

Filed on behalf of: Zhuhai CosMX Battery Co., Ltd.

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.

Case No. IPR2023-00585

Patent No. 11,329,352

**PETITIONER'S REPLY TO
PATENT OWNER'S PRELIMINARY RESPONSE¹**

¹ This Reply was authorized by the Board's August 7, 2023, email (Exhibit 1017).

EXHIBIT LIST

Exhibit	Description
Ex. 1001	U.S. Patent No. 11,329,352 B2 to Guo et al.
Ex. 1002	Declaration of Dr. Ulrich von Sacken
Ex. 1003	Prosecution History of U.S. Pat. No. 11,329,352
Ex. 1004	Chinese Patent App. Pub. No. CN 104157914 A to Wang et al. (“Wang”)
Ex. 1005	Chinese Patent App. Pub. No. CN 101826609 A to Deng et al. (“Deng”)
Ex. 1006	U.S. Patent App. Pub. No. 2011/0159344 to Kobayashi et al. (“Kobayashi”)
Ex. 1007	U.S. Patent App. Pub. No. 2013/0052499 A1 to Hasegawa et al. (“Hasegawa”)
Ex. 1008	Chinese Pat. App. Pub. No. CN 105514352 A to Zhu et al.
Ex. 1009	Olof Ramström, <i>Scientific Background on the Nobel Prize in Chemistry 2019, Lithium-Ion Batteries</i> , The Royal Swedish Academy of Sciences (Oct. 9, 2019).
Ex. 1010	U.S. Patent No. 8,969,756 to Dougherty et al.
Ex. 1011	U.S. Patent App. Pub. No. 2012/0052295 to Iwata et al.
Ex. 1012	U.S. Patent App. Pub. No. 2014/0042121 to Zhang et al.
Ex. 1013	Chinese Patent Publication No. CN 202839841 U to Zhou (“Zhou”)
Ex. 1014	Patent Owner’s Complaint of June 24, 2022, filed in <i>Ningde AmpereX Tech. Ltd. v. Zhuhai CosMX Battery Co., Ltd.</i> , Civ. No. 2:22-cv-00232-JRG (E.D. Tex.)

Exhibit	Description
Ex. 1015	Docket Control Order dated December 12, 2022, in <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co., Ltd.</i> , Civ. No. 2:22-cv-00232-JRG (E.D. Tex.)
Ex. 1016	United States District Court Judicial Caseload Profile - Statistics through March 31, 2022
Ex. 1017	August 7, 2023, Email from the Board Authorizing Reply to Patent Owner's Preliminary Response
Ex. 1018	ATL's Motion for Leave to Amend Infringement Contentions filed in <i>Ningde Amperex Tech. Ltd. v. Zhuhai CosMX Battery Co., Ltd.</i> , Civ. No. 2:22-cv-00232-JRG (E.D. Tex.) (Redacted)

TABLE OF AUTHORITIES

Cases

<i>Ericsson Inc. v. Koninklijke KPN N.V.</i> , IPR2022-00079, Paper 9 (PTAB May 22, 2022)	2
<i>In re Bigio</i> , 381 F.3d 1320 (Fed. Cir. 2004)	3
<i>Intel Corp. v. Pact XPP Schweiz AG</i> , 61 F.4th 1373 (Fed. Cir. 2023)	4-5
<i>Microsoft Corp. v. WSOU Investments, LLC</i> , IPR2021-00930, Paper 8 (PTAB Dec. 2, 2021)	2

ATL's Patent Owner Preliminary Response (Paper 9, "POPR") relies on weak, unsubstantiated arguments that fail to rebut CosMX's Petition. ATL consistently misrepresents the disclosure of the '352 patent and the prior art to read in nonexistent teachings and narrowing limitations; rebuts irrelevant strawman positions; and offers non-obviousness theories that contradict the law. CosMX's strong evidence warrants institution under the compelling merits standard of *Fintiv* Factor 6.

As CosMX explained in its Petition (Pet., 100-102) and in related POPR Reply filings in two concurrent IPR proceedings (IPR2023-00586, Paper 10; IPR2023-00587, Paper 10), the Board should *not* exercise its discretion to deny institution under 35 U.S.C. § 314(a) in view of the parallel litigation. CosMX below highlights noteworthy developments for certain *Fintiv* factors for this case.

***Fintiv* Factor 3 favors institution.** While ATL contends in its POPR that the litigation "is *already* in an advanced stage" (POPR, 68), ATL told the E.D. Texas court the month before filing its POPR that the parallel litigation "is still in its early stages." Ex. 1018, 2. Moreover, CosMX was diligent in filing its IPR petition in March 2023, shortly after the '352 patent became IPR-eligible in February 2023.

***Fintiv* Factor 4 favors institution.** CosMX moots ATL's arguments with the following stipulation: If the Board institutes review in this proceeding, then CosMX will not pursue the same petitioned invalidity grounds in the related district court action (Civ. No. 2:22-cv-00232-JRG), nor will CosMX pursue any invalidity ground

that includes Deng, Zhou, Kobayashi, or Hasegawa. *See 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).

Fintiv Factor 6 favors institution. ATL’s scattershot preliminary response demonstrates that CosMX has shown compelling merits in both sets of obviousness grounds (based on Deng and Zhou, respectively). ATL does not dispute that Wang discloses every element of claim 1 except for the “notch” element (claim 1(g)). Moreover, ATL does not (and reasonably cannot) dispute that it would have been well within the skill of a POSITA to implement a notch in Wang’s electrode plates with a reasonable expectation of success. ATL’s primary defense is that the prior art is so different from the broad battery technology described and claimed in the ’352 patent that a POSITA would not have even considered it. This is readily disproven by the facts already of record. ATL’s remaining arguments also fail.

ATL’s positions are premised on unjustifiably narrow readings of the prior art. For example, ATL asserts that Deng “comes from the unrelated field of flat metal plate type batteries” and “relies on resistance welding to internally weld an electrode tab to an electrode plate using a high current.” POPR, 2-3, 20-30. But Deng is not so limited and discloses a method for connecting an electrode and a tab of “a battery” generally (*see, e.g.*, Ex. 1005 ¶[0001]), not a specific type of battery. Similarly, ATL’s assertion that Deng is limited to “the use of resistance welding” is contradicted

by the reference itself, which says that welding a tab to an electrode “*typically* uses resistance welding.” Ex. 1005 ¶[0002] (emphasis added). Resistance welding, which Deng mentions only once in its background section, is just one exemplary type of welding. Deng elsewhere refers to welding generally, such as “welding using a conventional welding method.” *Id.* Ultrasonic welding in secondary batteries was indisputably conventional in the art, so even if ATL’s exaggerated arguments regarding alleged differences between ultrasonic and resistance welding are presumed correct (they are not), Deng still does not exclude ultrasonic welding.

ATL’s argument that Deng is not analogous art also lacks any merit. While ATL asserts that Deng is not “reasonably pertinent to the particular problem with which the inventor is involved” (POPR, 26-30), it is not even necessary to reach this issue because Deng is plainly from the same field of endeavor as the ’352 patent. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). ATL’s position relies on its incorrect assertion that the ’352 patent is limited to lithium-ion batteries, while Deng is not. POPR, 23-25. As noted above, Deng is not so limited. Ex. 1005 ¶[0001]. Neither is the ’352 patent, which broadly states that its invention “**relates to the field of secondary batteries**, in particular to a structure of the secondary battery.” Ex. 1001, 1:6-7 (emphasis added). Similarly, claim 1 recites “a secondary battery,” *not* a lithium-ion battery. *Id.*, 15:1-30. Deng indisputably encompasses a secondary (rechargeable) battery regardless of its type and is therefore analogous art from the

same field of endeavor as the '352 patent. *See, e.g.*, Pet., 5-7, 16-17, 28-34, 41-45.

ATL's argument that Deng lacks a claimed notch (POPR at 16) is nonsensical. Deng expressly discloses forming a "notch" (Ex. 1005 ¶¶[0004]-[0018]), and ATL's assertion that Deng's notch is not "disposed on a side edge" of the tab receiving groove is irrelevant. CosMX relied on Wang (not Deng) for disclosing the claimed electrode tab receiving groove (e.g., Pet., 20-25, 28-34), and what matters is whether Wang, modified in view of Deng, includes a notch at this position, which it does. *Id.*

ATL's argument that a POSITA would not combine Wang with Deng because Deng's notch is only useful for resistance welding (POPR, 20-22) is wrong. As noted above, Deng is not limited to resistance welding. The benefits of Deng's notch are also not limited to heat-related warping. Specifically, Deng discloses that the notch causes "heat *or deformation*" to stop at the notch such that "accumulation of heat in the welding is reduced, *and accumulation of warping is also reduced.*". Ex. 1005, ¶[0007]. ATL has not, and reasonably cannot, assert that ultrasonic welding (e.g., Wang's) would not result in *any* deformation of the current collector regardless of welding temperature, and CosMX's strong rationale for why a POSITA would have modified Wang in view of Deng stands. Pet., 28-34, 41-45. Indeed, "[i]t's enough" for CosMX to prove obviousness where "there was a known problem" in the art (welding deformation), Deng's notch "helped address that issue," and combining Wang and Deng "wasn't beyond the skill of an ordinary artisan." *Intel Corp. v. Pact*

XPP Schweiz AG, 61 F.4th 1373, 1379-81 (Fed. Cir. 2023); Pet., 28-34, 41-45.

ATL's remaining arguments similarly lack merit. Modifying Wang with Deng's notch would not have rendered Wang's current collector "susceptible to damage and tearing" (POPR, 30-32). This is flatly contradicted at least by claim 4, which recites a notch width (i.e., vertical dimension in the notch figures and ATL's "deep" direction) that can be up to "0.8 times" (i.e., 80%) the width of the electrode tab receiving groove. Ex. 1001, 16:5-11. Moreover, all of ATL's arguments for alleged "patch coating" in Wang (e.g., POPR, 32-41) are irrelevant because the claimed first electrode tab receiving groove requires only two active substance side walls (Ex. 1001, 15:26-28), which Wang meets regardless of whether its tab receiving groove extends partly or fully across the electrode. Ex. 1002 ¶¶66, 93, 141.

ATL's arguments regarding Zhou are especially weak, as ATL misapprehends both CosMX's position and the scope of the claims. Zhou's etching solves the same "burr" problem as the '352 patent (Pet., 2-4, 58-69; Ex. 1001, 1:19-39, 2:26-40; Ex. 1013 ¶¶[0004]-[0007]), and modifying Wang with Zhou's current collector etching process yields the claimed "first electrode plate notch," as well as every other claim element, in the same manner shown in the '352 patent. Pet. 67-69. ATL's misplaced argument that Wang's modified *current collector* alone lacks a notch (POPR, 59-64) is irrelevant because the claimed notch is in the *electrode plate*, which includes both the active substance layers *and* the current collector. Ex. 1001, 15:4-9; Pet. 61-69.

Respectfully submitted,

Date: August 14, 2023

By: /Michele C. Bosch/
Michele C. Bosch (Reg. No. 40,524)

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on August 14, 2023, a copy of the foregoing **Petitioner's Reply to Patent Owner's Preliminary Response and Exhibits 1017 and 1018** were served electronically via email on the following:

Christopher TL Douglas
ALSTON & BIRD LLP
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
christopher.douglas@alston.com

Nicholas J. Choi
ALSTON & BIRD LLP
90 Park Avenue, 15th Floor
New York, NY 10016
nick.choi@alston.com

Patent Owner has consented to service by email.

Date: August 14, 2023

By: /Mark A. Rosenberger/
Mark A. Rosenberger
Case Manager
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP