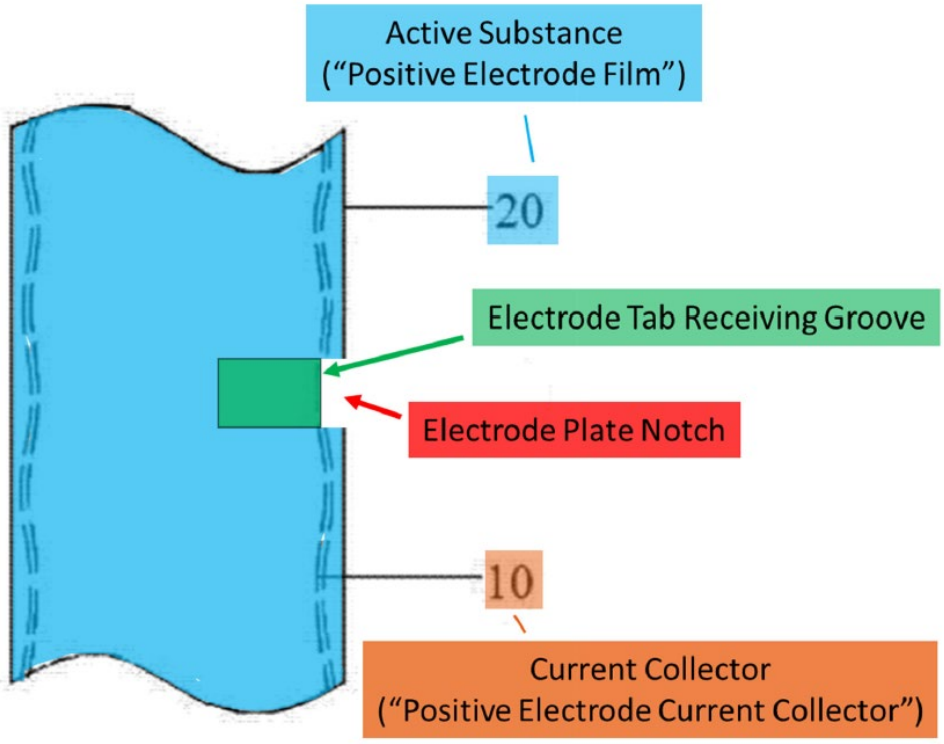
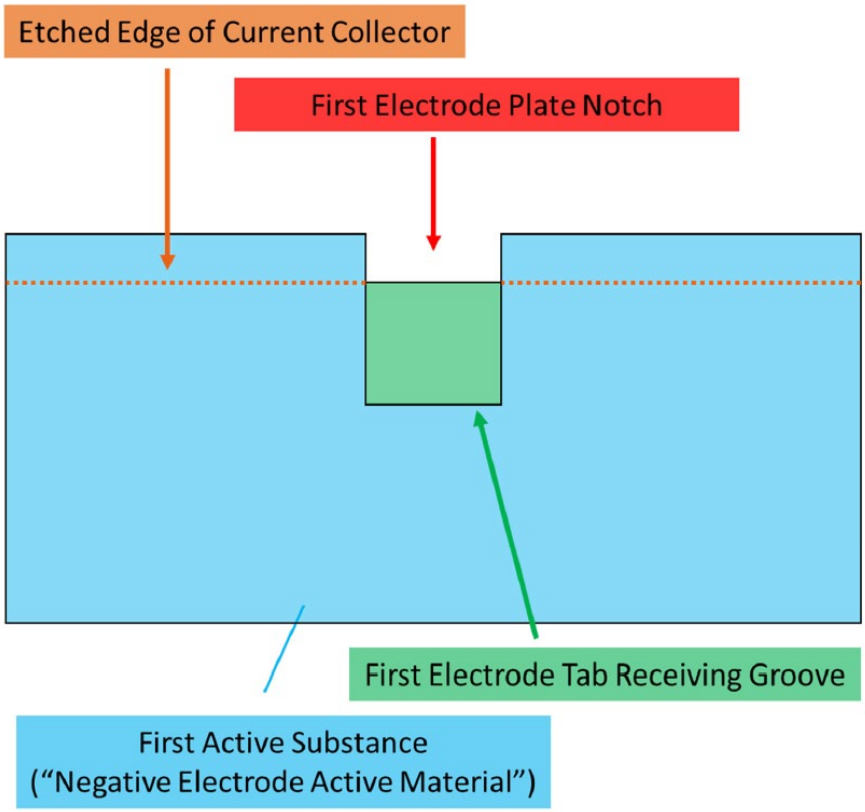


FIG. 2

Id. Petitioner's annotated version of Zhou's Figure 2 depicts where Petitioner's combination would locate the electrode plate notch (red) and electrode tab receiving groove (green) in the first active substance (blue). *Id.* Petitioner argues that one of ordinary skill in the art would have understood "that Zhou's plasma etching technique for burr removal would also be applicable to an anode" because "electrode burrs were a well-known problem on both cathodes and anodes." *Id.* at 65. Petitioner also argues that one of ordinary skill in the art "would have understood that a notch in the modified Wang negative electrode would appear in a top-down view as shown in" Petitioner's figure, reproduced below. *Id.* at 66.



Id. at 67. Petitioner's annotated figure above depicts the first electrode tab receiving groove (green) recessed in the first active substance (blue) from the edge of the first active substance and ending at a dotted orange line (labeled "Etched Edge of Current Collector") that is parallel to the edge of the first active substance, and the first electrode plate notch is identified with a red arrow as the indent or space in the first active substance above the first electrode tab receiving groove. Petitioner argues that one of ordinary skill in the art would have been motivated to modify Wang's electrode in "view of Zhou's stated benefits of plasma etching the current collector to remove electrode burrs that could damage the battery." *Id.* at 68. Petitioner argues that this combination "would have only required the use of well-known electrode processing and production techniques," and would have yielded

"predictable results with a reasonable expectation of success." *Id.* at 69 (citing Ex. 1002 ¶¶ 148–149).

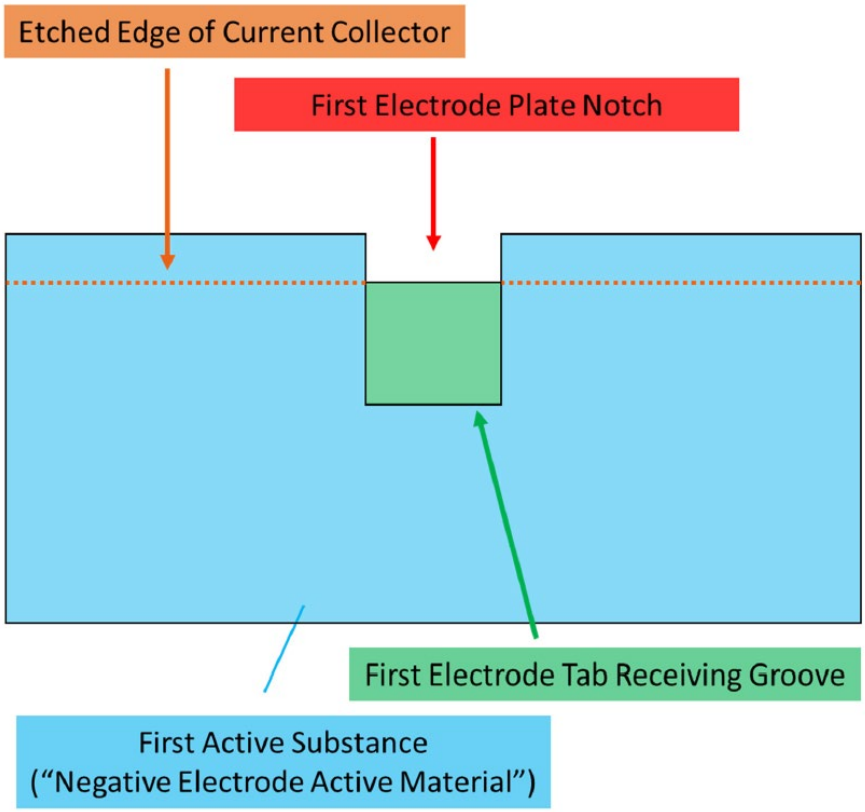
Patent Owner responds that Petitioner fails to show that Wang and Zhou render obvious claim 1. Prelim. Resp. 35–64. First, Patent Owner argues that Wang creates its grooves by patch coating, obviating the need for the claimed first electrode plate notch. *Id.* at 36–41. According to Patent Owner, patch coating prevents lithium plating by creating an uncoated area along the entire width of an area of a current collector to form an uncoated "island" or "strip," and one of ordinary skill in the art "would understand that there would be no burrs to remove from Wang's patch coated electrodes." *Id.* at 39–41 (citing Ex. 2001 ¶¶ 104–106, 110–111).

Next, Patent Owner contends that one of ordinary skill in the art would not have combined Wang and Zhou. *Id.* at 42–43. First, Patent Owner argues that Zhou does not disclose a first electrode tab receiving groove or a first electrode plate notch. *Id.* at 44–54. Rather, Patent Owner argues, "Zhou discloses a continuously coated electrode that does not have an uncovered region ***at all***, which means that the entirety of the current collector is covered by active material." *Id.* at 45 (citing Ex. 1003, Fig. 2; Ex. 2001 ¶ 118). Patent Owner argues that Zhou's "burrs" are addressed by a "specific mitigation strategy whereby Zhou etches the entire electrode 2 along the entire length of the current collector 10 by gas plasma etching using gases that selectively etch only the current collector 10," but not electrode film 20. *Id.* at 47–48 (citing Ex. 2001 ¶¶ 119–120). The resulting "indented current collector," according to Patent Owner, "mitigates the fact that not all burrs may be removed" and this intentional structure of an indented current collector between protruding electrode films 20 "would not result in" limitation 1(g). *Id.* at 49–50 (citing Ex. 2001 ¶¶ 123–124).

Second, Patent Owner argues, Zhou's burrs present a separate and distinct problem from the problem solved by the '352 patent and the disclosure of Wang. *Id.* at 54–57. "Because there are no burrs to remove from Wang's patch coated electrodes in the location alleged by Petitioner," argues Patent Owner, one of ordinary skill in the art "would have no reason or motivation to create the claimed first electrode plate notch in Wang's battery" and "would have understood that the burrs located along the entire length of the current collector as taught by Zhou would not be mitigated by a single groove or notch and, thus, there would be no motivation to create a groove or notch." *Id.* at 54–56 (citing Ex. 2001 ¶¶ 131, 136).

Third, Patent Owner argues, one of ordinary skill in the art could (and would) not etch only a select area of Wang's current collector using Zhou's gas plasma etching to form the claimed first electrode plate notch. *Id.* at 57–59. According to Patent Owner, it would be "difficult—if not impossible—to implement Zhou's gas plasma etching only on a select, localized region of Wang's current collector" because of the constraints of Zhou's system and the number of tab areas that would need "such precision vacuum sealing" during the process. *Id.* at 58–59 (citing Ex. 2001 ¶¶ 138–140).

Finally, Patent Owner argues that even assuming one of ordinary skill in the art would combine Wang and Zhou as Petitioner proposes, the resulting structure would not disclose the claimed "first electrode plate notch." *Id.* at 59–64. Referring to Petitioner's annotated figure, reproduced below,



Patent Owner argues that "any area above the dashed orange line in Petitioner's proposed combination cannot house the first electrode tab receiving groove, and thus cannot house the first electrode plate notch" which must extend "through the second surface and the first surface of the first current collector." *Id.* at 62–64 (citing Ex. 2001 ¶¶ 146–148).

Petitioner replies that Zhou's etching solves the same "burr" problem as the '352 patent, and modifying Wang with Zhou's current collector etching process yields the claimed "first electrode plate notch." Reply 5. Petitioner takes issue with Patent Owner's "misplaced argument that Wang's modified *current collector* alone lacks a notch," arguing that "the claimed notch is in the *electrode plate*, which includes both the active substance layers *and* the current collector." *Id.*

Patent Owner replies that Petitioner inaccurately asserts that Zhou's etching solves the same burr problem as the '352 patent, because Zhou's burrs are created by slitting rather than laser ablation and are not in a groove created by patch coating, which prevents burrs altogether. Sur-Reply 5. Patent Owner reiterates that "Petitioner fails to demonstrate a notch in the current collector alone and, thus, likewise fails to demonstrate a notch in a current collector as part of the electrode plate." *Id.*

On this record, we are not persuaded that Petitioner's case presents compelling merits for institution; more particularly, we find less than compelling Petitioner's motivations to combine Wang and Zhou. Petitioner relies on Zhou's teachings regarding burr removal to support its assertion that one of ordinary skill in the art would have been motivated to modify Wang's electrode. Pet. 65–68. As argued by Patent Owner, however, Wang's patch coating prevents lithium plating by creating an uncoated "island" or "strip," and one of ordinary skill in the art "would understand that there would be no burrs to remove from Wang's patch coated electrodes." Prelim. Resp. 39–41; Ex. 2001 ¶ 111 (stating that because "there would be no burrs to remove from Wang's patch coated electrodes in the location alleged by Petitioner," a person of ordinary skill in the art "would have no reason or motivation to create the claimed first electrode plate notch in Wang's battery").

Moreover, as noted by Patent Owner, the fact that Zhou discloses burr removal would not necessarily lead one of ordinary skill in the art to make the combination of Zhou with Wang, because the burrs formed as a result of the "electrode cutting" or "slitting" in Zhou "are entirely distinct from the burrs addressed by the '352 Patent's first electrode plate notch, which are caused by laser ablation." Ex. 2001 ¶¶ 115, 119. Zhou's "specific

mitigation strategy" of etching the entire current collector "such that the width of the positive electrode current collector 10 is less than the width of the positive electrode film 20" would not give a person of ordinary skill in the art reason to combine Zhou with Wang, as Patent Owner argues, or result in the "notch" in the combination proposed by Petitioner. *Id.* ¶¶ 119–130 (citing Ex. 1013 ¶ 25); *see also* Prelim. Resp. 56–57 ("burrs located along the entire length of the current collector as taught by Zhou would not be mitigated by a single groove or notch" (citing Ex. 2001 ¶ 136), 58–59 (one of ordinary skill in the art would "not be motivated to use Zhou's gas plasma etching method on a select area of Wang's current collector" and "it would also be infeasible to do so") (citing Ex. 2001 ¶¶ 138–140)). Accordingly, we find Petitioner's rationale for the combination lacking.

Finally, we find persuasive Patent Owner's arguments that Petitioner's proposed first electrode plate notch (Pet. 67) fails to disclose a notch that extends "through the second surface and the first surface of the first current collector" as recited in limitation 1(g), because "the current collector has been etched away along the entirety of the current collector above the dashed orange line." Prelim. Resp. 63. Accordingly, we find Petitioner's proposed combination lacking for the additional reason that it does not account for this portion of limitation 1(g).

As discussed above, "[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence." *Fintiv* Memo, 4. While Petitioner's arguments and evidence provide an explanation for the proposed combination with respect to limitation 1(g), they do not plainly lead to a conclusion that one of ordinary skill in the art would have been motivated to make the combination of Wang

and Zhou to attain limitation 1(g) and, thus, are not sufficiently supported by the record for purposes of an obviousness challenge under this framework. Consequently, Petitioner does not present a compelling, meritorious challenge to claim 1 as obvious over Wang and Zhou.

We have reviewed Petitioner's contentions as to the remaining dependent claims challenged in Ground 2 (claim 2, 3, and 9–12), Ground 4 (asserted obviousness of claims 5–8 over Wang, Zhou, and Kobayashi), and Ground 6 (asserted obviousness of claim 11 over Wang, Zhou, and Hasegawa). Petitioner's remaining Ground 2 contentions and its Ground 4 and Ground 6 contentions all address dependent claims that depend from claim 1. None of Petitioner's contentions overcome the identified deficiency in its Ground 2 arguments for asserted obviousness of claim 1, from which all the challenged dependent claims depend. Accordingly, Petitioner also does not present a compelling, meritorious challenge to claims 2, 3, and 5–12 in Grounds 2, 4, and 6.

7. Summary

Based on the preliminary record, Patent Owner has raised substantial issues with Petitioner's analysis of challenged claims 1–3 and 5–12, so that even if we were to determine that Petitioner met the lower threshold for instituting an *inter partes* review, the evidence does not plainly support Petitioner's position at this stage. Thus, we determine that Petitioner has not presented a compelling, meritorious challenge to any challenged claim of the '352 patent. *See Fintiv* Memo, 4. Accordingly, we find that the sixth *Fintiv* factor does not weigh against discretionary denial.

D. Balancing the Fintiv Factors

We have considered the circumstances and facts before us in view of the *Fintiv* factors. We take "a holistic view of whether efficiency and

integrity of the system are best served by denying or instituting review" when evaluating these factors. *Fintiv*, Paper 11 at 6; *Fintiv* Memo. As discussed above, only factor 4 weighs against discretionary denial, factor 1 is neutral, and factors 2, 3, and 5 weigh in favor of discretionary denial of institution, with factors 2 and 3 weighing heavily in favor. Moreover, Petitioner has not submitted a *Sotera*-type stipulation that would make discretionary denial inappropriate under the *Fintiv* Memo, and likewise, the Petition does not show compelling evidence of unpatentability under factor 6. Given the late stage of the parallel district court litigation, the substantial investment by the parties in that proceeding, and the lack of strong countervailing considerations, including the absence of compelling merits in the Petition, the evidence of record favors exercising our discretion to deny institution of an *inter partes* review.

IV. CONCLUSION

Upon consideration of the Petition, the Preliminary Response, the Reply, the Sur-Reply, and the evidence presented, we exercise our discretion under 35 U.S.C. § 314(a) to deny institution of an *inter partes* review challenging claims 1–3 and 5–12 of the '352 patent.

V. ORDER

For the foregoing reasons, it is hereby:

ORDERED that the Petition is *denied*, and no trial is instituted.

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